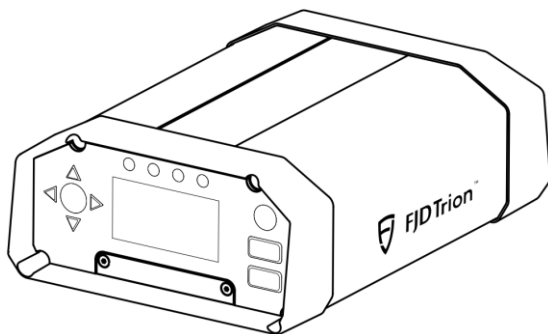




N10 GNSS Reference Receiver

User Manual

■ September 1, 2023 | Rev. 1.2

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Revisions:

Version	Date	Description	Revised By
1.2	2023.09.01	First release	Terry.Qin

Read Before Use:



Operate in strict accordance with this manual.

Failure to follow the instructions may result in device damage and performance degradation.

If you have any questions during use, contact the service personnel.

Disclaimer:

- The purchased products, services, and features are stipulated by the contract. All or part of the products, services, and features described in this guide may not be within the scope of your purchase or usage. Unless otherwise specified in the contract, all the content in this guide is provided "AS IS" without warranties of any kind, express or implied.
- The content of this guide is subject to change due to product upgrades and other reasons. FJDynamics reserves the right to modify the content of this guide without notice.
- This guide only provides guidance for use of this product. Every effort has been made in the preparation of this guide to ensure accuracy of the content, but no information in this guide constitutes a warranty of any kind, express or implied.

Preface

Thank you for using this N10 GNSS Reference Receiver from FJDynamics. This manual provides detailed instructions for use of this product. Read this manual carefully and follow the instructions to operate this product. If you have any questions, contact the customer service of FJDynamics.

Purpose

This manual introduces the physical characteristics, specifications, operation, and use of the product.

Technical Support

- FJDynamics official website: <https://www.fjdynamics.com/>
- FJDynamics customer service: service@fjdynamics.com

Safety Instructions

Before using this product, ensure that you have read and understand all the safety instructions and precautions in this manual. You must abide by the safety instructions in this manual and all applicable local laws and regulations.

Operation Environment:

- Keep away from tall trees, high-voltage power lines, tall buildings, airports, signal towers, and other obstacles, to avoid interference to GNSS signals and ensure the positioning accuracy and stability.

Others:

1. Do not disassemble the product without authorization, which may invalidate the warranty.
2. Damage caused by force majeure events, such as lightning strikes, high voltage, and collision, is not covered by the warranty.
3. Use the device in strict accordance with this manual. When connecting cables such as data cables, hold the end of the connector and gently plug or unplug it to avoid damaging the connector.
4. Use chargers designated by FJDynamics and pay attention to the rated voltage of the receiver to avoid device damage.
5. During charging, keep away from fire sources, flammables, and explosives to avoid fire and other serious consequences.
6. Do not plug or unplug cables when the receiver is powered on. Replace damaged cables in time to avoid device damage and personal injury.

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1 Product Introduction

1.1 Overview

N10 GNSS Reference Receiver is the second-generation receiver developed by FJDynamics. It is a high-precision receiver that supports multiple frequencies from multiple constellations such as BDS, GPS, GLONASS, Galileo, and QZSS. Supporting chip-level multipath mitigation, it can offer millimeter-level carrier phase measurements and centimeter-level RTK positioning.

Being highly reliable and available, it is widely applied to GBAS, precision agriculture, surveying and mapping, deformation monitoring, and machine control.

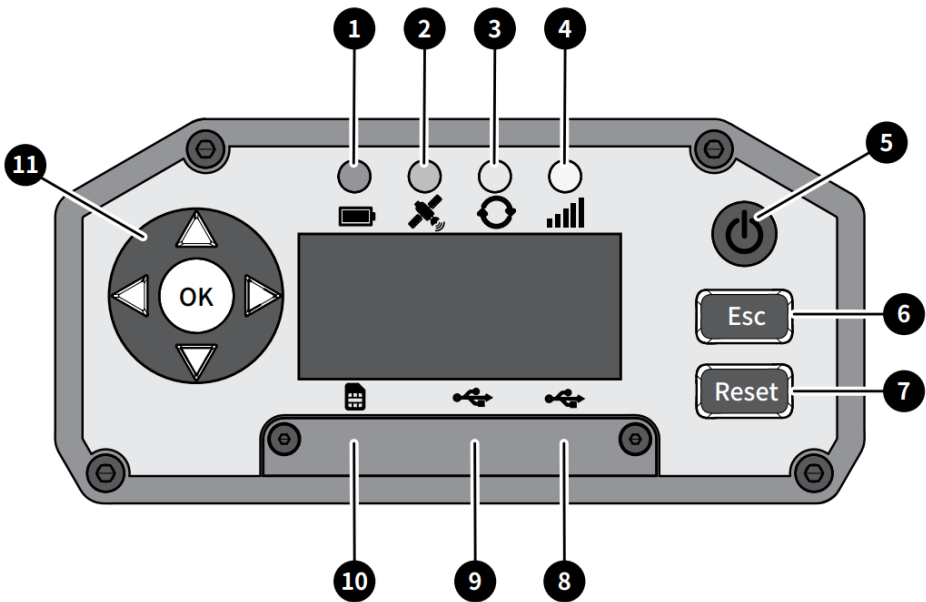
It supports 4G, Wi-Fi, and Ethernet communications. With an aluminum alloy housing and IP67 rating, it is suitable for outdoor applications. The voltage stabilizing and lightning protection features ensure a higher stability.

Highlights:

1. **Easy and convenient to use.** It adopts an embedded Linux system and allows users to access the web interface via Wi-Fi to configure the receiver, making the operations easy and convenient.
2. **Various ports.** It comes with a GNSS antenna port, an RJ45 Ethernet port, a USB HOST port, a USB DEVICE port, a COM2 port, a COM1 port, an SMA external clock port, an SMA PPS output port, an SMA EVENT input port, and a 2-pin LEMO external power supply, and charging port, meeting all the input and output requirements of the reference station and peripherals.
3. **Huge storage space.** It has a storage space of 32 GB, and stores data in files that can be exported via the USB port or the web interface remotely. Stored data will be overwritten after a month.
4. **Remote management.** The 10/100 Mbps Ethernet port can meet GNSS data transfer requirements. Users can configure the receiver parameters through the LAN, front panel, and remote management. OTA firmware updates are also supported, reducing maintenance costs.
5. **Rugged and durable.** With an industrial-grade design, rugged aluminum alloy housing, and IP67 rating, it is highly reliable and available.

1.2 Panels

1.2.1 Front Panel

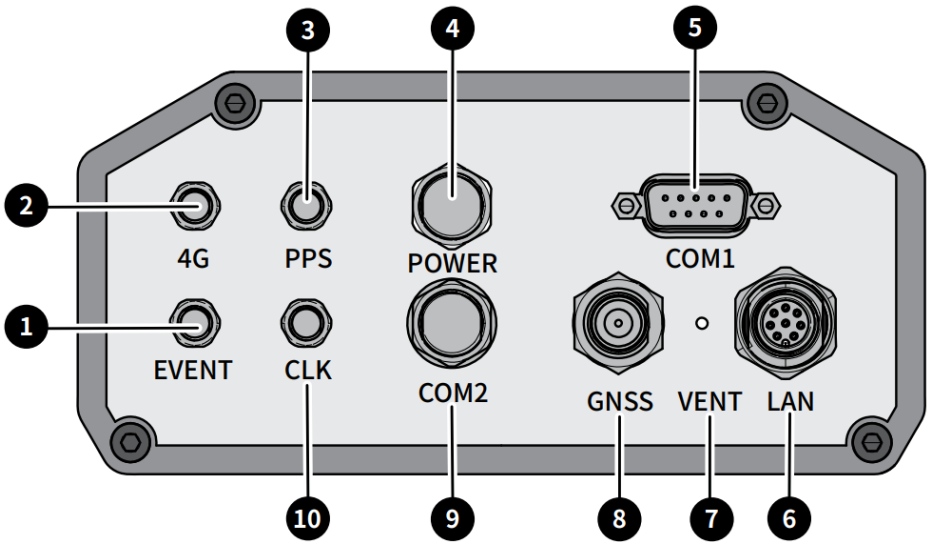


No.	Name	Type	Description
1	Battery level indicator	LED	- Without external power supply (not charging): - Solid green: The battery level is between 30% and 100%. - Solid red: The battery level is below 30%. - With external power supply (charging): - Solid blue
2	Satellite tracking indicator	LED	- Off: The receiver does not track any satellite or tracks less than four satellites. - Solid blue: The receiver tracks at least four satellites.
3	Differential correction indicator	LED	- Base station mode: Blinks blue once per second: The base station mode is enabled successfully. The following requirements must be met. - Choose Receiver Config > Reference Station. Under Work Mode, Mode is set to Base over known point.

No.	Name	Type	Description
			b. Choose I/O Config > Data Transmission. Find any TCP Client/Ntrip Server link, and set all relevant parameters to turn the connection status into Connected. Rover mode: Blinks red once per second: single point solution, float solution, or RTD. Blinks green once per second: fixed solution. The following requirements must be met. a. Choose Receiver Config > Reference Station. Under Work Mode, Mode is set to Rover. b. Choose I/O Config > Data Transmission. Find the RTK Client, and set all relevant parameters to turn the connection status into Connected.
4	Network indicator	LED	- Wired network: Solid green: The receiver can access the Internet normally. 4G network: The network stability depends on the signal strength, which can be represented by the CSQ value. The CSQ value ranges from 0 to 31 and is normally between 20 and 31. The greater the value, the better the signal strength. a. 0–19: Blinks green once per second. The signal strength is too weak to provide stable data transmission indoors or outdoors. b. 20–31: Solid green. The signal strength is strong enough to provide stable data transmission both indoors and outdoors. c. When the receiver uses both the wired network and the 4G network, the indicator shows the status of the wired network as priority. When the wired network is not working normally or disconnected, the receiver switches to the 4G network automatically.
5	Power button	Button	Turn on or off the receiver.
6	Escape button	Button	Exit operations on the screen.
7	Reset	Button	Reset the receiver.

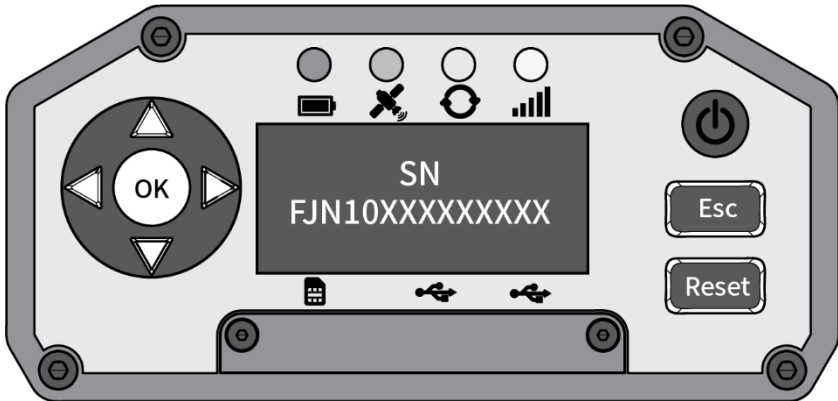
No.	Name	Type	Description
	button		
8	USB DEVICE port	Type-C	Connect to a Type-C cable to burn firmware. Put on the cover and fasten the screws after firmware burning to protect the port.
9	USB HOST port	Type-C	Connect to an external storage device to log data. Use storage devices from mainstream brands, for example, Kingston and SanDisk.
10	SIM card slot	Micro	Micro-sized IoT SIM cards are supported. Put on the cover and fasten the screws after inserting or replacing the IoT SIM card to protect the slot.
11	Navigation arrow buttons and OK button	Button	Control the operations on the screen.

1.2.2 Rear Panel

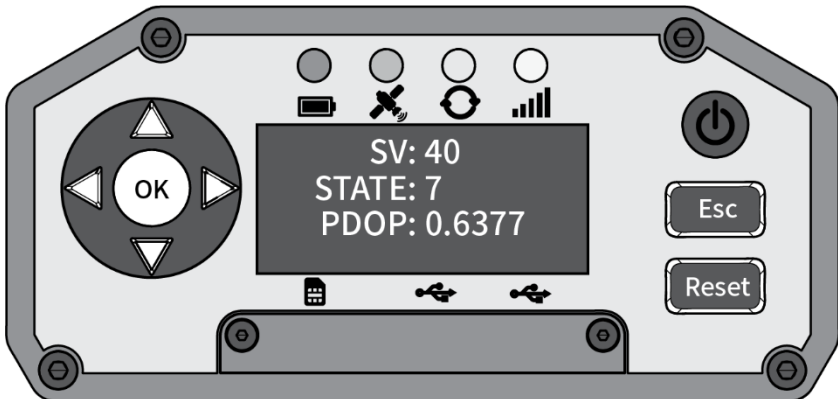


No.	Name	Type	Description
1	EVENT input port	SMA	Inputs external events.
2	4G antenna port	SMA	Connects to the external 4G antenna.
3	PPS output port	SMA	Outputs PPS signals.
4	External power supply port	2-pin LEMO	Provides power to the receiver.
5	COM1 port	DB9	Configures and transparently transfers GNSS board data.
6	Ethernet port	8-pin LEMO to RJ45	Configures and views the receiver parameters.
7	VENT	N/A	Keeps air pressure at the same level inside and outside the receiver.
8	GNSS antenna port	TNC	Connects to the external GNSS antenna.
9	COM2 port	7-pin LEMO	Outputs receiver data.
10	External clock port	SMA	Inputs external clock signals (reserved).

1.3 Display



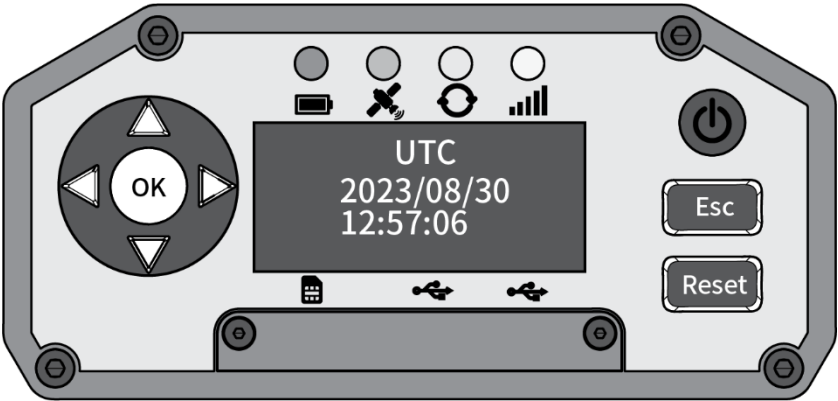
SN: serial number of the receiver.



SV: number of satellites used by the receiver.

STATE: positioning status of the receiver. 1: single; 2: RTD; 4: fixed; 5: float; 6: INS; 7: reference station.

PDOP: position dilution of precision of the receiver.

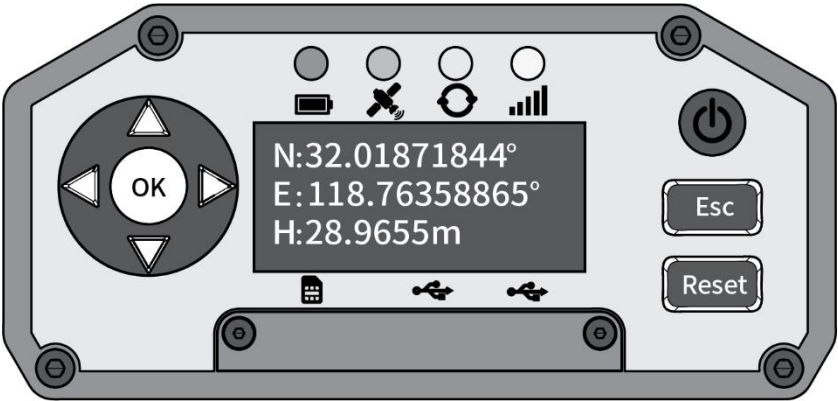


UTC: UTC time of the receiver.

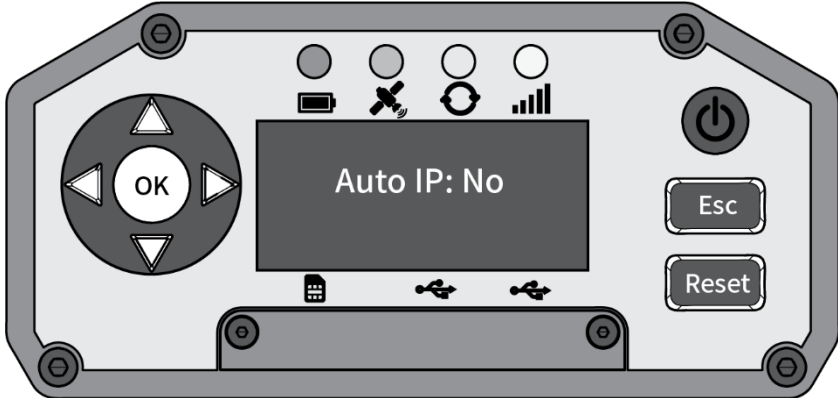
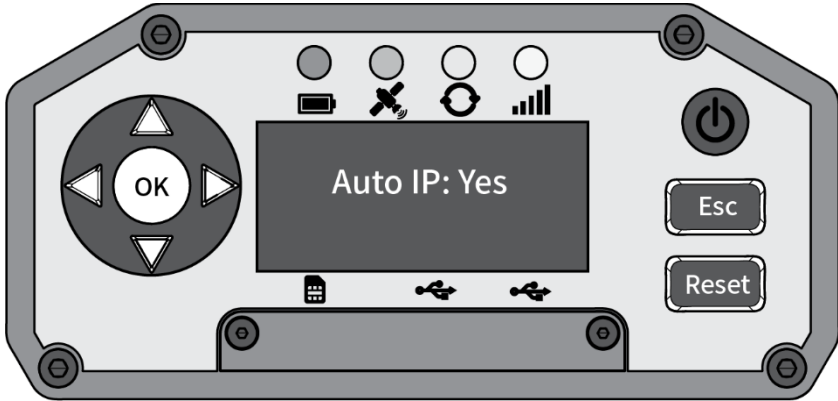


App Ver: application version of the receiver.

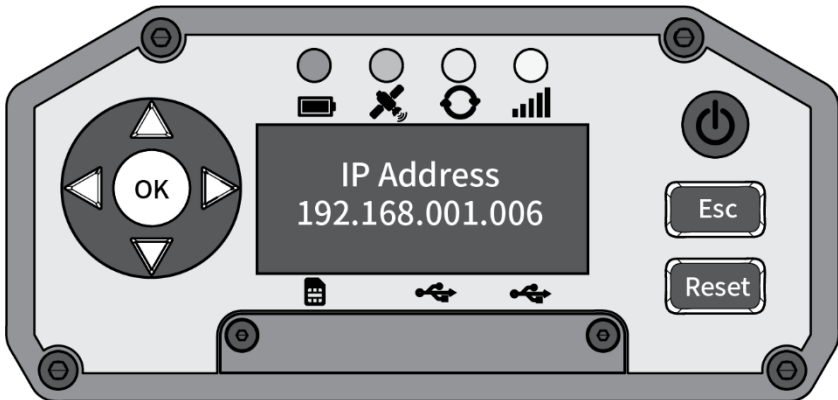
Fw Ver: firmware version of the receiver.

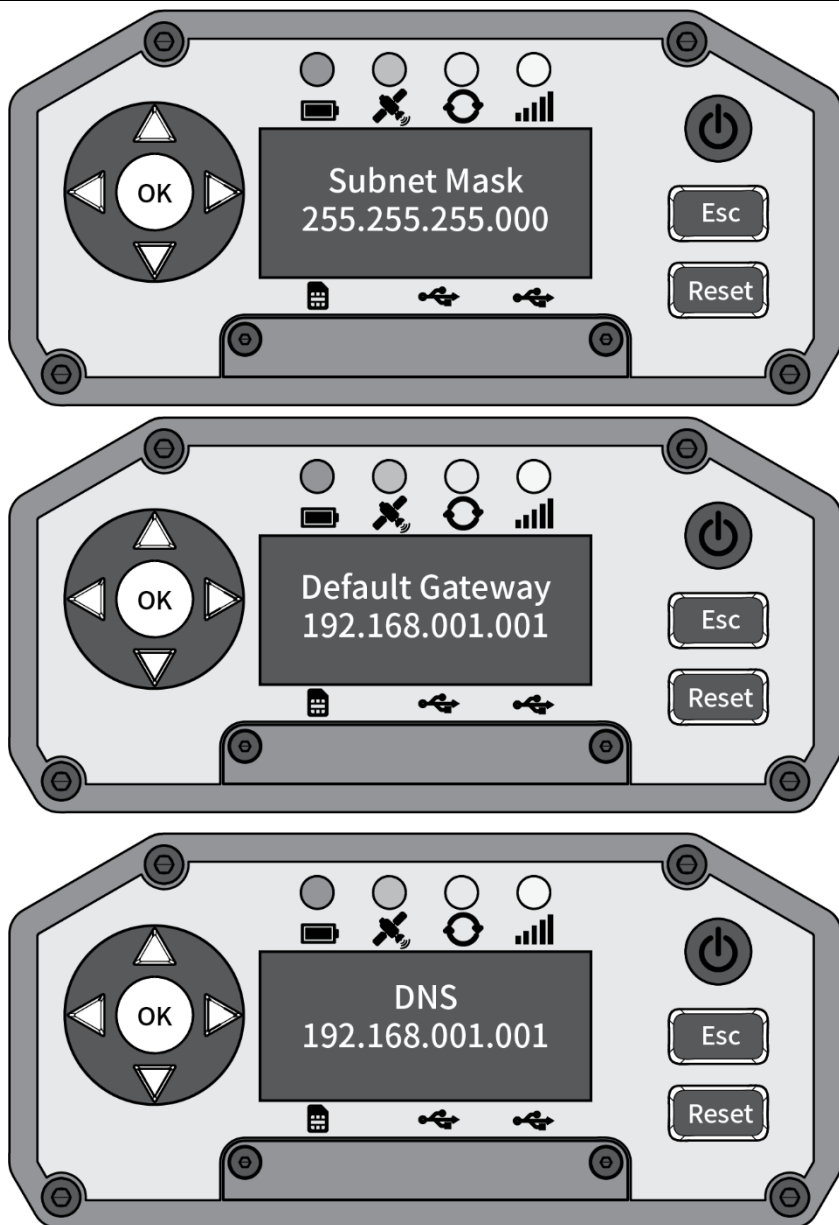


N/S, E/W, and H: latitude, longitude, and height of the receiver.



Auto IP: wired network mode of the receiver. **Yes:** DHCP. **No:** static IP.

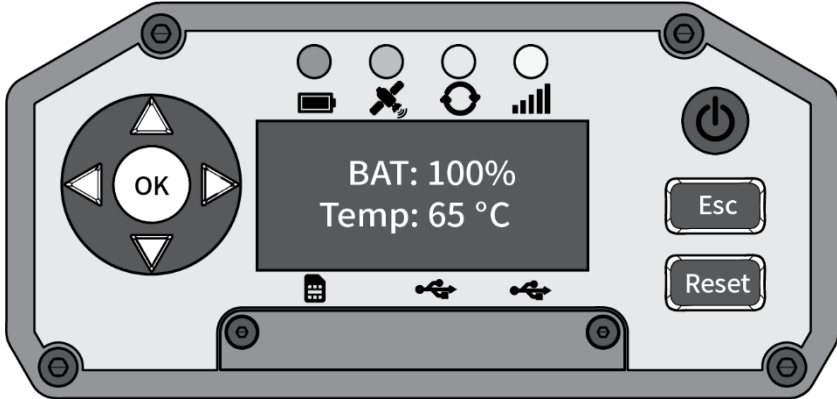




Configure the IP address, subnet mask, default gateway, and DNS based on Ethernet connection, when **Auto IP** is set to **No**.

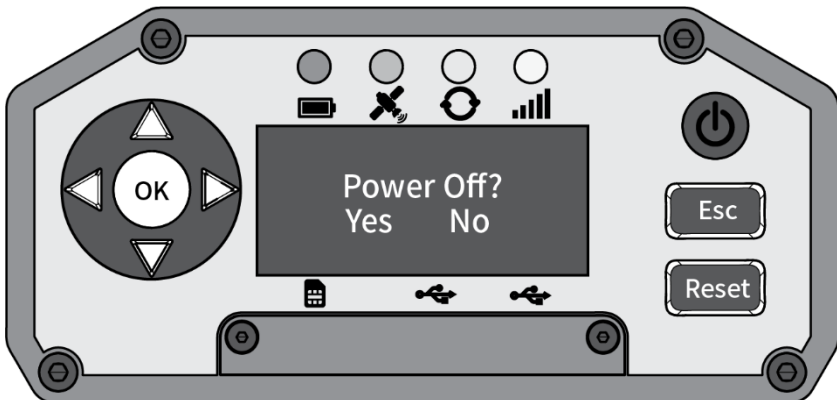
The configuration procedure is as follows, using subnet mask configuration as an example:

1. Press the up or down button to access the subnet mask screen. The default value is 255.255.255.255.
2. Press **OK** to start editing. By default, the first number of the subnet mask is selected. Press the left or right button to select a different number. Press the up or down button to change the selected number to any integer in the range of 0–9. Press **OK** to save changes and exit, or press **Esc** to exit without saving changes.



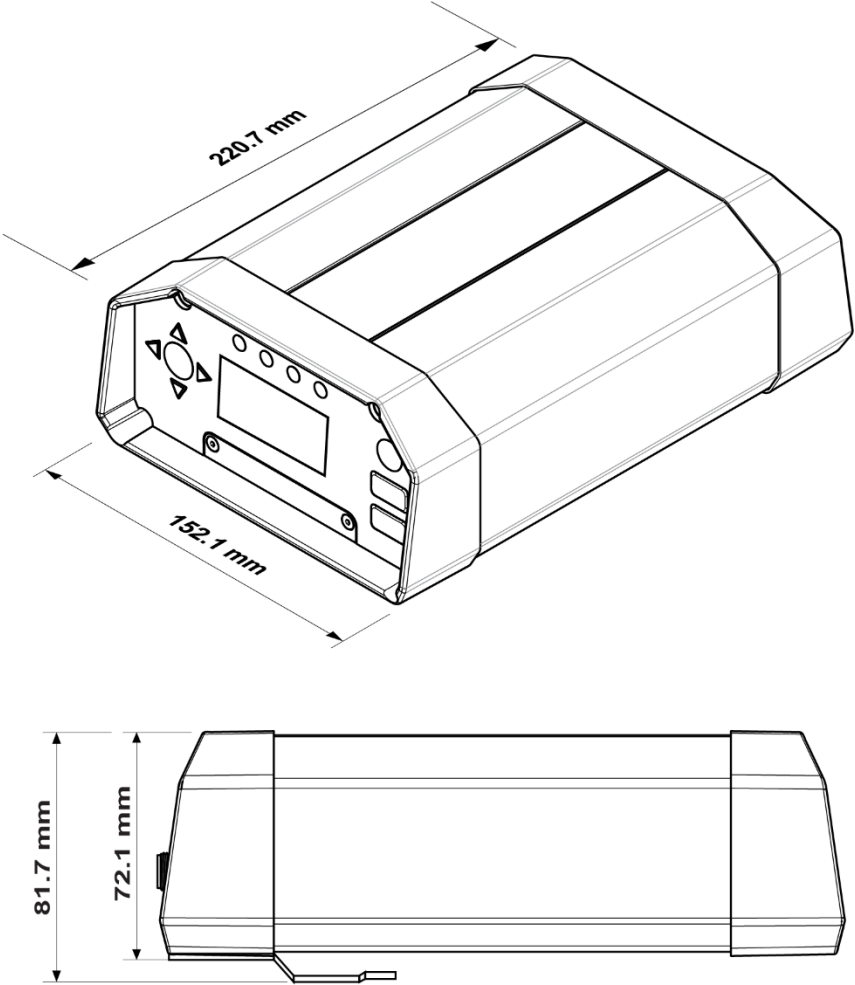
BAT: battery level of the receiver.

Temp: battery temperature of the receiver.



Power Off?: This message appears when you press and hold the power button. Press **OK** to turn off the receiver, or press **Esc** to keep the receiver on.

1.4 Dimensions

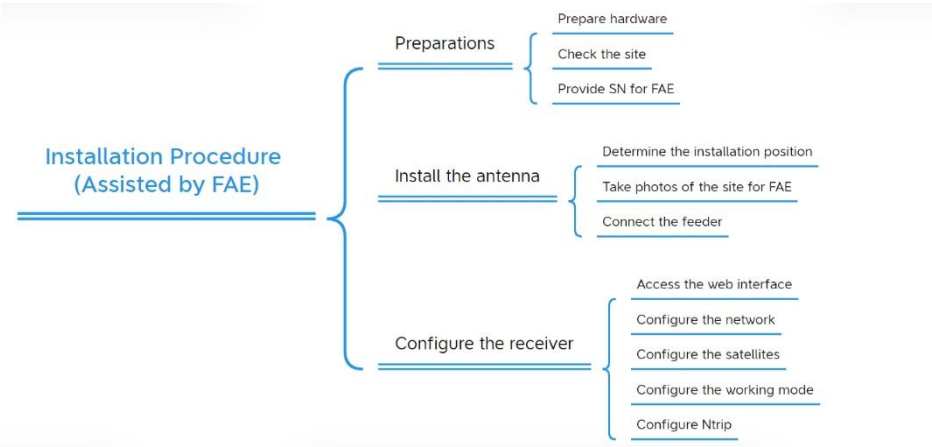


2 Quick Start Guide

2.1 Preparations

No.	Item	Qty.	Description
1	N10 GNSS Reference Receiver	1	
2	Network cable	1	To configure the receiver network. Its length should be decided on site.
3	PC (with a network port)	1	To configure the receiver.

Note: Provide the receiver SN for the FAE before the installation, and the FAE will provide the Ntrip information for you. The SN, such as FJN1023300002ZC, can be found on the nameplate at the bottom of the receiver or on the side of the packaging.



2.2 Installing the GNSS Antenna

To improve the quality of satellite data received by the receiver and minimize problems caused by unstable receiver status, the following requirements must be followed when you install the GNSS antenna.

- Ensure that there is no interfering object within 300 meters of the GNSS antenna. Interfering objects include tall buildings, trees, large areas of waters, beaches, and large areas of photovoltaic panels, as shown below.

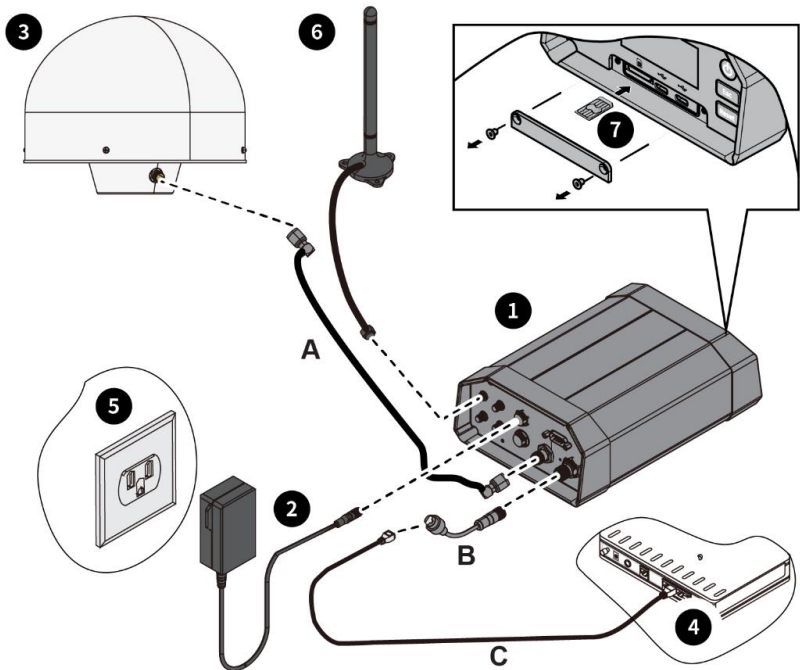


- Ensure that there is no obstruction beyond a vertical angle of 10° above the GNSS antenna. That is to say, there is no obstruction in the line of sight. Setting up the GNSS antenna at a higher position will facilitate the reception of satellite signals.
- Ensure that there is no electromagnetic interference within 300 meters of the GNSS antenna. Electromagnetic interference can be generated by microwave stations, microwave channels, radio transmitting stations, and high-voltage power lines, as shown below.



- The reference station should be set up in areas with easy access to the communication network, stable power supply, convenient transportation, and good public security.

2.3 Device Connections



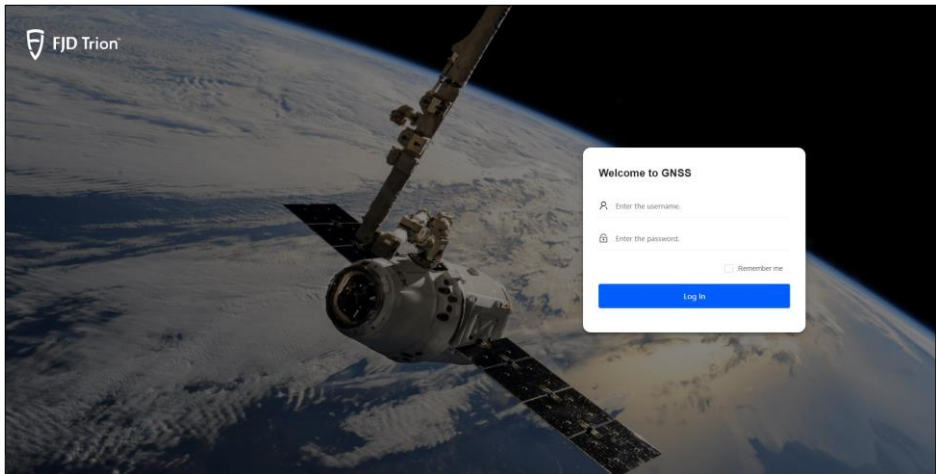
No.	Name	Remarks
1	N10 GNSS Reference Receiver	N/A
2	Power adapter	N/A
3	Choke ring antenna	N/A
4	Ethernet	External network (to be prepared by the user)
5	AC power supply	External power supply (to be prepared by the user)
6	4G antenna	N/A
7	IoT SIM card	Micro-sized 4G SIM card (to be prepared by the user)
A	Feeder	N/A
B	Network cable adapter	N/A
C	Network cable	To be prepared by the user
Note: The receiver supports three communication modes: Ethernet , 4G network , and Ethernet + 4G network .		

2.4 Configuring the Receiver

After connecting the cables as shown above, turn on the receiver and configure it through the following procedure.

2.4.1 Accessing the Web Interface

- Enable Wi-Fi on the PC, find the receiver Wi-Fi "FJN10SN", and enter the password "123456789" to connect to it.
- Open a browser and enter 192.168.200.1 in the address bar. Enter the username "admin" and the password "123456" to log in.



- The web interface of the receiver appears.

FJD Trion

GNSS

SN: FJN10C19100002C

Station Number: 19102C

Station Name: test

English

admin

Receiver Status

Positioning

General

Satellites

Receiver Config

I/O Config

Network Settings

Firmware Update

Positioning

Position

Latitude: 32.01871352°(N)

Longitude: 118.76358114°(E)

Height: 26.7089(m)

Type: Reference Station

Coordinate System: WGS84

Satellites Used: 33

GPS(6): 10,12,23,25,28,32

BDS(14): 1,3,4,6,8,9,13,14,20,23,32,37,38,39,59

GLONASS(6): 38,39,45,48,49,50

Galileo(4): 2,3,8,25

QZSS(3): 194,196,199

Satellites Tracked: 42

GPS(7): 10,12,23,25,28,31,32

BDS(20): 1,2,3,4,5,6,8,9,13,16,20,23,32,37,38,39,41,46,59,60

GLONASS(6): 38,39,45,48,49,50

Galileo(6): 2,3,8,13,25,30

QZSS(3): 194,196,199

DOP

PDOP: 0.7162

HDOP: 3.2851

VDOP: 1.9000

TDOP: 5.9000

Receiver Clock

GPS Week: 2284

GPS Seconds: 281711

Standard Deviations 1σ

Latitude: 0.0000(m)

Longitude: 0.0000(m)

Height: 0.0000(m)

2.4.2 Configuring the Network

To check the Ethernet or 4G network status of the receiver, choose **Network Settings** > **Network Status**.

Method 1 (DHCP):

- Use the network cable to connect the Ethernet port of the receiver to the wired network port.
- Go to **Network Settings**. Under **Wired Network Configuration**, set **Connection Type** to **DHCP**, and click **Save**. The settings take effect automatically.

The screenshot displays the 'Network Settings' page of the FJD Trimble GNSS receiver. The left sidebar contains navigation options: Receiver Status, Satellites, Receiver Config, I/O Config, Network Settings (selected), and Firmware Update. The main content area is titled 'Network Settings' and includes several configuration sections:

- Network Status:** Shows Ethernet Status as 'Disconnected', N2N as 'On', and Dis-UP Connection as 'On'. It also lists Carrier as 'China Mobile', Signal Quality as '24', IoT Card ID as '888884C22622D1170023', and SIM Card as 'Normal'.
- N2N Configuration:** Includes fields for Virtual IP Address and Server IP Address, with a 'Save' button.
- Wired Network Configuration:** Features a dropdown for 'Connection Type' set to 'DHCP' and a 'Save' button.
- Mobile Network Configuration:** Includes a dropdown for 'Network Module' set to 'Enabled', a radio button for 'Auto Start' set to 'Yes', a dropdown for 'Network Mode' set to '2G/3G/4G (auto)', and a dropdown for 'APN' set to '3gnet', with a 'Save' button.

Method 2 (static IP):

- Use the network cable to connect the network port of the PC to the wired network port.
- Open a browser and access any website to ensure that the network is working normally.
- Go to **Settings** > **Network and Internet** > **Network and Sharing Center** > **Ethernet** > **Details** in Windows 10 to access and record the IPv4 address, IPv4 subnet mask, IPv4 default gateway, and IPv4 DNS server information, which are required when configuring the wired network of the receiver. If you are using a different operating system, operations may vary slightly.
- Unplug the network cable from the PC and then plug it into the Ethernet port of the receiver via the network cable adapter.
- Go to **Network Settings**. Under **Wired Network Configuration**, set **Connection Type** to **Static IP**, enter the IP address, subnet mask, default gateway, and DNS information recorded above (enter DNS1 and retain the default value 8.8.8.8 for DNS2), and then click **Save**.

Network Settings

Network Status

Ethernet Status: Disconnected
 N2N: On
 Dial-up Connection: On
 Carrier: China Mobile
 Signal Quality: 21
 IoT Card ID: 88804C22622D1170023
 SIM Card: Normal

N2N Configuration

*Virtual IP Address:
 *Server IP Address:
 Save

Wired Network Configuration

*Connection Type: Static IP
 *IP Address: 192.168.1.6
 *Subnet Mask: 255.255.255.0
 Default Gateway: 192.168.1.1
 DNS1: 8.8.8.8
 DNS2: 8.8.8.8
 Save

Mobile Network Configuration

*Network Module: Enabled
 *Auto Start: Yes ☒ No ☐
 *Network Mode: 2G/3G/4G (auto)
 APN: 3gnet
 Save

Method 3 (4G network):

- Use a hex wrench to remove the screws from the cover on the front panel of the receiver, take down the cover (put on the cover after installation and commissioning), and insert a micro-sized 4G IoT SIM card into the SIM card slot as instructed.
- Go to **Network Settings**. Under **Mobile Network Configuration**, set **Network Module** to **Enabled**, **Auto Start** to **Yes**, and **Network Mode** to **2G/3G/4G (auto)**, enter the APN information provided by the carrier, and then click **Save**. The settings take effect immediately.

Network Settings

Network Status

Ethernet Status: Disconnected
 N2N: On
 Dial-up Connection: On
 Carrier: China Mobile
 Signal Quality: 21
 IoT Card ID: 88804C22622D1170023
 SIM Card: Normal

N2N Configuration

*Virtual IP Address:
 *Server IP Address:
 Save

Wired Network Configuration

*Connection Type: Static IP
 *IP Address: 192.168.1.6
 *Subnet Mask: 255.255.255.0
 Default Gateway: 192.168.1.1
 DNS1: 8.8.8.8
 DNS2: 8.8.8.8
 Save

Mobile Network Configuration

*Network Module: Enabled
 *Auto Start: Yes ☒ No ☐
 *Network Mode: 2G/3G/4G (auto)
 APN: 3gnet
 Save

2.4.3 Configuring the Satellites

- Choose **Satellites > Tracking (Table) > Settings**.
- Set **Elevation Mask Angle** to 15°, and click **OK**. The settings take effect immediately.

The screenshot shows the FJD Trion GNSS software interface. The left sidebar contains navigation options: Receiver Status, Satellites, Tracking (Table), Receiver Config, I/O Config, Network Settings, and Firmware Update. The main window displays the 'Tracking (Table)' settings. A 'Settings' dialog box is open, showing the 'Elevation Mask Angle' set to 15°. Below this, there are sections for 'Satellite System' and 'Frequency' with checkboxes for various systems and frequencies.

No.	Type	Elevation (°)	Azimuth (°)	L1/E1 SNR	L2/E2a SNR	L5/E5b SNR	B1C SNR	B2a SNR	Used
10	GPS	75.3	218.0	51.2	47.7	50.3	0.0	0.0	Yes
12	GPS	37.1					0.0	0.0	Yes
23	GPS	41.5					0.0	0.0	Yes
25	GPS	59.1					0.0	0.0	Yes
28	GPS	42.9					0.0	0.0	Yes
31	GPS	18.2					0.0	0.0	No
32	GPS	52.9					0.0	0.0	Yes
1	BDS	43.4					0.0	0.0	No
2	BDS	38.7					0.0	0.0	No
3	BDS	52.5					0.0	0.0	Yes
4	BDS	31.7					0.0	0.0	No
5	BDS	17.7					0.0	0.0	No
6	BDS	60.7					0.0	0.0	Yes
8	BDS	51.6	198.5	42.1	45.6	44.2	0.0	0.0	Yes
9	BDS	52.7	281.9	44.2	48.5	46.4	0.0	0.0	Yes
13	BDS	57.3	218.8	45.9	47.6	46.8	0.0	0.0	Yes
16	BDS	64.9	320.5	46.7	48.4	43.5	0.0	0.0	Yes
20	BDS	49.1	323.0	49.6	0.0	50.4	47.0	48.1	Yes
23	BDS	39.5	44.0	48.1	0.0	50.9	45.6	46.8	Yes

2.4.4 Configuring the Working Mode

- Choose **Receiver Config > Reference Station**. Under **Work Mode**, set **Mode** to **Base over known point**.
- 1. If the reference station position is unknown,
 - Click **Obtain Current Position**, set the **Sampled Points** to a positive integer in the range of 1 to 10,000 (60 by default), and then click **OK**. After the sampling is complete, click **Save**.

The screenshot shows the FJD Trion GNSS software interface with the 'Reference Station' configuration screen. The 'Station Information' section includes fields for Station Name (test), Station Number (1910ZC), and Station Owner. The 'Work Mode' section shows 'Mode' set to 'Base over known point', 'Latitude' (32.01871352), 'Longitude' (118.76358114), and 'Height' (26.7089 m). The 'Sampled Points' field is set to 60. The 'Historical Coordinates' table shows three data points.

No.	UTC Time	Latitude	Longitude	Height
1	2023-10-16 03:18:44	32.01871352°N	118.76358114°E	26.7089m
2	2023-10-16 07:34:19	32.01881325°N	118.76361721°E	43.8992m
3	2023-10-12 08:04:11	32.01871128°N	118.76358880°E	26.2841m

2. If the reference station position is known,

- Enter the latitude, longitude, and height, select **N** or **S**, select **E** or **W**, and then click **Save**.

Reference Station

Station Information

*Station Name: test

*Station Number: 1910ZC

Station Owner:

Save

Work Mode

*Mode: Base over known point

*Latitude: 32.01871352

*Longitude: 118.76358114

*Height: 26.7089 m

Save Obtain Current Position

Historical Coordinates

No.	UTC Time	Latitude	Longitude	Height
1	2023-10-18 03:18:44	32.01871352°N	118.76358114°E	26.7089m
2	2023-10-16 07:34:19	32.01881325°N	118.76361721°E	43.8992m
3	2023-10-12 08:04:11	32.01871128°N	118.76358686°E	26.2841m

2.4.5 Configuring Ntrip

- Choose **I/O Config > Data Transmission**, find **TCP Client/Ntrip Server 1** (or any of the other three TCP Client/Ntrip Server links) in the list, and click **Connect** on the right. On the pop-up, set **Protocol** to **NTRIP** and **Auto Connect** to **Yes**, enter the Ntrip information provided by the FAE, including the server IP address, port, username, password, and mountpoint. Under **RTCM3.2**, set **1006** and **1033** to **10s**, **1074**, **1084**, **1094**, and **1124** to **1s**, **Ephemeris** to **60s**, and other settings to **Off**, and then click **OK**.

Data Transmission

No.	Type	Summary	Output	Connection Status	Action
1	RTK Client	127.0.0.1:8888		Disconnected	Connect Details
2	TCP Client/Ntrip Server 1	104.65.62.129:80125		Connected	Disconnect Details
3	TCP Client/Ntrip Server 2	104.65.62.129:80125		Connected	Disconnect Details
4	TCP Client/Ntrip Server 3	101.42.129.138:60121		Disconnected	Connect Details
5	TCP Client/Ntrip Server 4	127.0.0.1:8888		Disconnected	Connect Details
6	Serial Port(COM1)	115200		---	Set
7	Serial Port(COM2)	115200		---	Set

TCP Client/Ntrip Server 4

*Protocol: NTRIP

*Auto Connect: Yes No

*Server IP Address:

*Port:

*Username:

*Password:

*Mountpoint:

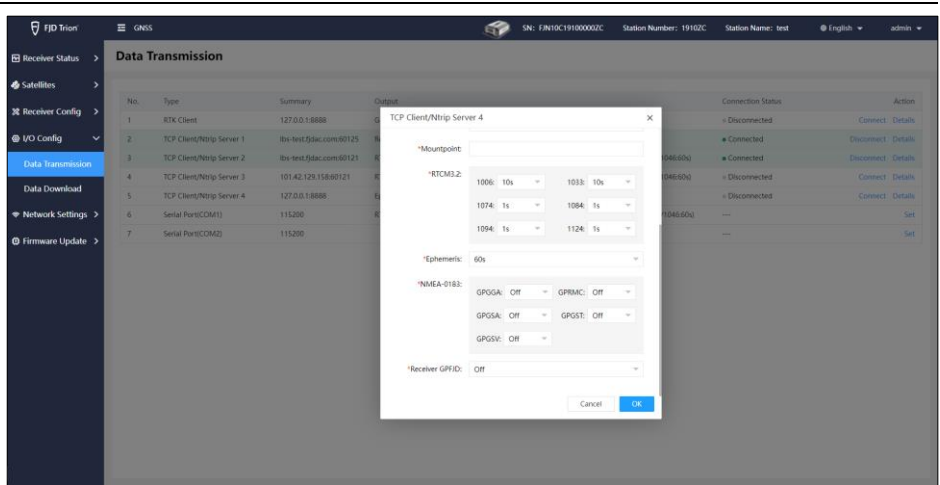
*RTCM3.2:

1006: 10s 1033: 10s

1074: 1s 1084: 1s

1094: 1s 1124: 1s

Cancel OK



- After the above operations are complete, the FAE will inform you whether the receiver configuration is successful.

3 Web Interface

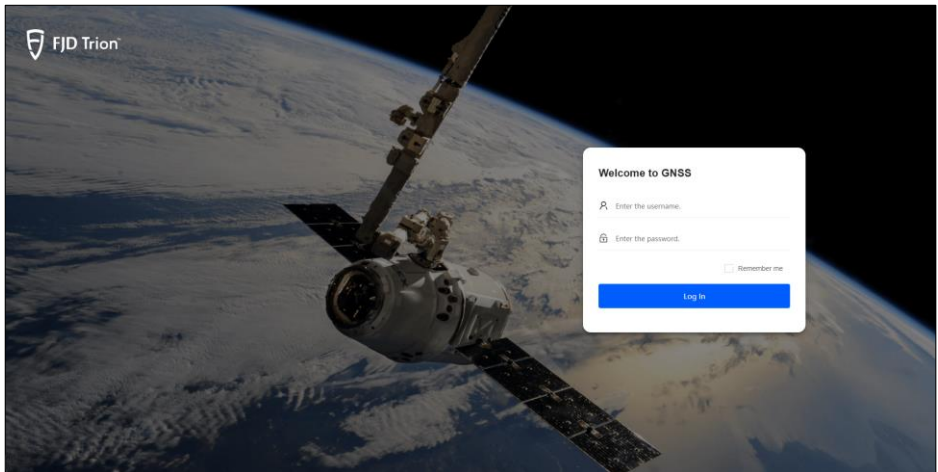
You can access the web interface of the N10 receiver through wired LAN and Wi-Fi.

Method 1: wired LAN

Check and set the receiver IP address on the front panel. Use the network cable to connect the Ethernet port of the receiver (via the network cable adapter) to the network port of the PC. Open a browser on your PC, and enter the receiver IP address in the address bar. Ensure that the IP addresses of the PC and the receiver are on the same subnet.

Method 2: Wi-Fi (recommended)

Enable Wi-Fi on the PC, find the receiver Wi-Fi "FJN10SN", and enter the password "123456789" to connect to it. Open a browser and enter 192.168.200.1 in the address bar.



Enter the username "admin" and the password "123456". By checking **Remember me**, you can log in automatically the next time you enter the right IP address in the browser address bar. Click **Log In** to access the web interface of the N10 receiver. The interface consists of six modules: **Receiver Status**, **Satellites**, **Receiver Config**, **I/O Config**, **Network Settings**, and **Firmware Update**.

FJD Trion

GNSS

SN: FJN10C19100000ZC

Station Number: 1910ZC

Station Name: test

English

admin

Receiver Status

Positioning

General

Satellites

Receiver Config

U/I Config

Network Settings

Firmware Update

Position

Latitude: 32.01871352°(N)

Longitude: 118.76358114°(E)

Height: 26.7089(m)

Type: Reference Station

Coordinate System: WGS84

Satellites Used: 33

GPS(6): 10,12,23,25,28,32

BDS(14): 1,3,6,8,9,13,16,20,23,32,37,38,39,59

GLONASS(6): 38,39,45,48,49,50

Galileo(4): 2,3,6,25

QZSS(3): 194,196,199

Satellites Tracked: 42

GPS(7): 10,12,23,25,28,31,32

BDS(20): 1,2,3,4,5,6,8,9,13,16,20,23,32,37,38,39,41,46,58,60

GLONASS(6): 38,39,45,48,49,50

Galileo(6): 2,3,6,13,25,30

QZSS(3): 194,196,199

DOP

PDOP: 0.7162

HDOP: 3.2851

VDOP: 1.9000

TDOP: 5.0000

Receiver Clock

GPS Week: 2284

GPS Seconds: 281711

Standard Deviations 1σ

Latitude: 0.0000(m)

Longitude: 0.0000(m)

Height: 0.0000(m)

3.1 Receiver Status

This module consists of two parts: **Positioning** and **General**.

3.1.1 Positioning

This part shows the satellite data received by the receiver.

- **Position:** position of the receiver antenna and receiver work mode.
- **Satellites Used:** number of satellites used by the receiver.
- **Satellites Tracked:** number of satellites tracked by the receiver.
- **DOP:** DOP values of the receiver position.
- **Receiver Clock:** GPS time of the receiver.
- **Standard Deviation 1σ:** receiver position errors.

FJD Trion

GNSS

SN: FJN10C19100000ZC

Station Number: 1910ZC

Station Name: test

English

admin

Receiver Status

Positioning

General

Satellites

Receiver Config

I/O Config

Network Settings

Firmware Update

Positioning

Position

Latitude: 32.01871352°(N)

Longitude: 118.76358114°(E)

Height: 26.7089(m)

Type: Reference Station

Coordinate System: WGS84

Satellites Used: 33

GPS(6): 10,12,23,25,28,32

BDS(14): 1,3,6,8,9,13,16,20,23,32,37,38,39,59

GLONASS(6): 38,39,45,48,49,50

Galileo(4): 2,3,6,25

QZSS(3): 194,196,199

Satellites Tracked: 42

GPS(7): 10,12,23,25,28,31,32

BDS(20): 1,2,3,4,5,6,8,9,13,16,20,23,32,37,38,39,41,46,58,60

GLONASS(6): 38,39,45,48,49,50

Galileo(6): 2,3,6,13,25,30

QZSS(3): 194,196,199

DOP

PDOP: 0.7162

HDOP: 3.2851

VDOP: 1.9000

TDOP: 5.0000

Receiver Clock

GPS Week: 2284

GPS Seconds: 281711

Standard Deviations 1σ

Latitude: 0.0000(m)

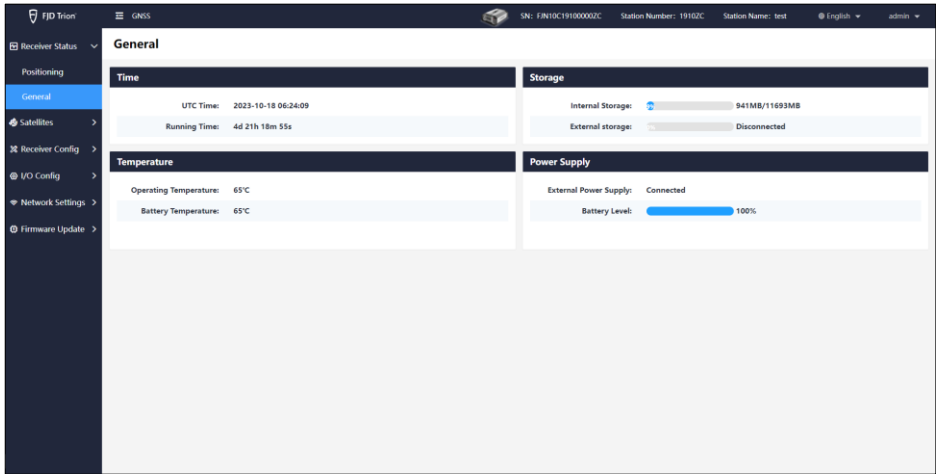
Longitude: 0.0000(m)

Height: 0.0000(m)

3.1.2 General

This part shows the general receiver information.

- **Time:** UTC time and total running time of the receiver.
- **Storage:** internal and external storage capacities of the receiver.
- **Temperature:** operating temperature and battery temperature of the receiver.
- **Power Supply:** power supply of the receiver, including the external power supply status, battery level, and remaining battery time.



3.2 Satellites

This part shows the satellite tracking status of the receiver in the form of table, graph, and skyplot.

3.2.1 Tracking (Table)

The **Tracking (Table)** page shows the details of satellites from five constellations, namely GPS, BDS, GLONASS, Galileo, and QZSS, tracked by the receiver in a table, including the satellite number, elevation angle, azimuth angle, and signal to noise ratio (SNR).

FJD Trion

GNSS

SN: FJN10C19100000ZC

Station Number: 1910ZC

Station Name: test

English

admin

Receiver Status

Satellites

Tracking (Table)

Tracking (Graph)

Tracking (Skyplot)

Receiver Config

I/O Config

Network Settings

Firmware Update

Settings

All

GPS(G)

BDS(B)

GLONASS(G)

Galileo(E)

QZSS(J)

No.	Type	Elevation (°)	Azimuth (°)	L1/E1 SNR	L2/E2/E5a SNR	L5/E5/E5b SNR	BTIC SNR	B2a SNR	Used
10	GPS	72.6	209.7	50.4	47.7	49.9	0.0	0.0	Yes
12	GPS	35.6	57.6	42.9	43.9	0.0	0.0	0.0	Yes
23	GPS	38.3	163.5	43.2	39.8	43.0	0.0	0.0	Yes
25	GPS	60.4	111.6	46.5	46.0	48.2	0.0	0.0	Yes
28	GPS	44.8	263.4	45.5	41.2	46.3	0.0	0.0	Yes
31	GPS	20.3	247.7	40.8	36.0	0.0	0.0	0.0	No
32	GPS	54.9	334.1	48.5	46.9	48.5	0.0	0.0	Yes
1	BDS	43.3	138.0	44.2	43.2	39.0	0.0	0.0	Yes
2	BDS	38.6	234.3	40.7	44.5	41.4	0.0	0.0	Yes
3	BDS	52.5	195.6	43.8	45.0	43.1	0.0	0.0	Yes
4	BDS	31.7	121.7	39.3	44.0	41.3	0.0	0.0	No
5	BDS	17.7	254.6	36.3	39.3	38.8	0.0	0.0	No
6	BDS	60.4	301.9	46.9	48.0	47.0	0.0	0.0	Yes
8	BDS	49.8	200.2	41.9	46.2	42.8	0.0	0.0	Yes
9	BDS	52.6	284.0	44.2	49.0	46.6	0.0	0.0	Yes
13	BDS	55.5	218.6	45.0	47.1	46.3	0.0	0.0	Yes
16	BDS	64.5	322.8	47.8	48.8	43.7	0.0	0.0	Yes
20	BDS	51.8	323.3	50.4	0.0	50.8	47.6	48.2	Yes
23	BDS	37.0	43.6	47.3	0.0	46.9	44.5	49.0	Yes

Select or deselect check boxes to show or hide the satellite system data.

FJD Trion

GNSS

SN: FJN10C19100000ZC

Station Number: 1910ZC

Station Name: test

English

admin

Receiver Status

Satellites

Tracking (Table)

Tracking (Graph)

Tracking (Skyplot)

Receiver Config

I/O Config

Network Settings

Firmware Update

Settings

All

GPS(G)

BDS(B)

GLONASS(G)

Galileo(E)

QZSS(J)

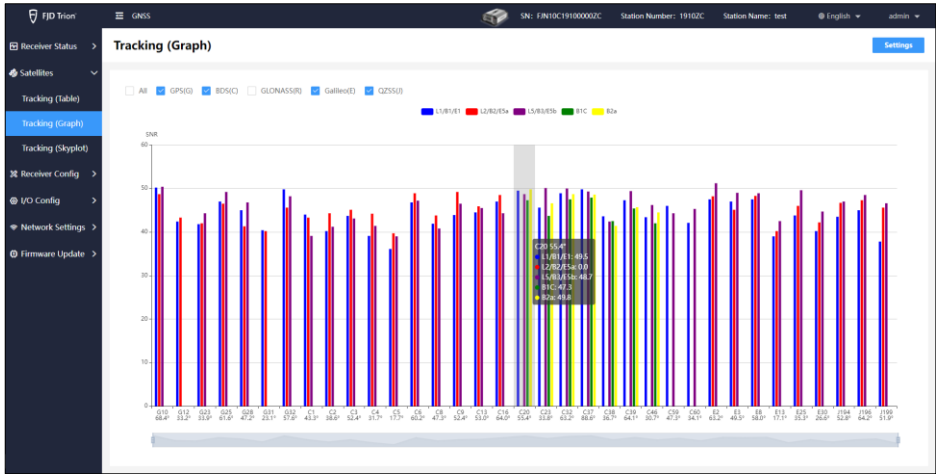
No.	Type	Elevation (°)	Azimuth (°)	L1/E1 SNR	L2/E2/E5a SNR	L5/E5/E5b SNR	BTIC SNR	B2a SNR	Used
1	BDS	43.3	138.0	44.1	43.0	39.0	0.0	0.0	Yes
2	BDS	38.6	234.3	40.4	44.3	41.4	0.0	0.0	Yes
3	BDS	52.5	195.6	43.6	44.8	42.2	0.0	0.0	Yes
4	BDS	31.7	121.7	39.0	43.7	41.3	0.0	0.0	No
5	BDS	17.7	254.6	36.2	39.2	38.8	0.0	0.0	No
6	BDS	60.4	302.1	46.6	47.7	47.0	0.0	0.0	Yes
8	BDS	49.7	200.2	41.5	45.9	42.9	0.0	0.0	Yes
9	BDS	52.6	284.2	44.0	48.8	46.7	0.0	0.0	Yes
13	BDS	55.4	218.6	44.8	46.8	46.4	0.0	0.0	Yes
16	BDS	64.4	322.9	47.5	48.5	43.9	0.0	0.0	Yes
20	BDS	51.9	323.3	50.2	0.0	50.8	47.1	48.0	Yes
23	BDS	36.9	43.6	47.2	0.0	46.7	44.3	48.5	Yes
32	BDS	66.2	118.0	49.3	0.0	50.0	47.3	49.0	Yes
37	BDS	86.2	218.5	50.0	0.0	49.2	47.8	48.6	Yes
38	BDS	38.8	187.9	44.7	0.0	42.5	41.9	41.8	Yes
39	BDS	64.6	341.1	47.5	0.0	48.5	44.6	46.0	Yes
46	BDS	27.7	222.7	43.0	0.0	46.2	40.9	43.9	No
59	BDS	47.3	142.7	46.0	0.0	44.4	0.0	0.0	Yes
60	BDS	34.2	236.5	41.6	0.0	45.1	0.0	0.0	No

3.2.2 Tracking (Graph)

The **Tracking (Graph)** page shows the details of the satellites tracked by the receiver in a bar graph. When your cursor points at a point on the bar graph, the system shows the SNR of a satellite tracked by the receiver.



Select or deselect check boxes to show or hide the satellite system data.

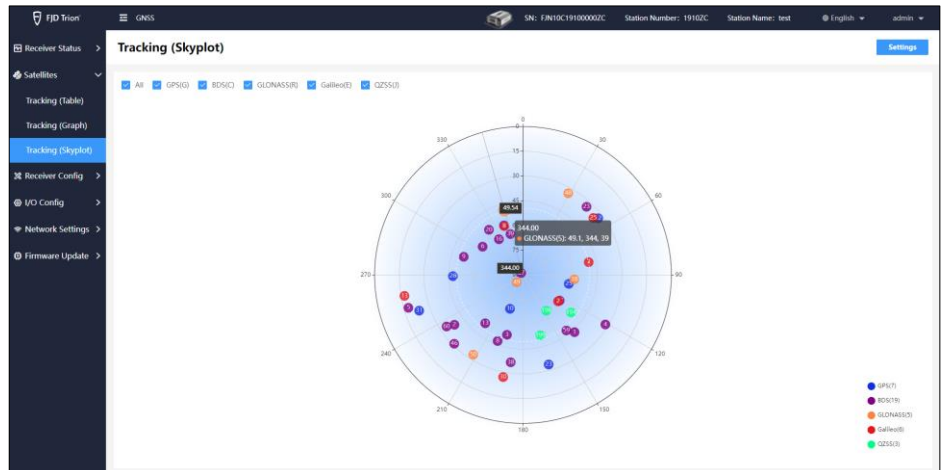


Use the bottom slider to zoom in or out on the bar graph.

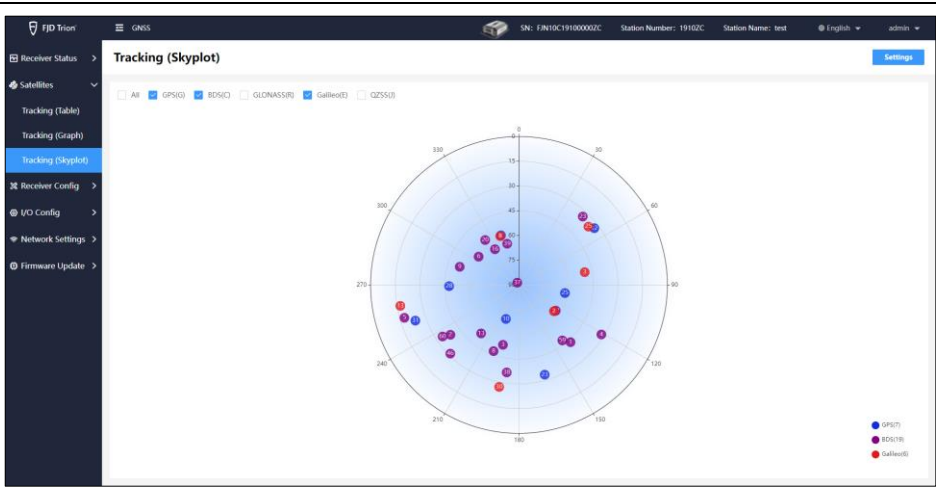


3.2.3 Tracking (Skyplot)

The **Tracking (Skyplot)** page shows the details of the satellites tracked by the receiver in a skyplot. When your cursor points at a point on the skyplot, the system shows the number of satellites tracked, azimuth angle, elevation angle, and SNR.

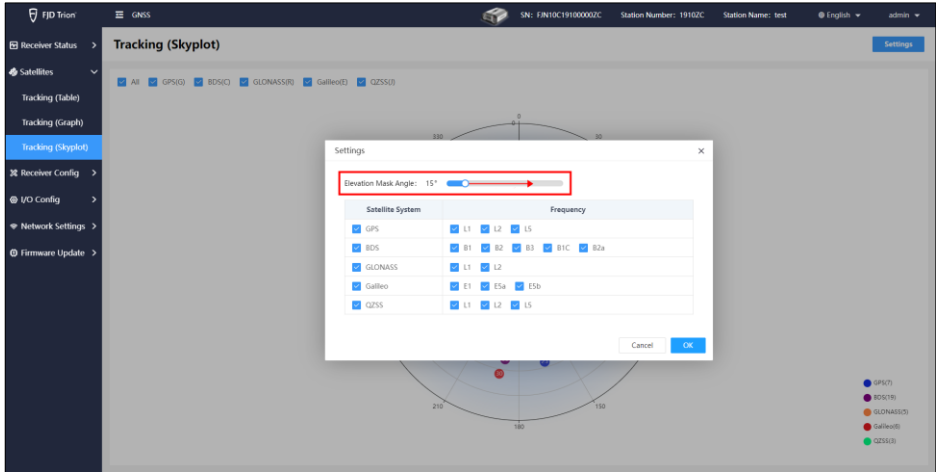


Select or deselect check boxes to show or hide the satellite system data.

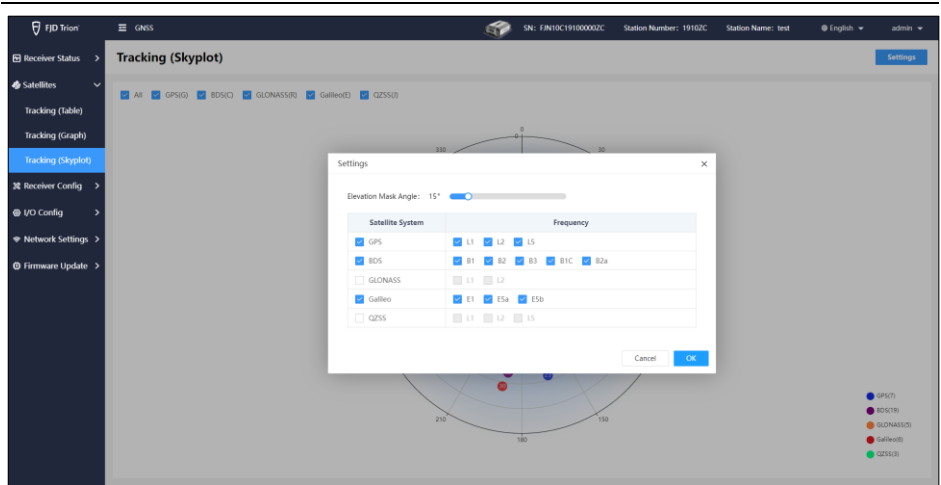


3.2.4 Settings

Click **Settings** to set the elevation mask angle, satellite system, and frequency information of satellites tracked by the receiver. You can adjust the elevation mask angle in the range of 0°–90° by the slider. The default angle is 5°.



Select or deselect the satellite system and frequency band check boxes to set frequencies of satellites tracked by the receiver.



3.3 Receiver Config

This module allows for working mode configuration and operation management of the receiver.

3.3.1 Reference Station

Set the receiver to work as a reference station or a rover. No modification is required to the default station information.

1. Set the reference station mode
 - **Mode:** Select **Base over known point**.
 - **Latitude** and **Longitude:** Enter a positive value with 8 decimal places, select **N** or **S**, and then select **E** or **W**.
 - **Height:** Enter the geodetic height with 4 decimal places.

Ensure that all above data is correct, and click **Save**. The reference station mode is enabled immediately.

FJD Trion

GNSS

SN: FJN10C19100002C

Station Number: 19102C

Station Name: test

English

admin

Receiver Status

Satellites

Receiver Config

Reference Station

Reset

Users

Logs

Others

I/O Config

Network Settings

Firmware Update

Reference Station

Station Information

*Station Name: test

*Station Number: 19102C

Station Owner:

Save

Work Mode

*Mode: Base over known point

*Latitude: 32.01871352

N

S

*Longitude: 118.76358114

E

W

*Height: 26.7089

m

Save

Obtain Current Position

Historical Coordinates

No.	UTC Time	Latitude	Longitude	Height
1	2023-10-18 03:18:44	32.01871352°N	118.76358114°E	26.7089m
2	2023-10-16 07:34:19	32.01881325°N	118.76361721°E	43.8992m
3	2023-10-12 08:04:11	32.01871128°N	118.76358686°E	26.2841m

If the current receiver position is unknown, click **Obtain Current Position**, and set **Sampled Points** to a positive integer in the range of 1 to 10,000 (60 by default). The sampling frequency is once per second.

FJD Trion

GNSS

SN: FJN10C19100002C

Station Number: 19102C

Station Name: test

English

admin

Receiver Status

Satellites

Receiver Config

Reference Station

Reset

Users

Logs

Others

I/O Config

Network Settings

Firmware Update

Reference Station

Station Information

*Station Name: test

*Station Number: 19102C

Station Owner:

Save

Work Mode

*Mode: Base over known point

*Latitude: 32.01871352

N

S

*Longitude: 118.76358114

E

W

*Height: 26.7089

m

Save

Obtain Current Position

Sampled Points: 60

OK

Cancel

Historical Coordinates

No.	UTC Time	Latitude	Longitude	Height
1	2023-10-18 03:18:44	32.01871352°N	118.76358114°E	26.7089m
2	2023-10-16 07:34:19	32.01881325°N	118.76361721°E	43.8992m
3	2023-10-12 08:04:11	32.01871128°N	118.76358686°E	26.2841m

Click **OK**. When the sampling is complete, the system automatically enters the latitude, longitude, and height values.

Reference Station

Station Information

*Station Name: test

*Station Number: 1910ZC

Station Owner:

Work Mode

*Mode: Base over known point

*Latitude: 32.01871352

*Longitude: 118.76358114

*Height: 26.7089 m

Historical Coordinates

No.	UTC Time	Latitude	Longitude	Height
1	2023-10-18 03:18:44	32.01871352°N	118.76358114°E	26.7089m
2	2023-10-16 07:34:19	32.01881325°N	118.76361721°E	43.8992m
3	2023-10-12 08:04:11	32.01871128°N	118.76358686°E	26.2841m

Click **Save**. The reference station mode is set.

Reference Station

Station Information

*Station Name: test

*Station Number: 1910ZC

Station Owner:

Work Mode

*Mode: Rover

*Latitude: 32.01874569

*Longitude: 118.76359783

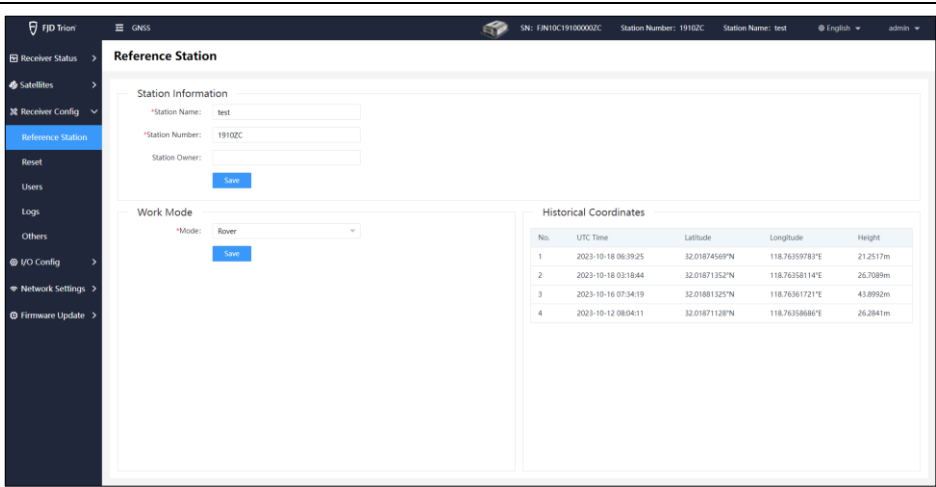
*Height: 21.2517 m

Historical Coordinates

No.	UTC Time	Latitude	Longitude	Height
1	2023-10-18 06:39:25	32.01874569°N	118.76359783°E	21.2517m
2	2023-10-18 03:18:44	32.01871352°N	118.76358114°E	26.7089m
3	2023-10-16 07:34:19	32.01881325°N	118.76361721°E	43.8992m
4	2023-10-12 08:04:11	32.01871128°N	118.76358686°E	26.2841m

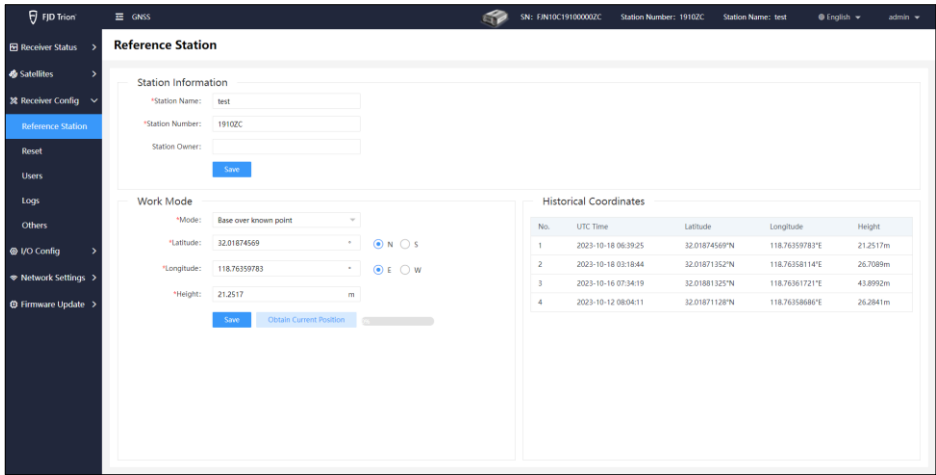
2. Set the rover mode

Set **Mode** to **Rover**, and click **Save**. The rover mode is set.



3. Historical Coordinates

The historical latitudes, longitudes, and heights of the receiver recorded in the reference station mode are shown for future reference.

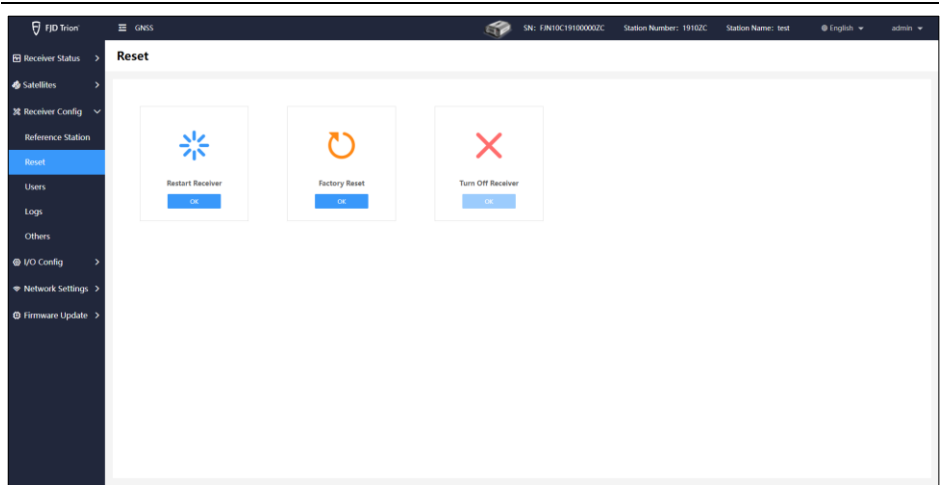


3.3.2 Reset

Restart, factory reset, or turn off the receiver here.



Note: You cannot turn off the receiver here if an external power supply is used.

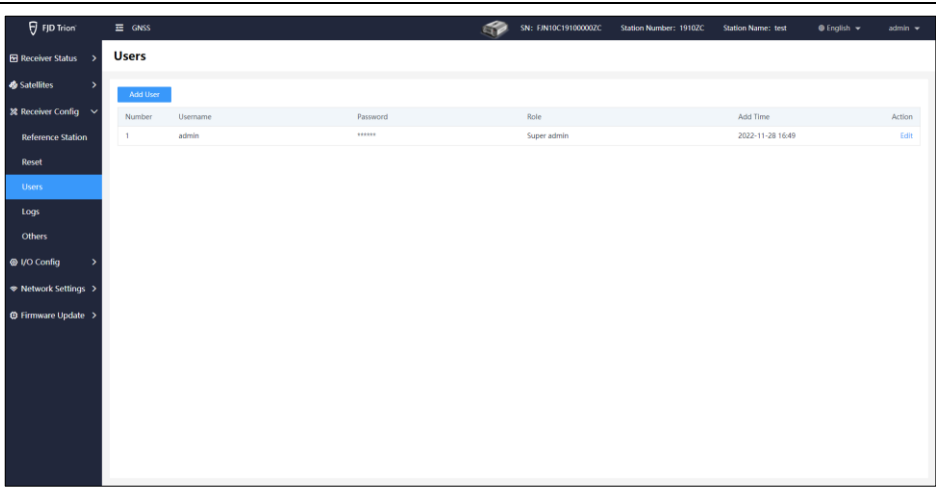


The following changes occur on the web interface after a factory reset.

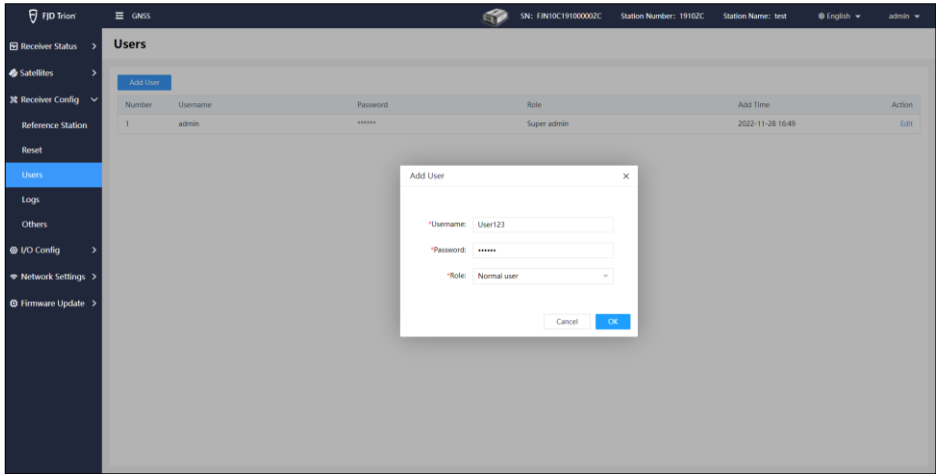
1. Under **Receiver Status** and **Satellites**, all GNSS data fields (such as satellite type, satellite number, azimuth angle, elevation angle, and SNR) are empty. The elevation mask angle becomes 5° on the **Settings** screen.
2. On the **Reference Station** screen, under **Work Mode**, the latitude, longitude, and height values become zero while other data remains unchanged, when **Mode** is set to **Base over known point**. No changes are made when **Mode** is set to **Rover**.
3. On the **Others** screen, interface settings are off while other data remains unchanged.
4. In **I/O Config > Data Transmission**, the RTK Client and TCP Client/Ntrip Servers are disconnected, and other data (**Summary** and **Output**) remains unchanged; the serial port (COM1) mode is set to data record and the serial port (COM2) output is empty. Data download is still available.

3.3.3 Users

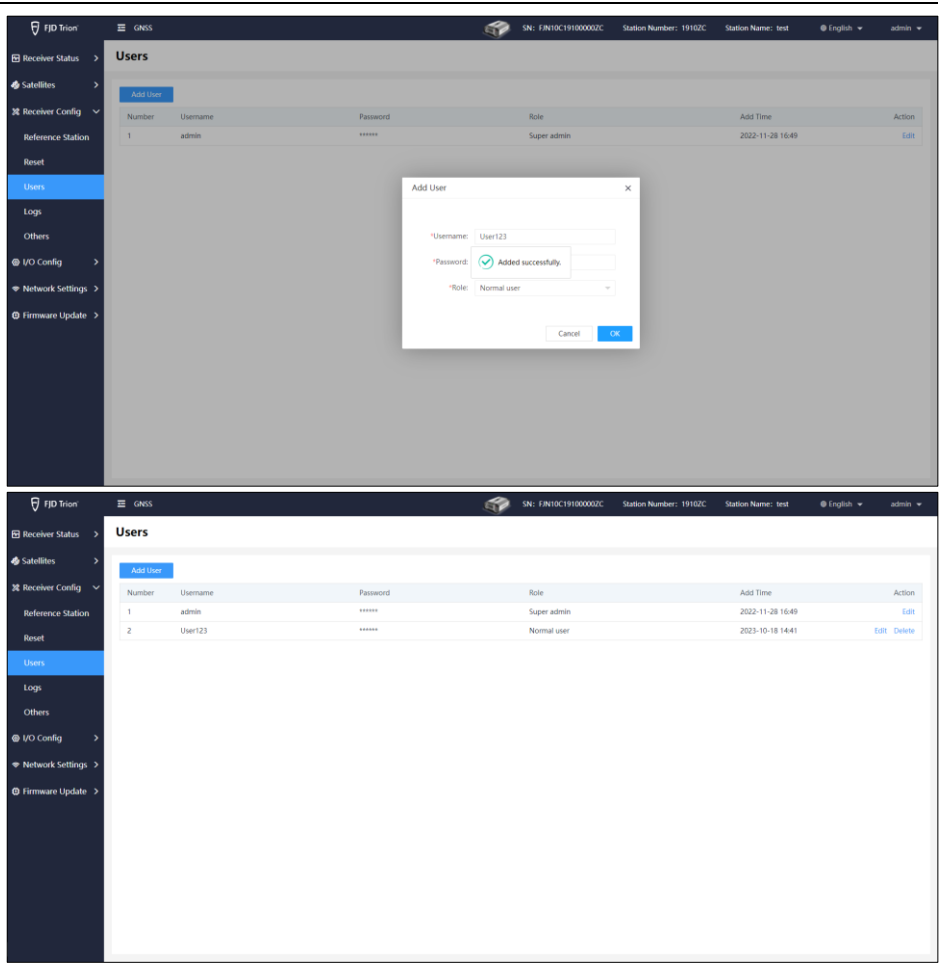
Users can be assigned different access to the receiver here.



Click **Add User**, enter the username and password, and then select a role.



Click **OK** to add the user.



Note: The username and password must contain at least 5 and 6 characters respectively.

Add User

Username: FJD1

The username must contain at least 5 characters.

Role: Normal user

Cancel OK

Add User

Username: admin

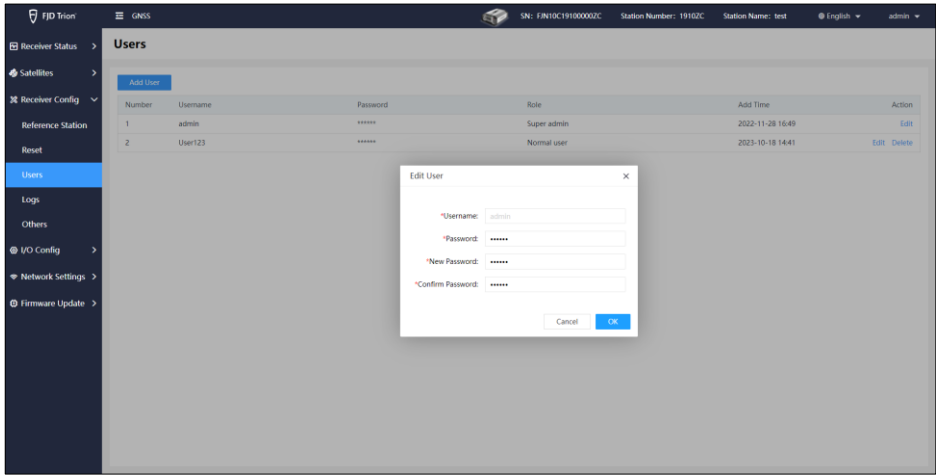
The password must contain at least 6 characters.

Role: Select here.

Cancel OK

Super admin:

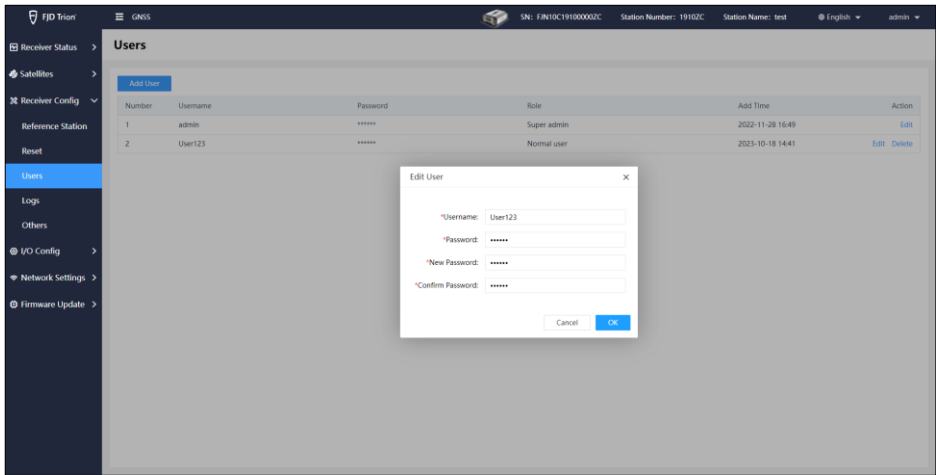
Click **Edit** to change the password.



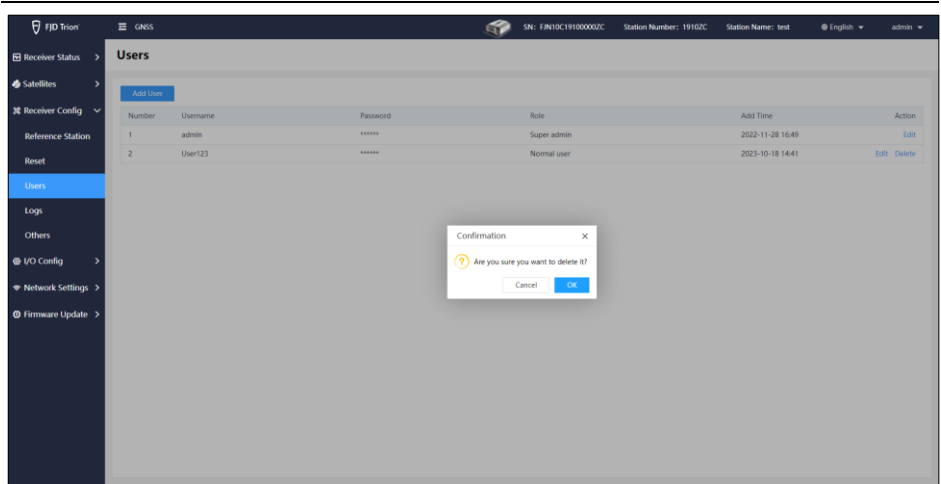
! Note: The super admin user cannot be deleted.

Normal user:

Click **Edit** to change the username and password.

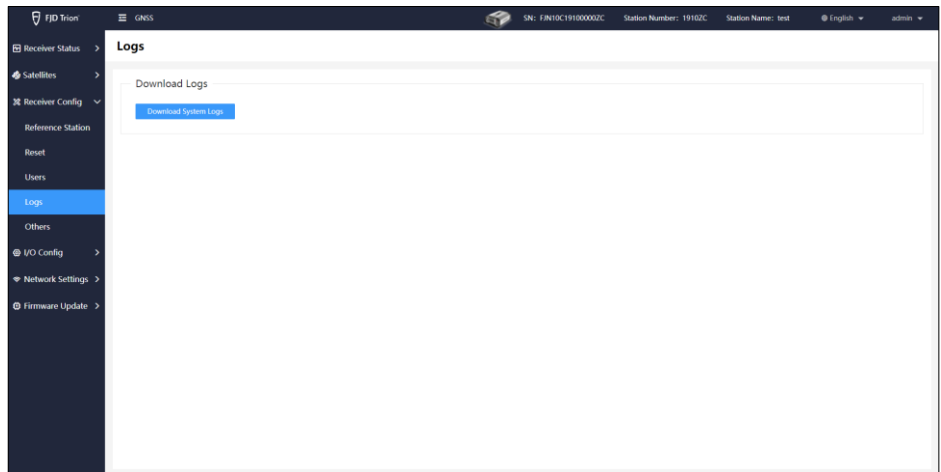


Click **Delete**, and click **OK** or **Cancel** on the pop-up.



3.3.4 Logs

This feature records the running status of the receiver. Click **Download System Logs**, and specify the storage path. The system automatically downloads logs.



3.3.5 Others

Set the receiver Wi-Fi under **Wi-Fi**.

- **Wi-Fi Status:** Select **Enabled** or **Disabled**. The default status is **Enabled**.
- **Auto Start:** Retain the default setting (**Yes**) if you want Wi-Fi to be turned on automatically the next time the receiver is powered on.
- **Wi-Fi Name:** receiver SN by default, which cannot be changed.
- **Password:** 123456789 by default, which can be changed.

When **Wi-Fi Status** is **Enabled**, set parameters and click **Save**.

Enable or disable external interfaces (**1 PPS Output** and **Event Input**) of the receiver under **Interface**, and click **Save**.

Set the external antenna connected to the receiver under **Antenna Configuration**.

- **Antenna Type, Manufacturer, and Antenna Number:** Enter information based on facts.
- **Measurement Method:** **Bottom of antenna mount (h)**, **Antenna phase center (H)**, or

Antenna slant height (H').

- **Antenna Height:** Enter the value measured with one of the above methods.
- **Height Anomaly Correction:** **Auto** by default. You can change the setting to any value with up to 4 decimal places.

Click **Save**.

Antenna Configuration

Antenna Type:

Manufacturer:

Antenna Number:

Measurement Method:

Antenna phase center (H)

Antenna Height:

Bottom of antenna mount (h)

Height Anomaly Correction:

Antenna phase center (H)

Antenna slant height (H')

Save

3.4 I/O Config

In this module, you can set data transmission and storage, and download data when the receiver works in the reference station or rover mode.

FJD Trion

GNSS

SN: F8N10C191000002C

Station Number: 19102C

Station Name: test

English

admin

Receiver Status

Satellites

Receiver Config

I/O Config

Data Transmission

Data Download

Network Settings

Firmware Update

Data Transmission

No.	Type	Summary	Output	Connection Status	Action
1	RTK Client	127.0.0.1:8888	GPGLGA: 1s	= Disconnected	Connect Details
2	TCP Client/Ntrip Server 1	lbs-test.fjdac.com:50125	Receiver GPXID: 1s	● Connected	Disconnect Details
3	TCP Client/Ntrip Server 2	lbs-test.fjdac.com:50121	RTCM3.2(1074/1084/1094/1124): 1006/1033:10d; Ephemeris(1019/1020/1042/1045/1046:60d)	● Connected	Disconnect Details
4	TCP Client/Ntrip Server 3	101.42.129.158:60121	RTCM3.2(1074/1084/1094/1124): 1006/1033:10d; Ephemeris(1019/1020/1042/1045/1046:60d)	= Disconnected	Connect Details
5	TCP Client/Ntrip Server 4	127.0.0.1:8888	Ephemeris(1019/1020/1042/1045/1046:60d)	= Disconnected	Connect Details
6	Serial Port(COM1)	115200	RTCM3.2(1074/1084/1094/1124): 1006/1033:10d; Ephemeris(1019/1020/1042/1045/1046:60d)	---	Set
7	Serial Port(COM2)	115200		---	Set

3.4.1 RTK Client

This feature is available when the receiver is in rover mode.

The protocol is NTRIP by default. Enter the server IP address, port, mountpoint, username, and password based on your account information, and click **OK**. The settings take effect immediately.

The screenshot shows the 'RTK Client' configuration window. It contains the following fields and controls:

- *Protocol:** A dropdown menu currently set to 'NTRIP'.
- *Server IP Address:** An empty text input field.
- *Port:** An empty text input field.
- *Mountpoint:** A dropdown menu with a 'Get' button to its right.
- *Username:** An empty text input field.
- *Password:** An empty text input field.
- At the bottom right, there are 'Cancel' and 'OK' buttons.

3.4.2 TCP Client/Ntrip Server

This feature supports synchronous data transmission via four links. The available protocols are TCP and NTRIP.

1. Set Protocol to TCP.

The screenshot shows the 'Data Transmission' settings screen in the FJD Trion software. A dialog box for 'TCP Client/Ntrip Server 4' is open, showing the following configuration:

- *Protocol:** TCP
- *Auto Connect:** Yes (selected) or No
- *Server IP Address:** Empty text field
- *Port:** Empty text field
- *RTCM3.2:** A grid of dropdowns for different data streams:

1006: 10s	1033: 10s
1074: 1s	1084: 1s
1094: 1s	1124: 1s
- *Ephemeric:** 60s
- *NMEA-0183:**
 - GPGGA: Off
 - GPRMC: Off
 - GPGSA: Off
 - GPST: Off
- Buttons: Cancel and OK

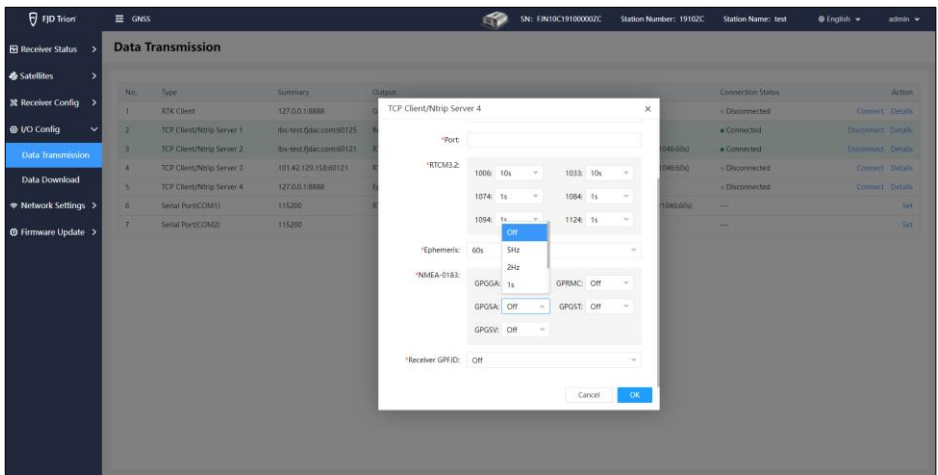
In the background, the 'Data Transmission' table is visible, listing various connections and their status.

- **Auto Connect:** Select **Yes** or **No**. If you select **Yes**, the link automatically connects to the

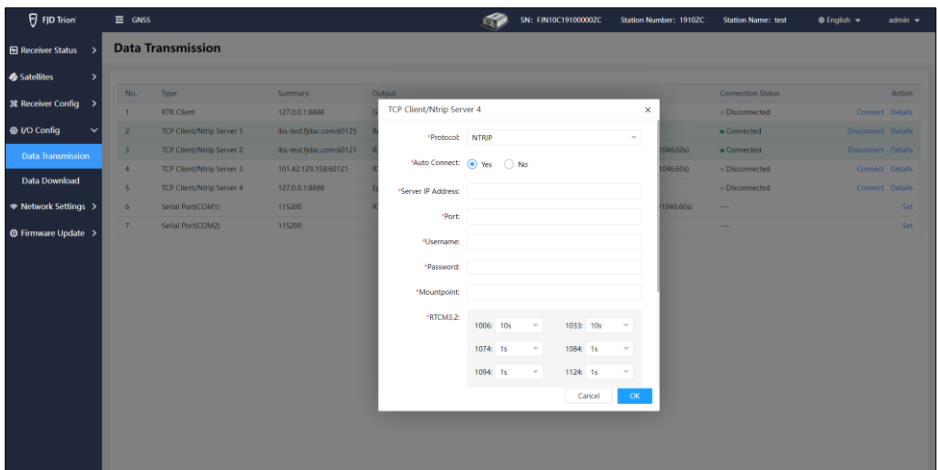
server the next time the receiver is powered on.

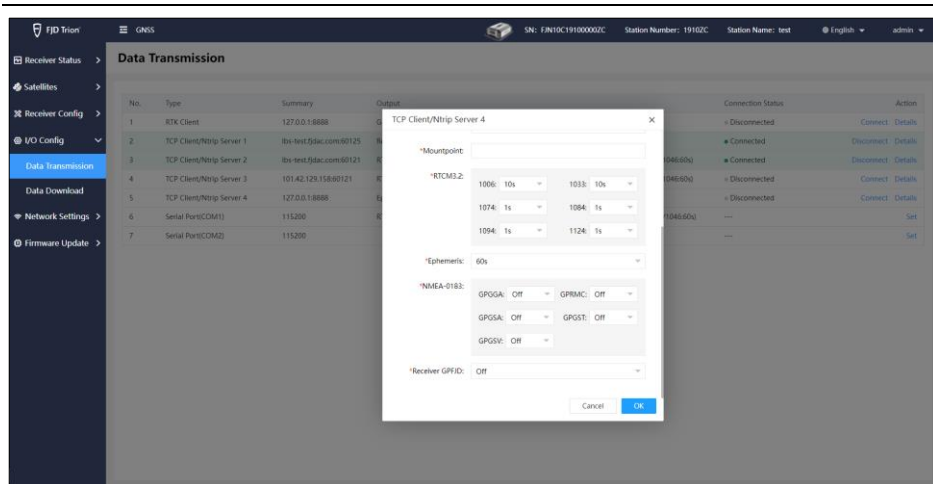
- Enter the server IP address and port as required.
- **RTCM3.2:** Set 1006 and 1033 to 10s or Off, and 1074, 1084, 1094, and 1124 to 1s, 2s, or Off.
- **Ephemeris:** Select 60s or Off.
- **NMEA-0183:** Set GPGGA, GPGSA, GPGST, GPGSV, and GPRMC to 5Hz, 2Hz, 1s, 2s, 5s, or Off.
- **Receiver GPFJD:** Select 1s, 2s, 5s, or Off.

Set the above parameters, and click **OK**. The settings take effect immediately.



2. Set Protocol to NTRIP.



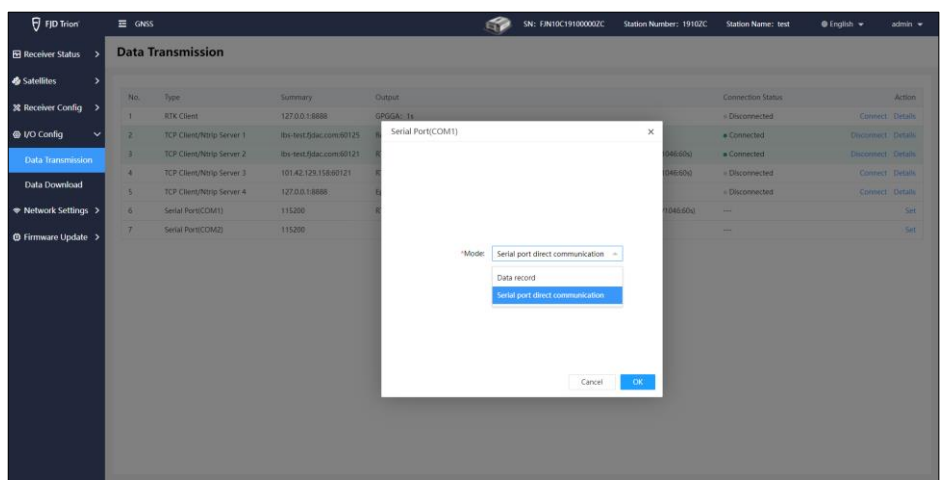


- **Auto Connect:** Select **Yes** or **No**.
- Enter the server IP address, port, username, password, and mountpoint based on the NTRIP CASTER configuration.
- **RTCM3.2:** Set 1006 and 1033 to 10s or Off, and 1074, 1084, 1094, and 1124 to 1s, 2s, or Off.
- **Ephemeris:** Select 60s or Off.
- **NMEA-0183:** Set GPGGA, GPGSA, GPGST, GPGSV, and GPRMC to 5Hz, 2Hz, 1s, 2s, 5s, or Off.
- **Receiver GPFJD:** Select 1s, 2s, 5s, or Off.

Set the above parameters, and click **OK**. The settings take effect immediately. Refer to section 2.4.5 for details.

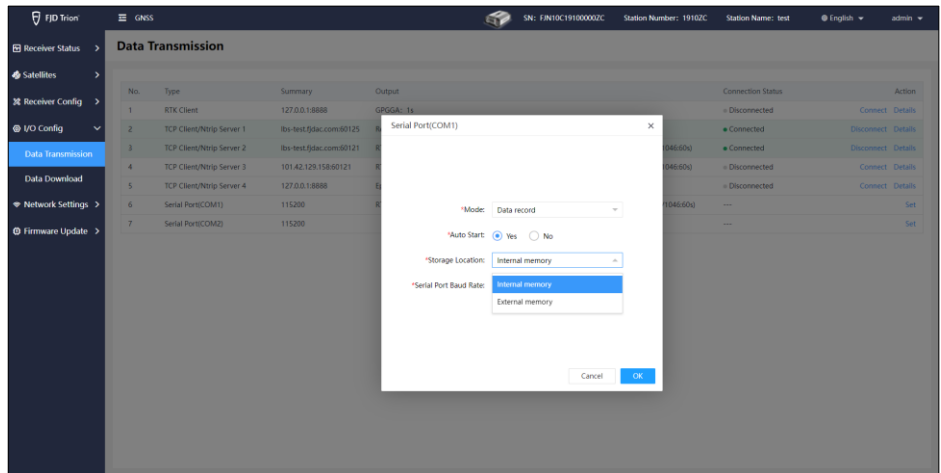
3.4.3 Serial Port (COM1)

Two modes, namely **Data record** and **Serial port direct communication**, are supported.



Mode 1: Data record

This mode allows recording the RTCM data of the receiver locally. Set **Storage Location** to **Internal memory** or **External memory**, retain the default value (**115200**) for **Serial Port Baud Rate**, and then click **OK**. The settings take effect immediately.



Data recorded is shown in the red box below.

FJD Trion

GNSS

SN: F810C191000002C

Station Number: 19102C

Station Name: test

English

admin

Receiver Status

Satellites

Receiver Config

I/O Config

Data Transmission

Data Download

Network Settings

Firmware Update

Data Transmission

No.	Type	Summary	Output	Connection Status	Action
1	RTK Client	127.0.0.1:8888	GPGGA: 1s	= Disconnected	Connect Details
2	TCP Client/Ntrip Server 1	lrs-test.fjdc.com:80125	Receiver GPYID: 1s	Connected	Disconnect Details
3	TCP Client/Ntrip Server 2	lrs-test.fjdc.com:80121	RTCM3.2(1074/1084/1094/1124:1s; 1006/1033:10s); Ephemeris(1019/1020/1042/1045/1046:60s)	Connected	Disconnect Details
4	TCP Client/Ntrip Server 3	101.42.129.158:80121	RTCM3.2(1074/1084/1094/1124:2s; 1006/1033:10s); Ephemeris(1019/1020/1042/1045/1046:60s)	= Disconnected	Connect Details
5	TCP Client/Ntrip Server 4	127.0.0.1:8888	Ephemeris(1019/1020/1042/1045/1046:60s)	= Disconnected	Connect Details
6	Serial Port(COM1)	115200	RTCM3.2(1074/1084/1094/1124:1s; 1006/1033:10s); Ephemeris(1019/1020/1042/1045/1046:60s)	---	Set
7	Serial Port(COM2)	115200		---	Set

Mode 2: Serial port direct communication

This mode allows for data exchange with the GNSS board through an RS232 cable connected to the COM1 port on the rear panel of the receiver. Set **Mode** to **Serial port direct communication**, and click **OK**.

FJD Trion

GNSS

SN: F810C191000002C

Station Number: 19102C

Station Name: test

English

admin

Receiver Status

Satellites

Receiver Config

I/O Config

Data Transmission

Data Download

Network Settings

Firmware Update

Data Transmission

No.	Type	Summary	Output	Connection Status	Action
1	RTK Client	127.0.0.1:8888	GPGGA: 1s	= Disconnected	Connect Details
2	TCP Client/Ntrip Server 1	lrs-test.fjdc.com:80125		Connected	Disconnect Details
3	TCP Client/Ntrip Server 2	lrs-test.fjdc.com:80121		Connected	Disconnect Details
4	TCP Client/Ntrip Server 3	101.42.129.158:80121		= Disconnected	Connect Details
5	TCP Client/Ntrip Server 4	127.0.0.1:8888		= Disconnected	Connect Details
6	Serial Port(COM1)	115200		---	Set
7	Serial Port(COM2)	115200		---	Set

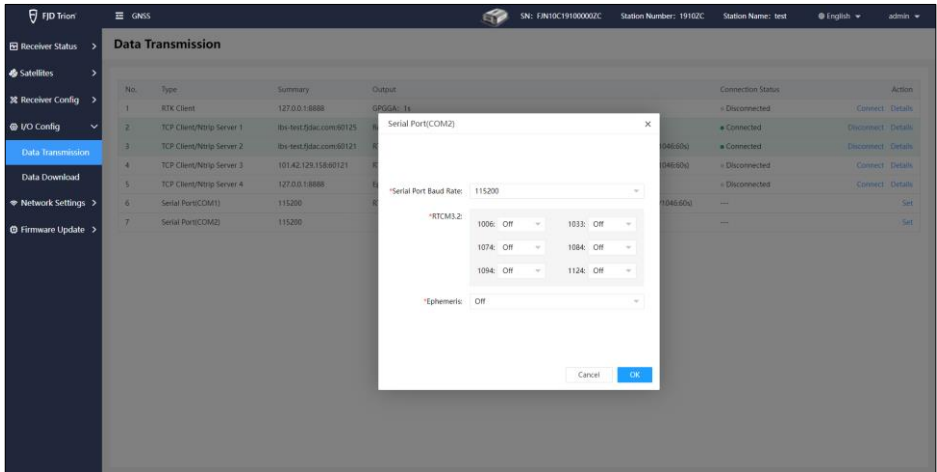
Serial Port(COM1)

*Mode: Serial port direct communication

Cancel

OK

3.4.4 Serial Port (COM2)

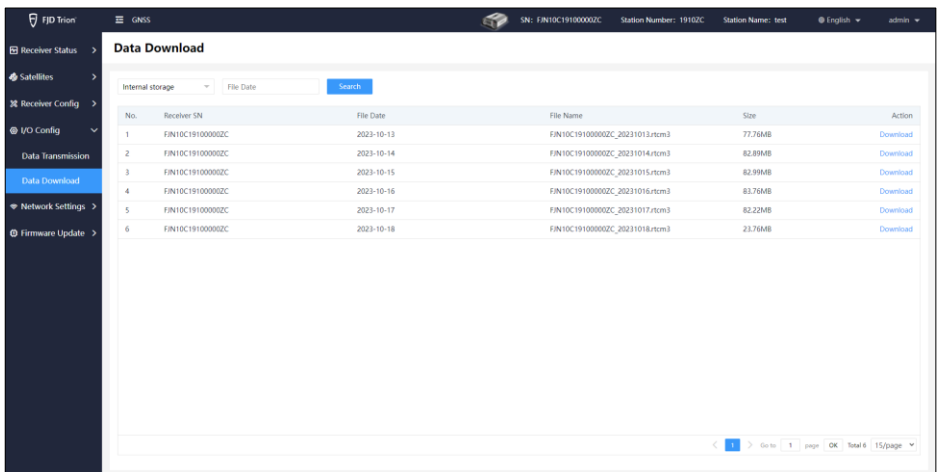


- **Serial Port Baud Rate:** Select 9600, 19200, 38400, 57600, or 115200.
- **RTCM3.2:** Set 1006 and 1033 to 10s or Off, and 1074, 1084, 1094, and 1124 to 1s, 2s, or Off.
- **Ephemeris:** Select 60s or Off.

Set the above parameters, and click **OK**. The settings take effect immediately.

3.4.5 Data Download

After the serial port (COM1) is set to data record mode, RTCM data stored can be downloaded here.



Select **Internal storage** or **External storage**, and set the time range. Data stored in the last 30 days can be downloaded.

Data Download

Internal storage: [Internal storage] File Date: [] Search

No.	Receiver SN	File Date	File Name	Size	Action
1	FJN10C19100000ZC	2023-10-13	FJN10C19100000ZC_20231013.rtc.m3	77.76MB	Download
2	FJN10C19100000ZC	2023-10-14	FJN10C19100000ZC_20231014.rtc.m3	82.89MB	Download
3	FJN10C19100000ZC	2023-10-15	FJN10C19100000ZC_20231015.rtc.m3	82.99MB	Download
4	FJN10C19100000ZC	2023-10-16	FJN10C19100000ZC_20231016.rtc.m3	83.76MB	Download
5	FJN10C19100000ZC	2023-10-17	FJN10C19100000ZC_20231017.rtc.m3	82.22MB	Download
6	FJN10C19100000ZC	2023-10-18	FJN10C19100000ZC_20231018.rtc.m3	23.76MB	Download

Data Download

Internal storage: [Internal storage] File Date: [] Search

No.	Receiver SN	File Date	File Name	Size	Action
1	FJN10C19100000ZC	2023-10-13	FJN10C19100000ZC_20231013.rtc.m3	77.76MB	Download
2	FJN10C19100000ZC	2023-10-14	FJN10C19100000ZC_20231014.rtc.m3	82.89MB	Download
3	FJN10C19100000ZC	2023-10-15	FJN10C19100000ZC_20231015.rtc.m3	82.99MB	Download
4	FJN10C19100000ZC	2023-10-16	FJN10C19100000ZC_20231016.rtc.m3	83.76MB	Download
5	FJN10C19100000ZC	2023-10-17	FJN10C19100000ZC_20231017.rtc.m3	82.22MB	Download
6	FJN10C19100000ZC	2023-10-18	FJN10C19100000ZC_20231018.rtc.m3	23.76MB	Download

Find the required data file, click **Download**, and then click **OK**. The system downloads the file automatically.

Data Download

Internal storage: [Internal storage] File Date: [] Search

No.	Receiver SN	File Date	File Name	Size	Action
1	FJN10C19100000ZC	2023-10-13	FJN10C19100000ZC_20231013.rtc.m3	77.76MB	Download
2	FJN10C19100000ZC	2023-10-14	FJN10C19100000ZC_20231014.rtc.m3	82.89MB	Download
3	FJN10C19100000ZC	2023-10-15	FJN10C19100000ZC_20231015.rtc.m3	82.99MB	Download
4	FJN10C19100000ZC	2023-10-16	FJN10C19100000ZC_20231016.rtc.m3	83.76MB	Download
5	FJN10C19100000ZC	2023-10-17	FJN10C19100000ZC_20231017.rtc.m3	82.22MB	Download
6	FJN10C19100000ZC	2023-10-18	FJN10C19100000ZC_20231018.rtc.m3	23.76MB	Download

Confirmation: Are you sure you want to download? [Cancel] [OK]

FJN10C19100000ZC_20230830.rtc.m3

2023/8/30 17:46

RTCM3 文件

263 KB

3.5 Network Settings

This module allows for configuration of the network connection mode and remote service of the receiver. Ethernet and 4G network connection are supported.

3.5.1 Network Status

This feature shows the network connection status of the receiver.

3.5.2 Wired Network Configuration

This feature is used when the receiver connects to Ethernet.

Method 1 (DHCP)

- **Connection Type:** Select DHCP.
- Click **Save**.

Method 2 (Static IP)

- **Connection Type:** Select Static IP.
- Enter the IP address, subnet mask, default gateway, DNS1, and DNS2 based on the assigned network.

Refer to section 2.4.2 for details.

3.5.3 Mobile Network Configuration

This feature is used when the receiver connects to the 4G network.

- **Network Module:** Select **Enabled**.
- **Auto Start:** Select **Yes** or **No**.
- **Network Mode:** Select **2G/3G/4G (auto)** by default.
- **APN:** Enter information provided by the SIM card carrier.

3.5.4 N2N Configuration

Retain the factory settings.

N2N Configuration

*Virtual IP Address:

*Server IP Address:

[Save](#)

3.6 Firmware Update

This feature allows updating the receiver firmware and board.

Versions: shows the receiver model, receiver SN, receiver application version, receiver firmware version, firmware release date, board model, and board firmware version.

FJD Trion

GNSS

SN: FJN10C191000002C

Station Number: 19102C

Station Name: test

English

admin

Receiver Status

Satellites

Receiver Config

I/O Config

Network Settings

Firmware Update

Firmware Update

Firmware Upgrade

Versions

Receiver Model:	N10
Receiver SN:	FJN10C191000002C
Receiver Application Version:	1.2.0.9
Receiver Firmware Version:	1.2.0.9
Receiver Firmware Released On:	2023-10-13
Board Model:	B2
Board Firmware Version:	2022.09.28

System Update

Update File: [Select](#) [Install](#)

Do not leave this page during firmware update.

System Update: Select and install an update file to update the application, firmware, and board of the receiver.

Appendix 1 Specifications

Functionality	Positioning	Channels	1,408
		Frequencies	BDS B1I/B2I/B3I/B1C/B2a GPS L1C/A/L2P (Y)/L2C/L5 GLONASS L1/L2 Galileo E1/E5a/E5b QZSS L1/L2/L5
		Accuracy	Single point (RMS) Horizontal: 1.5 m Vertical: 2.5 m
			RTK (RMS) Horizontal: 0.8 cm + 1 ppm Vertical: 1.5 cm + 1 ppm
			Static differential (RMS) Horizontal: 2.5 mm + 1 ppm Vertical: 5.0 mm + 1 ppm
		Update rate	Up to 5 Hz
		Protocols	NMEA-0183, RTCM3.2
		GNSS antenna	Survey GNSS antenna or choke ring antenna
	Network	4G module	Universal
		Coverage	Global (except the Antarctic and Arctic regions)
		SIM card slot	Micro SIM
		Wi-Fi	For configuring the receiver
		Wi-Fi properties	Name: FJN10SN Initial password: 123456789 Initial IP address: 192.168.200.1
	Ethernet	Ethernet transceiver	Transmission speed: 10/100 Mbps Initial IP address: 192.168.1.6
I/O	USB	USB port	Compliant with USBIF USB2.0 standards. Max. transmission speed: 480 Mb/s
		Connector Type	Type-C

		Usage	For connecting to an external storage or updating firmware
	LEMO	LEMO connector	2-pin, applicable power supply: DC 9 V – 36 V, recommended power supply: DC 12 V
	RJ45	Aviation connector	Ethernet port
	COM1	RS232 connector	DB9 connector
	COM2	RS232 connector	7-pin LEMO
	GNSS	GNSS antenna	TNC connector
	4G	4G antenna	SMA connector
	PPS	PPS output	SMA connector
	EVENT	External event input	SMA connector
	CLK	External frequency standard input	SMA connector, reserved
Power supply	Protection	Input voltage	DC 9 V–36 V AC 90 V–260 V
		Over-voltage protection	Threshold: DC 38 V
		Protection against reverse connection	Supported
	Powering method		Lithium battery of 80 Wh (under standard conditions); External DC power supply via LEMO connector
	Battery life		>24 h
	Restart		Remote restart supported
Physical and	Power consumption		≤10 W

environmental	Dimensions	L×W×H: 220.7×152.1×81.7 mm
	Weight	2.08 kg
	IP rating	IP67
	Operating temperature	-40°C to 65°C
	Storage temperature	-40°C to 80°C

Appendix 2 Packing List

No.	Item	Qty.
1	N10 GNSS Reference Receiver	1
2	Power adapter	1
3	4G antenna	1
4	Network cable adapter	1
5	Clip	1
6	Plug (The quantity depends on your country/region.)	2 (for EU)
		1 (for US)
		1 (for China)
7	M3 hexagon socket countersunk head screw	2
8	Hex wrench	1
9	N10 GNSS Reference Receiver Quick Start Guide	1
10	Warranty	1
11	Certification	1

!	Note: This is a general packing list. If there is any inconsistency with the actual shipment, refer to the contract. Check the received items against this list or the contract, and contact your dealer if you have any questions.
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