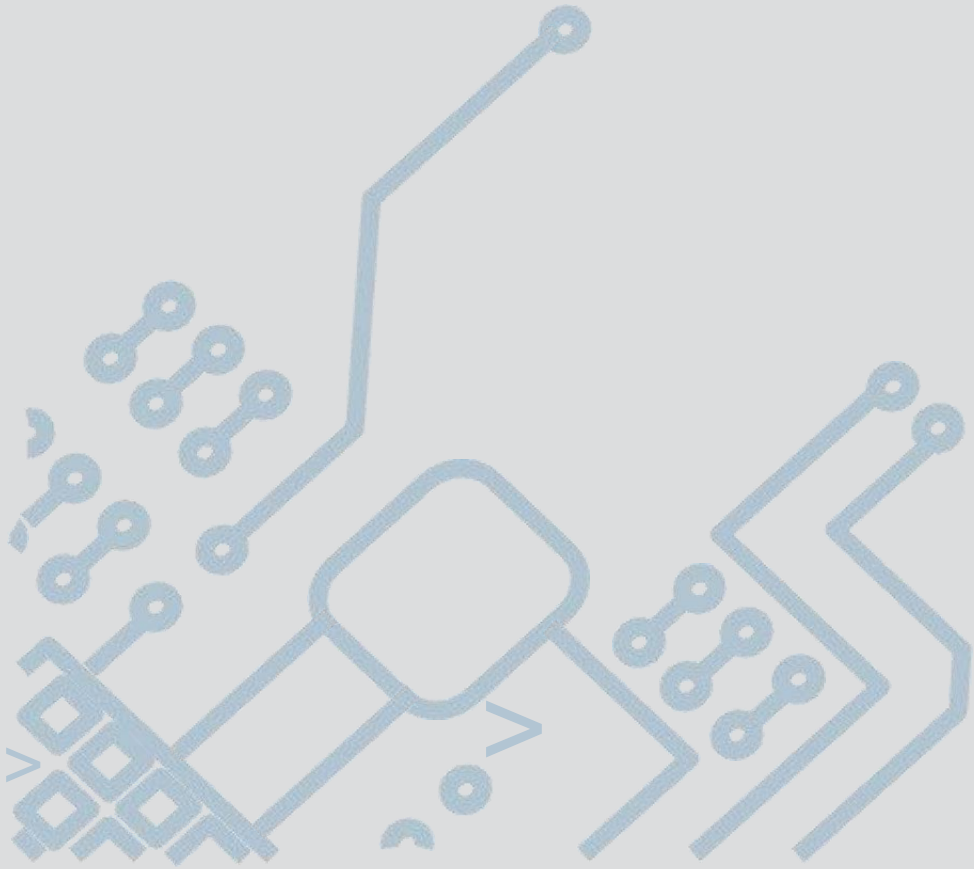
S66UFH-lite

Multi constellation multi frequency high precision GNSS Receiver



Revision History

Revised Edition	Revision History	Date
R1.0	Initial Release	2022-11-7

Statement

Please read carefully:

Thank you very much for purchasing our product. For instructions on how to use this product,please be sure to read the user manual.

This user manual is for your receiver only. If your receiver does not match the situation in the user manual, the actual situation ofthe receiver shall prevail.

The information in this document is subject to change without notice; We reserve the right to change or improve its products as well the content without any obligation to notify individual or organization of such changes or improvements. For any questions, please contact the customer service center or contact our authorized dealer.

Customer safety is important. Please carefully read the precautions and instructions in the user manual. To avoid accidental damage, use only original supplied parts. If you do not use the system or connect incompatible accessories in accordance with the correct procedures, it may cause damage to the equipment and may even endanger others and your safety. In this regard, the company does not assume any responsibility.

Applicable Readers

This manual is intended for use by technicians who have some knowledge of GNSS devices. It is not intended for general reader.

1. S66UGH-lite at a Glance

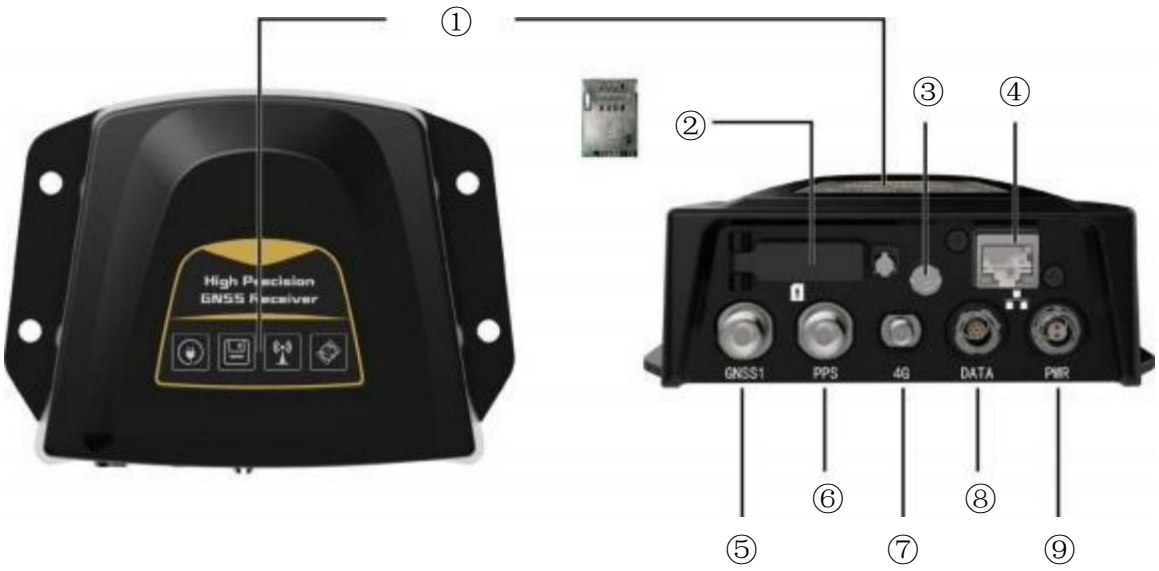
S66UGH-lite is a cost-effective miniatumized GNSS receiver designed for the construction of Beidou ground augmentation system. It has a built-in Linux operating system and is fully developed with independent intellectual property rights. It has a variety of interface types, various communication modes and supports large- capacity data storage, making it the best choice for the construction of Beidou ground augmentation system.

S66UGH-lite are available in two models:

S66UGH-lite (single antenna):connect to one antenna, with PPS function.
S66UFH-lite (dual antenna): Two antennas can be connected.

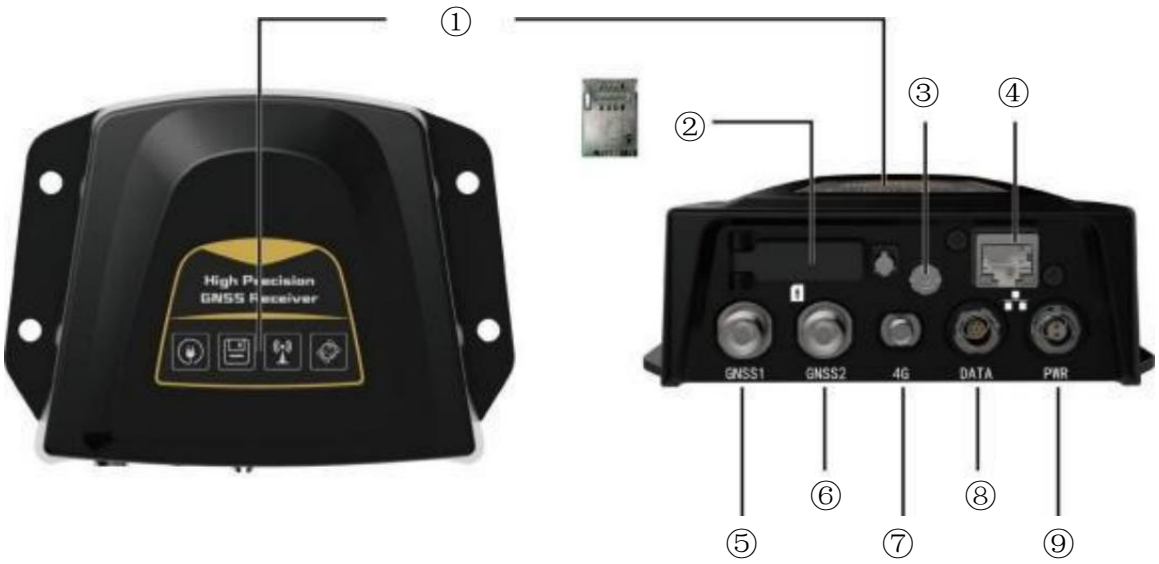
S66UGH-lite device provides a variety of communication interfaces for users to use in different application scenarios. The functions of each communication interface are as follows:

S66UGH-lite：



Serial	Name	Function
①	Indicator light	 Power light.The light is always on when the power is running.
		 Storage light. flashing when the data is stored.
		Diff Light.  Rover mode: Blink when receiving differential data . Base mode: Blink when sending differential data.
		 Satallite Light.Flashing in the positioning state.
②	SIM	SIM card slot
③	Waterproof permeable valve	Waterproof and breathable
④	RJ45	Adaptive 10/100M Ethernet interface
⑤	GNSS1	GNSS1 external receiving antenna interface
⑥	PPS	Pulse Per Second
⑦	4G	4G antenna interface
⑧	DATA	Seven-core head, RS232 interface, support positioning original data and differential data output
⑨	PWR	Device power supply interface, two-core head, device power supply interface, 9~24V (Typical 12V)

S66UFH-lite：



Serial	Name	Function
①	Indicator light	Power light.The light is always on when the power is running.
		Storage light. flashing when the data is stored.
		Date Chain Indicator Light. Rover mode: Blink when receiving differential data . Base mode: Blink when sending differential data.
		Satallite Indicator Light.Flashing in the positioning state.
②	SIM	SIM card slot
③	Waterproof permeable valve	Waterproof and breathable
④	RJ45	Adaptive 10/100M Ethernet interface
⑤	GNSS1	GNSS1 external receiving antenna interface

Serial	Name	Function
⑥	GNSS2	GNSS2 external receiving antenna interface
⑦	4G	4G antenna interface
⑧	DATA	Seven-core head, RS232 interface, support positioning original data and differential data output
⑨	PWR	Device power supply interface, two-core head, device power supply interface, 9~24V (Typical 12V)

2. Basic Operation

2.1 Boot

The host does not have internal battery. To run the device, the external power supply is needed.

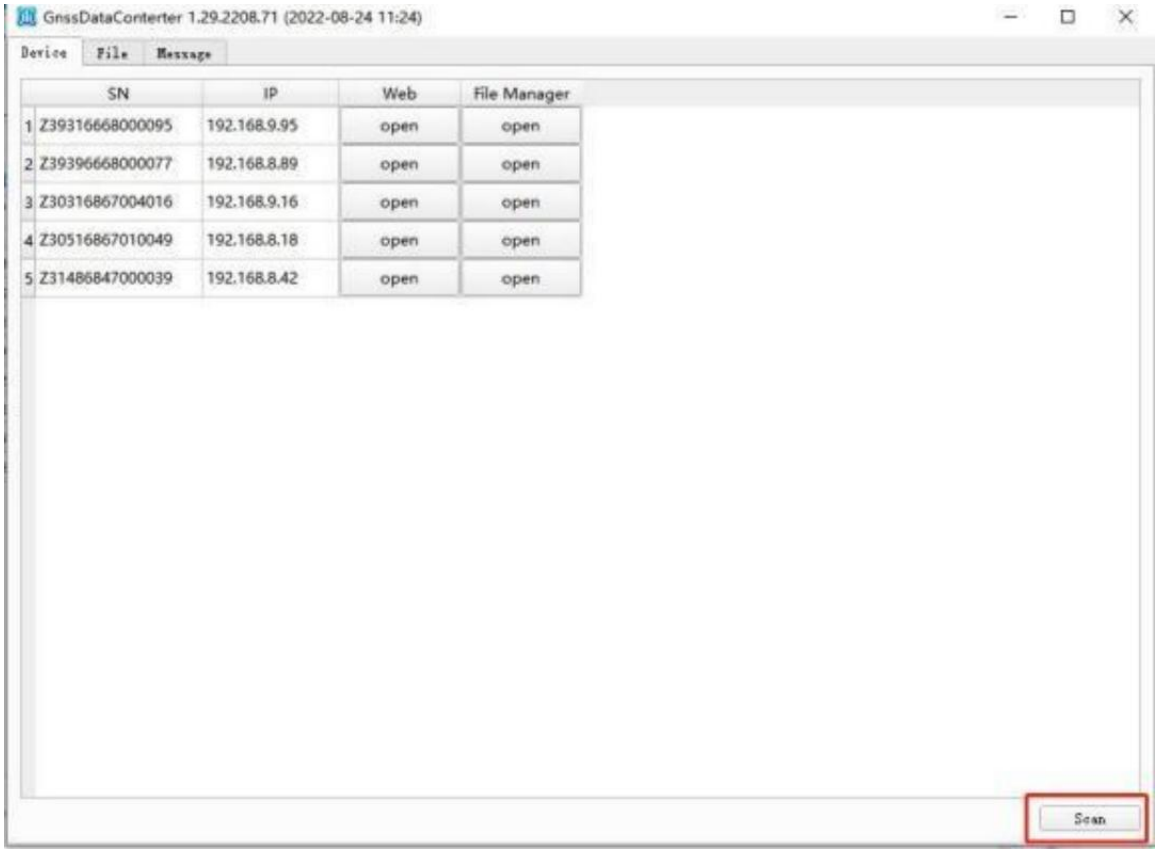
Please use the original adapter to avoid any danger. Once device is connected to the 2-pin power cable, it will automatically power on.

2.2 Shutdown

Unplug the external power supply, the device shuts down.

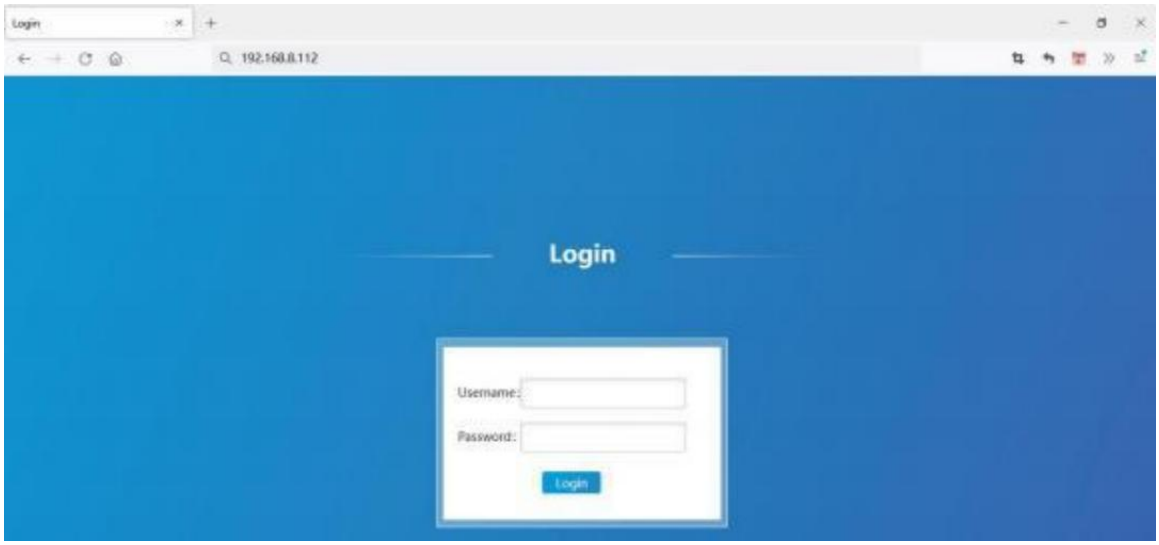
2.3 Login

The receiver supports Web access to the built-in management page to view the receiver's working status in real time or download management static storage data. The method is to power on the receiver, access the switch or router through the straight-through line, keep the PC/laptop accessing the receiver in the same LAN as the receiver, open **GnssDataConverter** software, and query the host IP address.Enter the username and password in the browser (the default username and password are **admin ~abc123456**).If you cannot scan the IP address, check that the PC and the host are in the same LAN.



Scan IP

Note: In order to enhance security, the maximum timeout time for the client browser to access the device is 10 minutes. If the browser does not operate for more than 10 minutes, it will automatically log out and re-enter the login interface.



Login

After the verification information is successfully logged in, enter the web interface ofthe S66UGH-lite, the home page content is the device status, as shown below:

Status

Note: The display effect of different browsers will be slightly different, it is recommended to use the Firefox browser.

The web interface of the S66UGH-lite device is mainly divided into 8 parts, and each part is divided into multiple display information and function setting selection. The details will be introduced in the next chapters.

3. WebUI Introduction

3.1 General

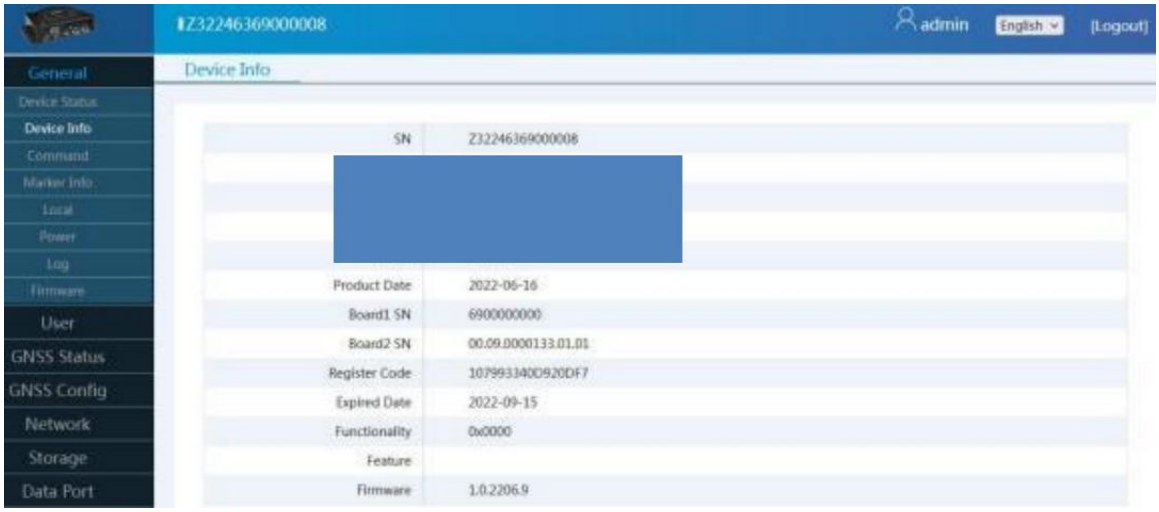
3.1.1 Device Status

Provides the physical status of the device, such as UTC Time, GNSS Quality, Temperature, Voltage, Battery Info, Ethernet, CPU, and Exception. As shown below:

Device Status

3.1.2 Device Info

Provides the basic information of the device, such as SN, Expired Date, Feature Function, firmware and other information. As shown below:



Device Info

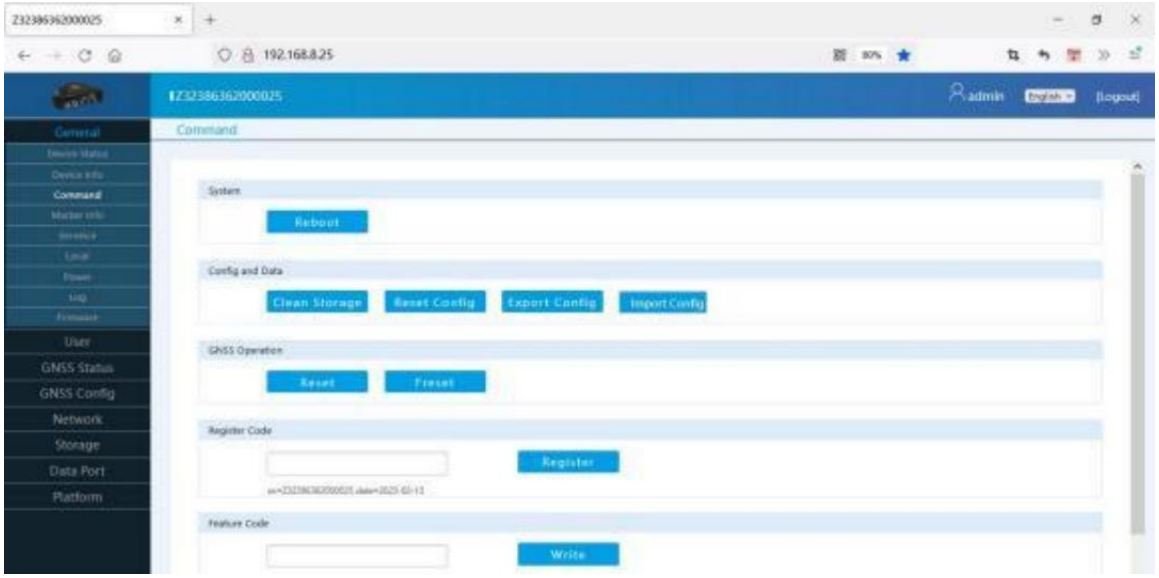
3.1.3 Command

Provides the System, Config, Operation, Power, Feature Code and Register Code of the device commands. As shown below:

The registration code is a valid time code for authorizing the device location function. When it is found that the registration code is expired and the device location function is unavailable, we can obtain a new registration code for the supplier by providing the device SN, and enter it on this page and click [Register] to register.

Reset Config: To restore the host to the factory settings state.

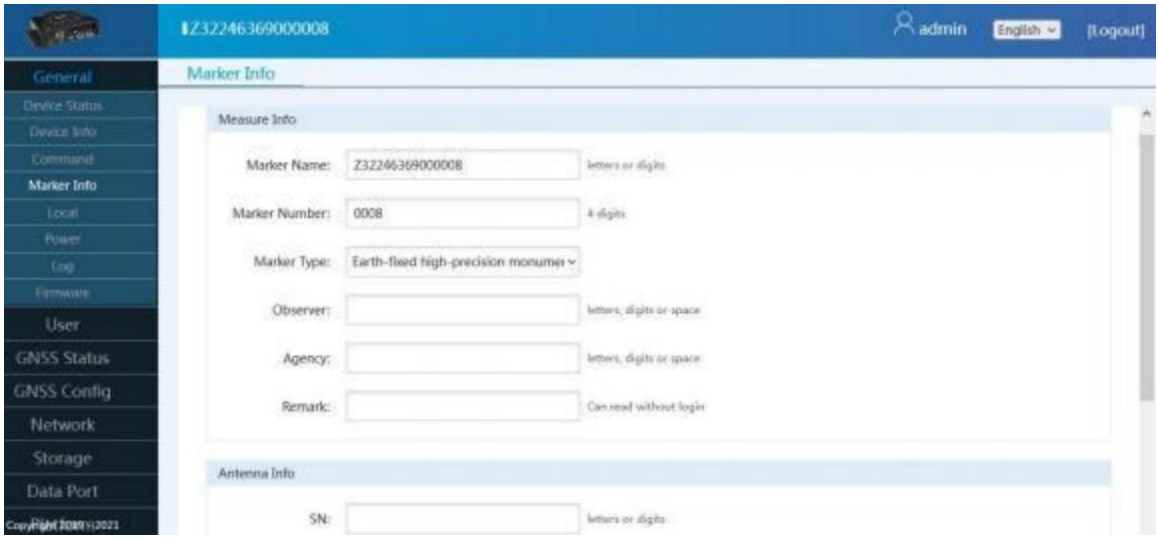
Featrue code: input the customization code, restart the host, you can increase the corresponding function ofthe customization code.



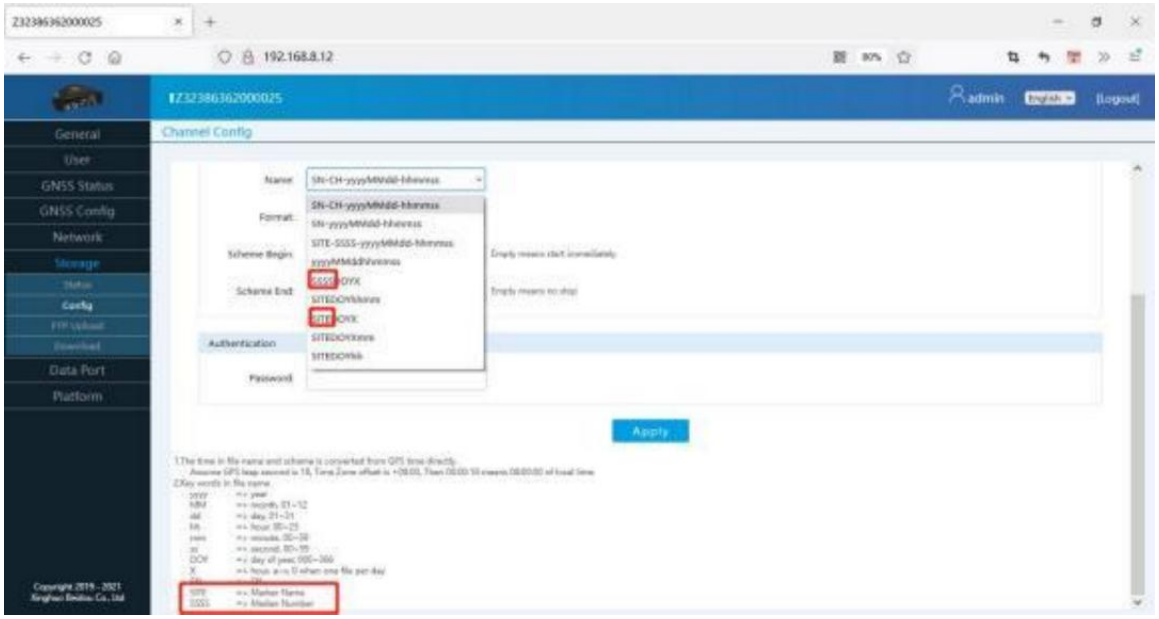
3.1.4 Marker Info

Provides Measure Info such as the Marker Name, Marker Number, Marker Type and Antenna Info such as the SN, Setup ID.

After modifying the Marker Name, Marker Number, the file name is changed when the data is stored.



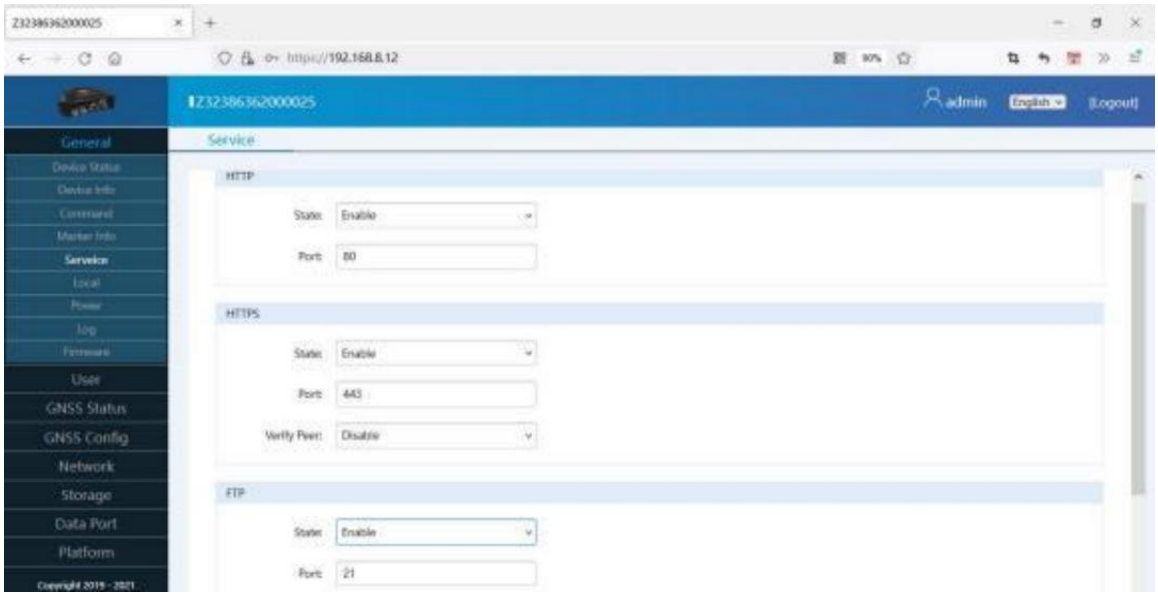
Marker Info



File name

3.1.5 Service

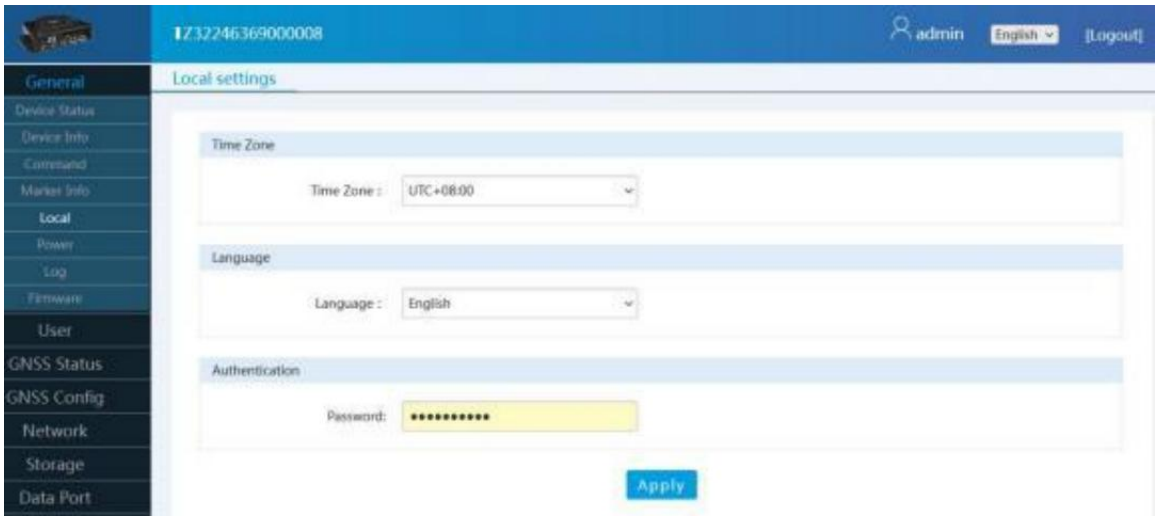
Provides service configuration options, configure HTTP, HTTPS, FTP and other related ports.The default configured port is commonly used. You don't need to fill in the login address. If you modify the port, fill in the port behind the address.



Service

3.1.6 Local

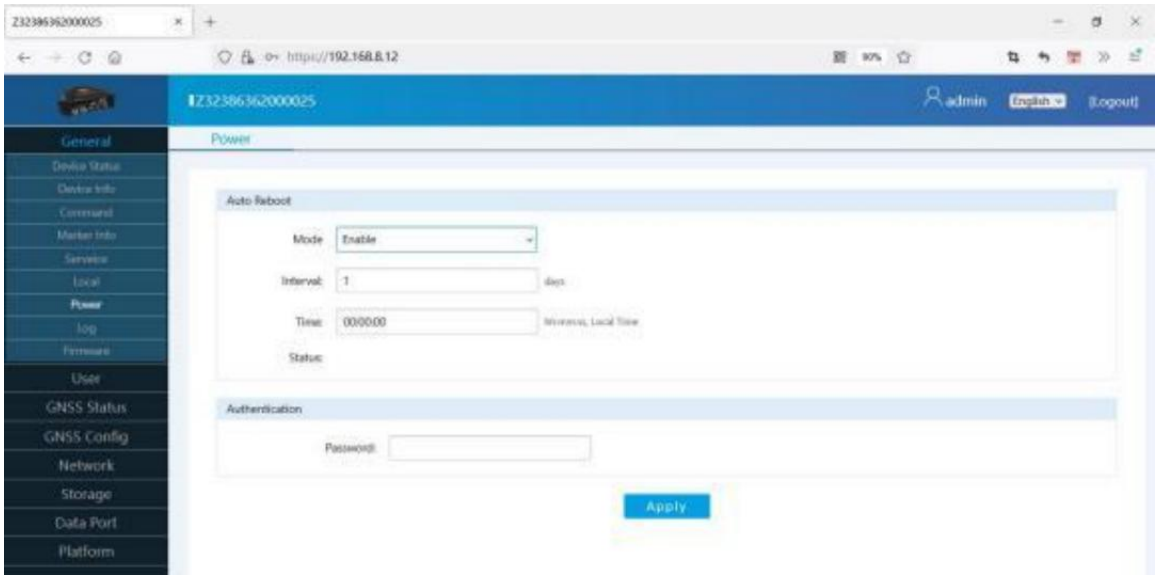
Provides time zone settings and language settings ofthe device.The time zone time is used to display the time in your current city. For example, ifyou are in Beijing, choose UTC+08:00.As shown below:



Local

3.1.7 Power

Provides the Auto Reboot of the device.If the customer wants to get the relocation data every while, they can set it up. As shown below:



Power

3.1.8 Log

Each time the device is powered on, a system log file will be generated to record the various states of the device, so that it is convenient to investigate the cause of the device exception when an exception occurs. You can download the log generated at the corresponding time here to the supplier for troubleshooting.As shown below:

Log

3.1.9 Firmware

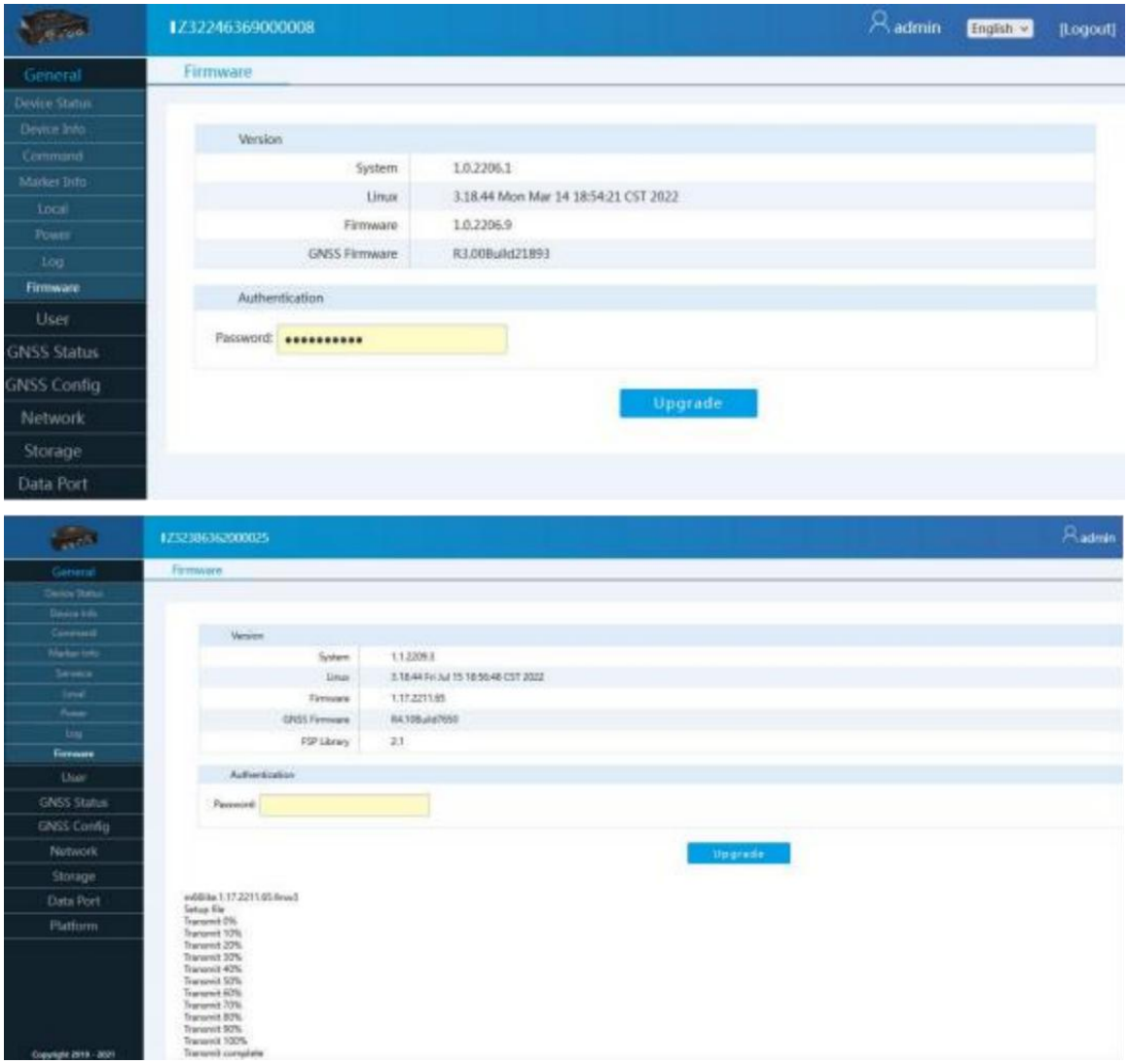
Provides the current device's device system, linux, firmware, GNSS firmware and other version information, as well as version upgrade operations.Click below to upgrade the firmware, you can automatically identify and upgrade GNSS firmware, and device firmware. There will be a prompt below during the upgrade, and the device will restart after the upgrade is complete.The operation steps are as follows:

1.Click [Upgrade Firmware];

2.Select the correct firmware or GNSS firmware in the pop-up window, flash the firmware and wait for the device to restart;

3.After the restart is complete, the firmware upgrade is completed;

4.Enter the webui, and check whether the firmware has been upgraded successfully.



Upgrate firmware

3.2 User

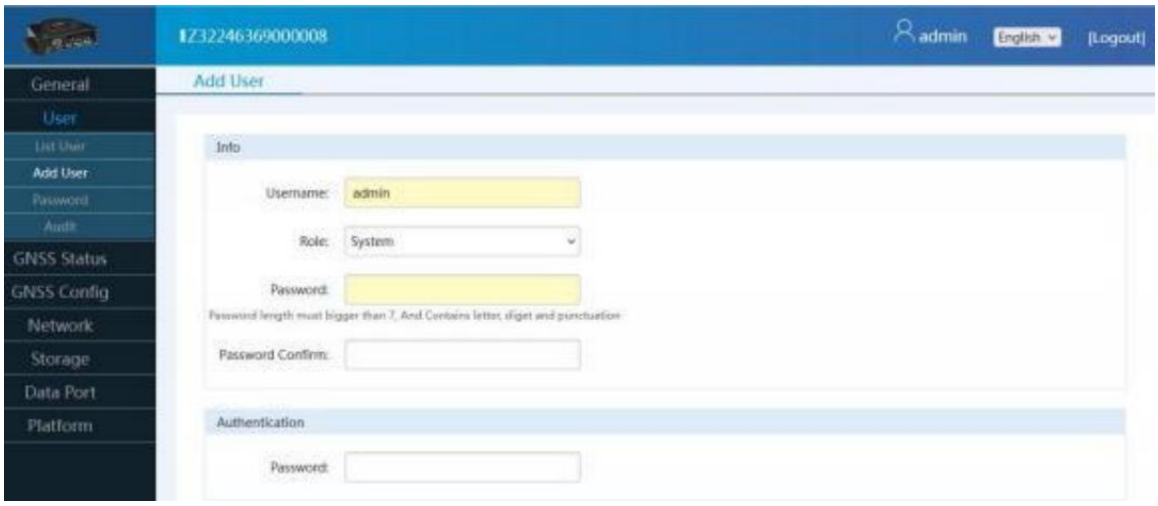
3.2.1 List User

Provides the current device user list, admin is the administrator, has the highest authority, and can add or decrease other users, configure password settings and permissions. When creating a new user, the user has no password by default, and can only be used after setting a password. As shown below:

List User

3.2.2 Add User

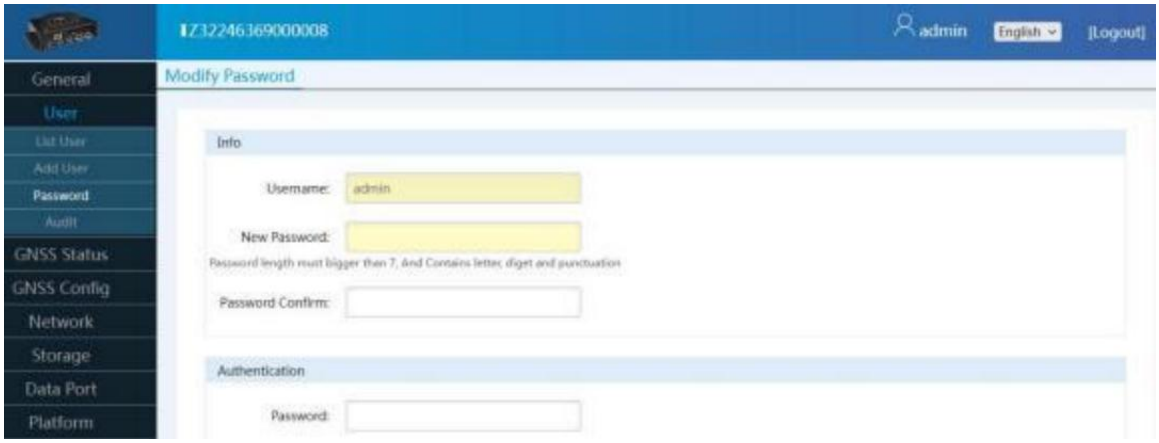
Set new user information, role permissions and add operations. As shown below:



Add User

3.2.3 Password

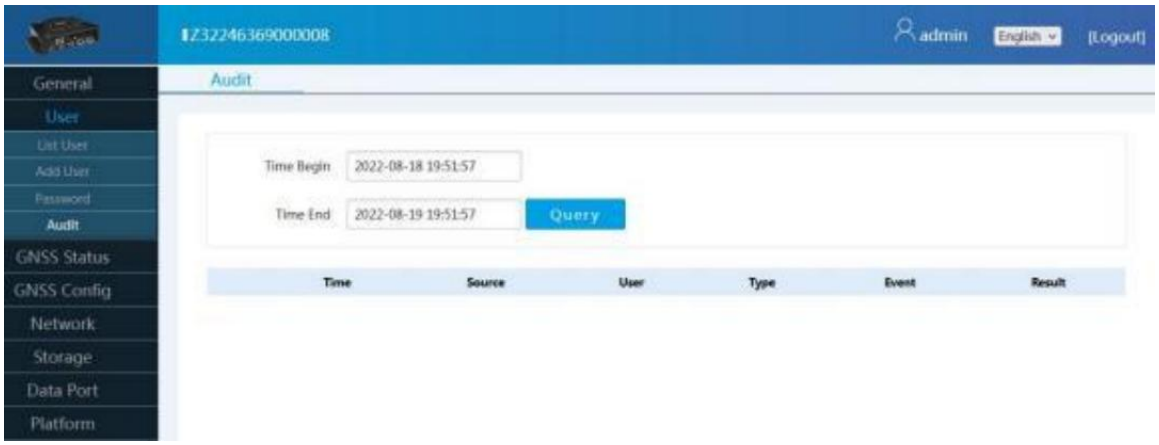
It is used to modify the password of the currently logged-in user. The current user password needs to be filled in at the authentication place. As shown below:



Password

3.2.4 Audit

Users with audit privileges can query audit records. As shown below:



Audit

3.3 GNSS Status

3.3.1 Status

Used to display the Time, UTC, Quality, Used/Tracked, Differential Age, PDOP, Latitude, Longitude,and Point Height.Note that the Point Height is the height ofthe phase center ofthe antenna to the surface ofthe WGS84 ellipsoid .As shown below:

Status

3.3.2 C/No

There are two display modes: table and chart. Click the corresponding satellite system icon to view the satellite signal-to-noise ratio information of the system. As shown below:

Note: The number of carrier-to-noise ratio frequency points is related to the receiving environment. For example, the number of frequency points displayed indoors and outdoors will be different.

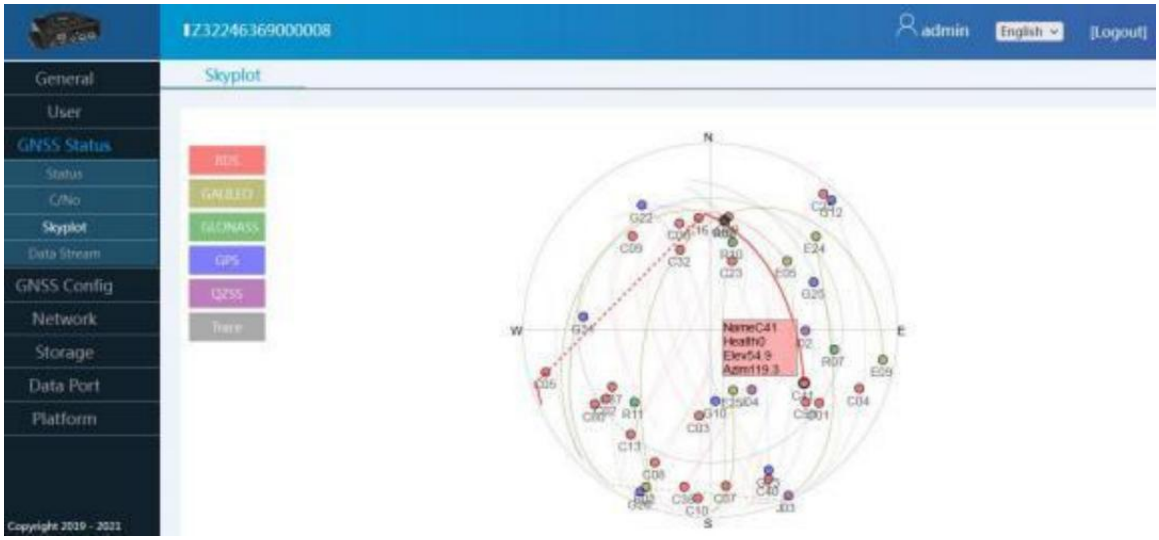
The 3 behind the load noise value represents the tracking status of the satellite, which some customers will use.

Table

Chart

3.3.3 Skyplot

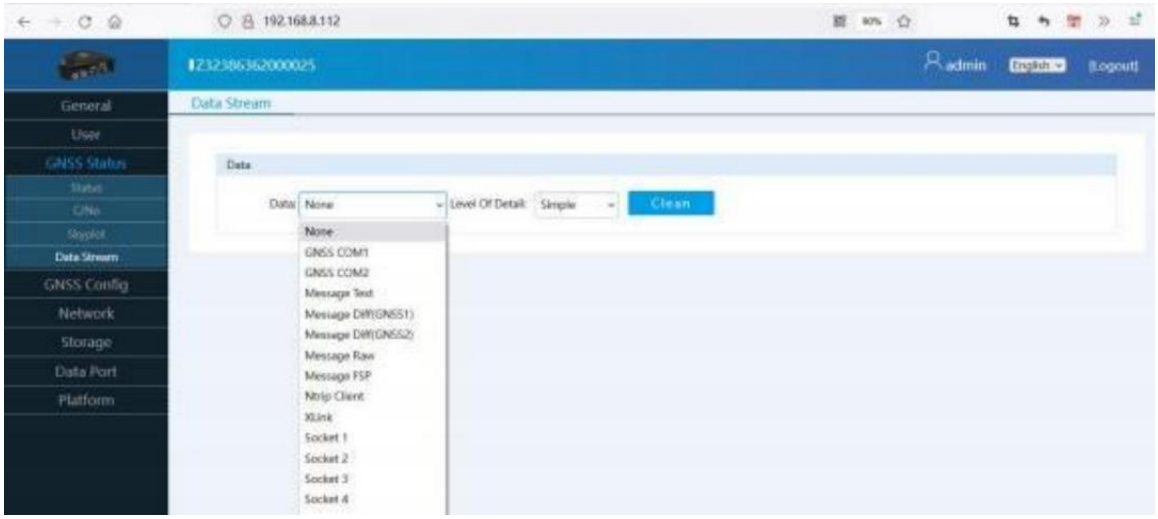
Display the distribution ofthe satellites tracked by the current device, check **[Trace]** to draw the running track diagram ofthe satellites tracked by the device in the monitoring time period. As shown below:



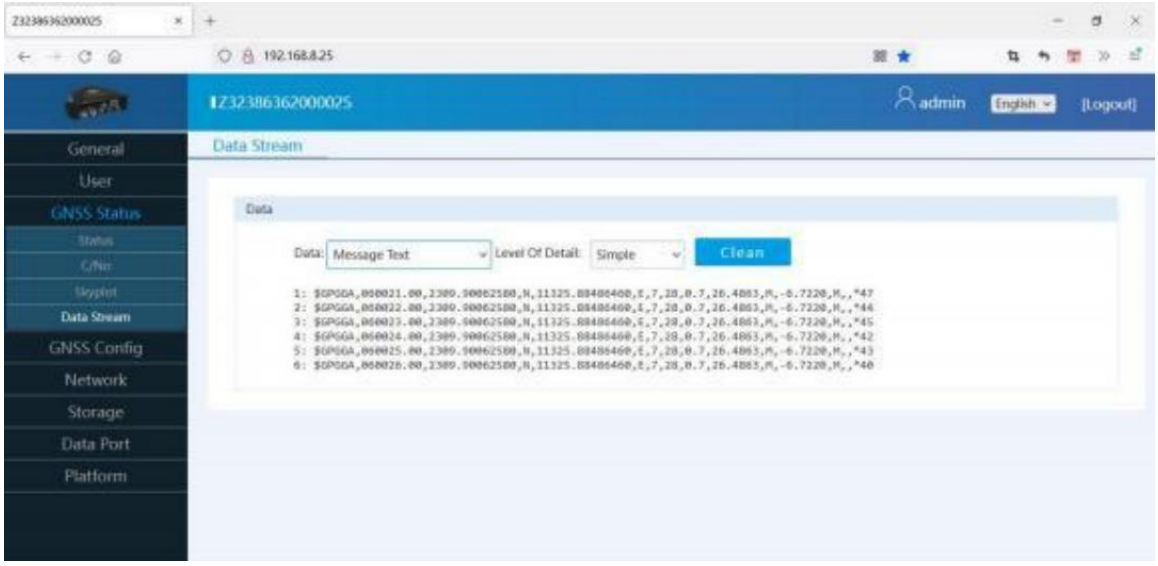
Skyplot

3.3.4 Data Stream

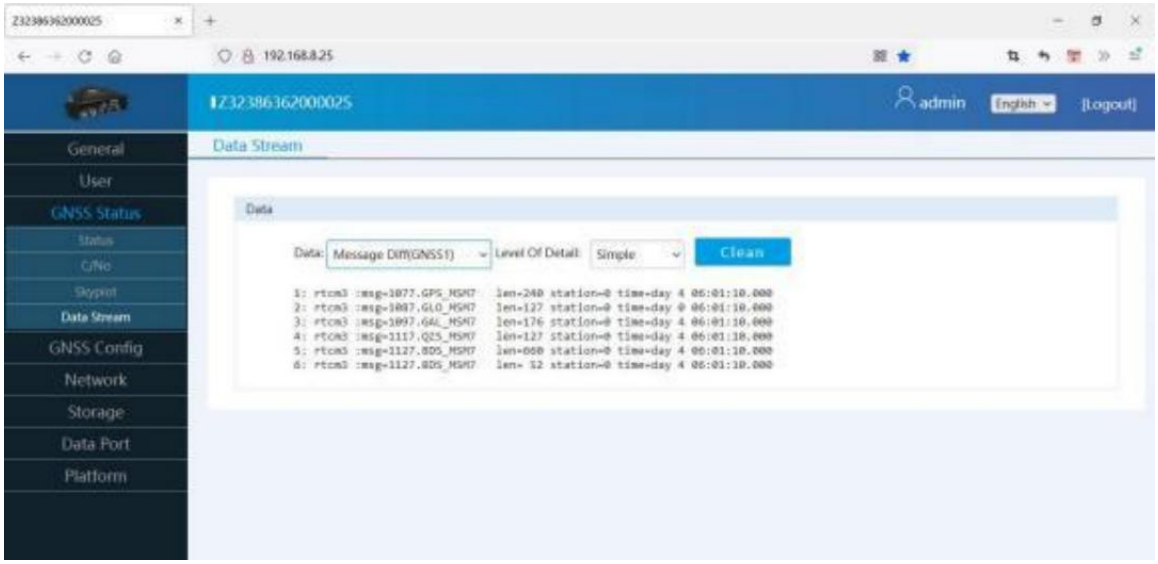
Select the data source in the data drop-down menu, you can directly view the real-time data of the corresponding data source on the web side. This can be used to determine whether the host outputs data. Such as Message Text，Message Diff（or whether it receives data.Such as, ntrip client.As shown below:



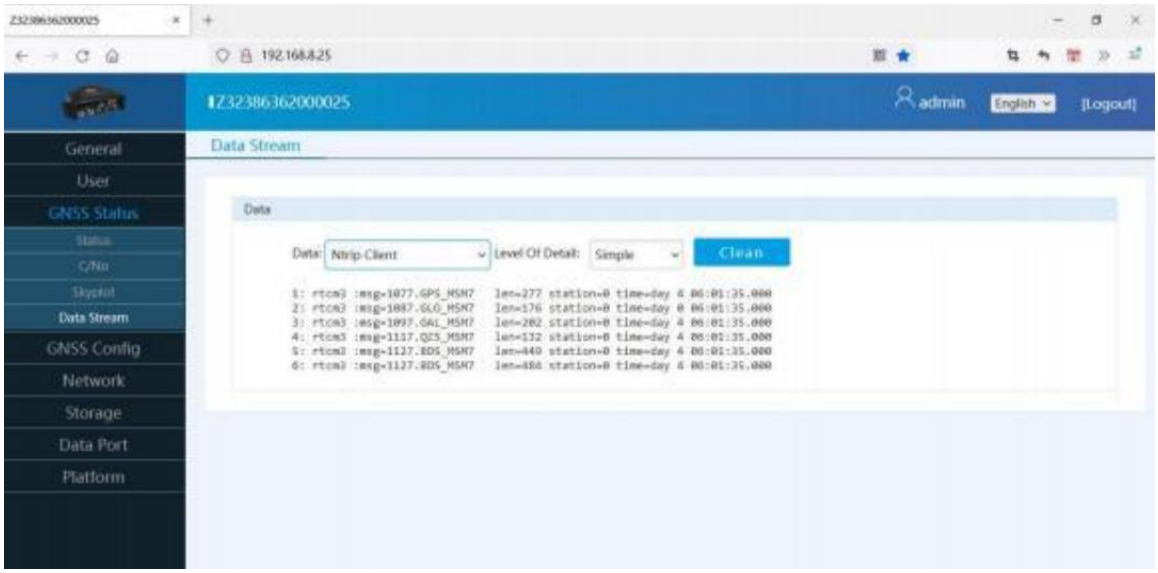
Message Text：



Message Diff: when the device is the base station, you can check whether there is differential data output here.



Ntrip client：When the device is a rover station and uses Ntrip Client to obtain differential data, you can check whether there is differential data output here.



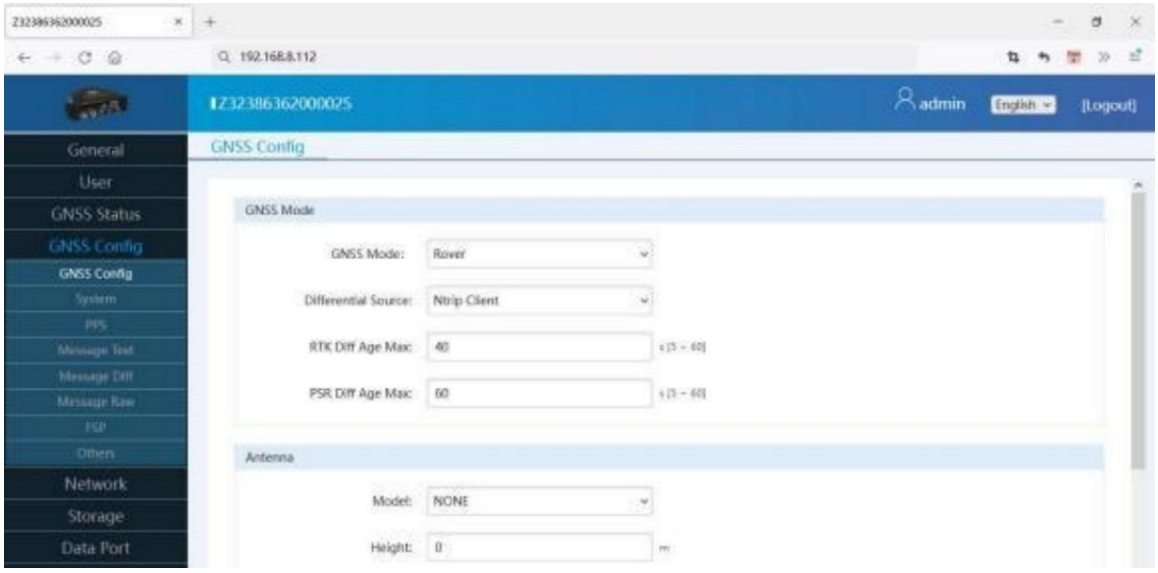
Data Stream

3.4 GNSS Config

3.4.1 GNSS Config

It is used to configure the working mode of the device (base station, rover station), whether to supply power to the antenna and the selection of the level surface. Check **[Get Coordinate]** to obtain the real-time coordinate value of the current device after the successful positioning.

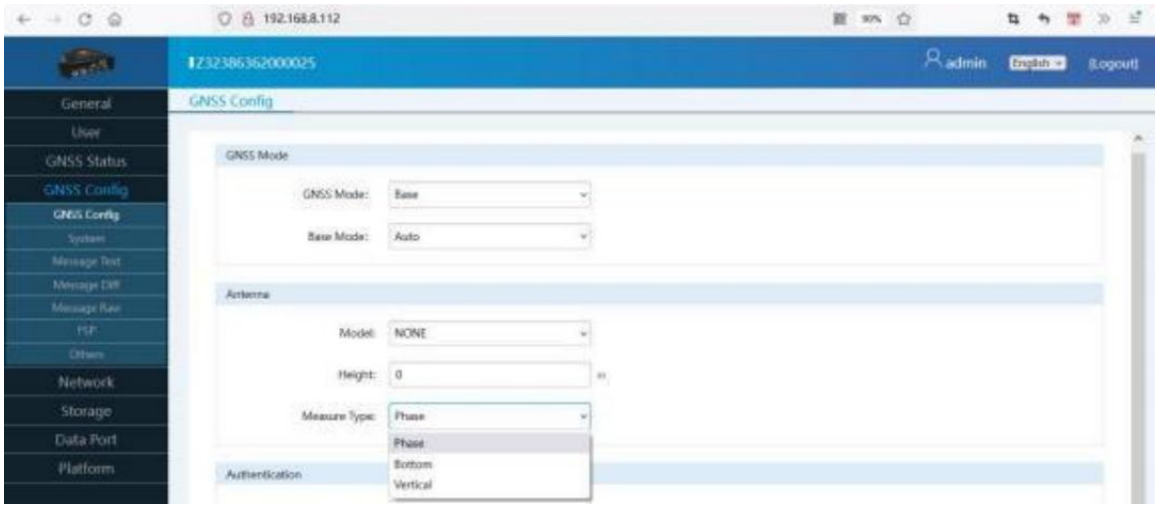
As a rover mode, you can select **[Differential Source]**. As shown below:



Rover Mode

When used as the base station, auto coordinate start and repeat coordinate start can be selected.

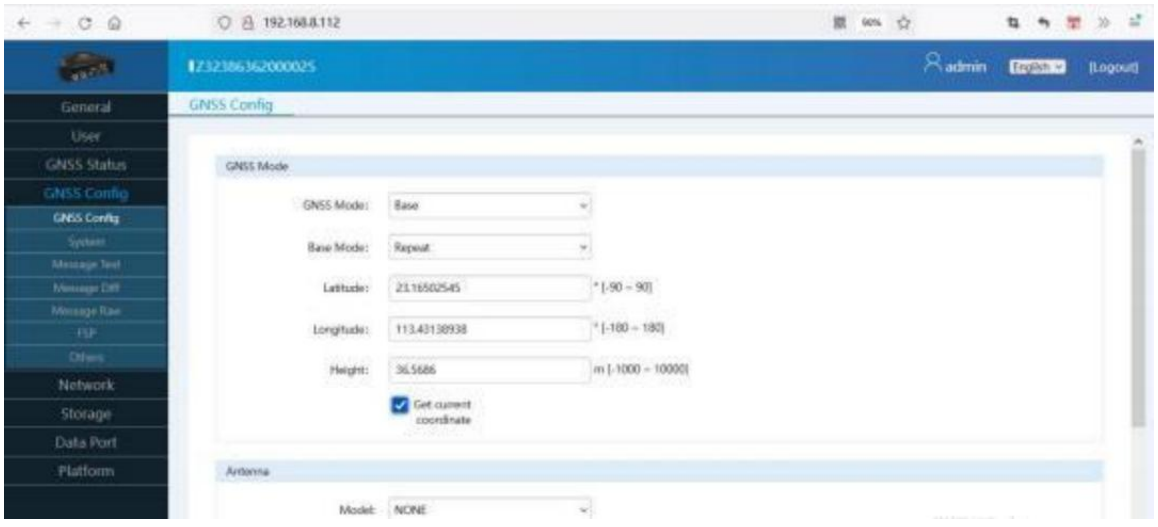
When auto coordinates are started, the device automatically matches a base station start coordinate according to the current single-point positioning data to start the base station. As shown below:



Base Station Mode - Auto

There are three ways to measure the antenna height: [Phase], [Bottom] and [Vertical].

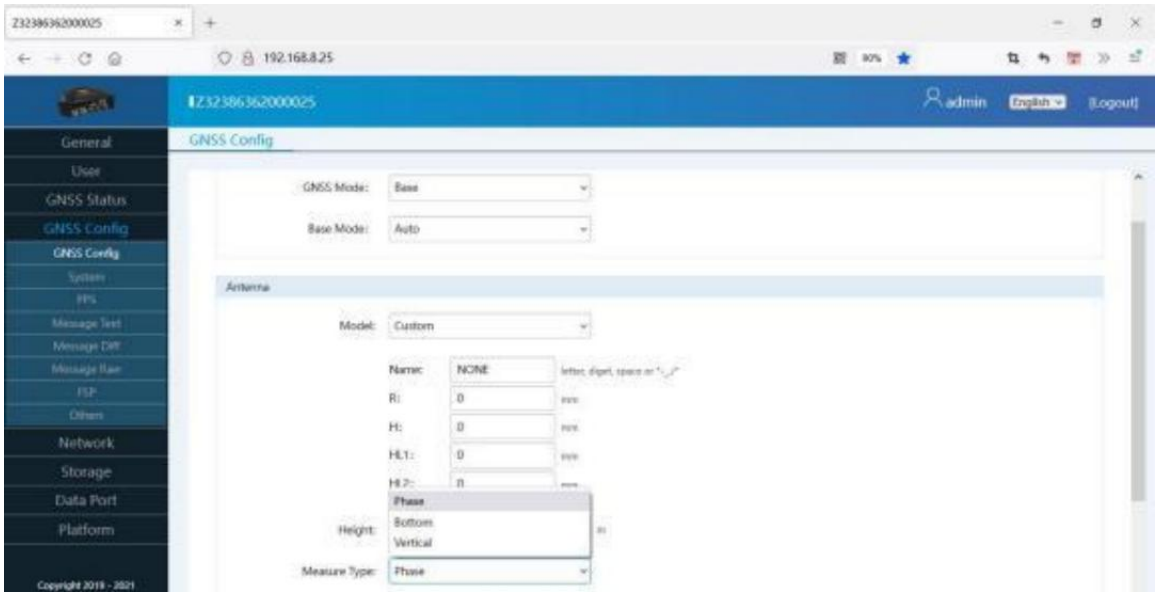
When starting with repeat coordinates, you can manually input the coordinates of the location of the antenna to start the base station, or you can check " **Get current coordinates"** to obtain the current single point coordinates ofthe device to start the base station. As shown below:



Base Station Mode - Repeat

According to the command RTCM1006 in the requirement document, the "ah" (the antenna height is actually the bottom height) is the result ofthe conversion ofthe antenna information parameters filled in the "Positioning Configuration" page, and its value range is 0.0000-6.5535. Ifthe converted value Ifit is not within this range, the page will prompt "parameter invalid" during application. The conversion methods for the three antenna

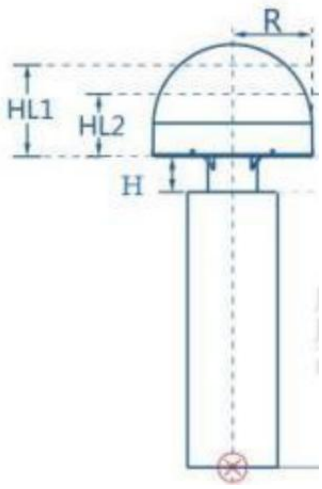
height acquisition methods are as follows:



1）The conversion formula when the phase center height is selected: **Bottom height = Phase center height-H-HL1**

2）Conversion formula when selecting straight height: **Bottom height = Straight height - H**

3）The conversion formula when bottom height is selected: **Bottom height = Bottom height**



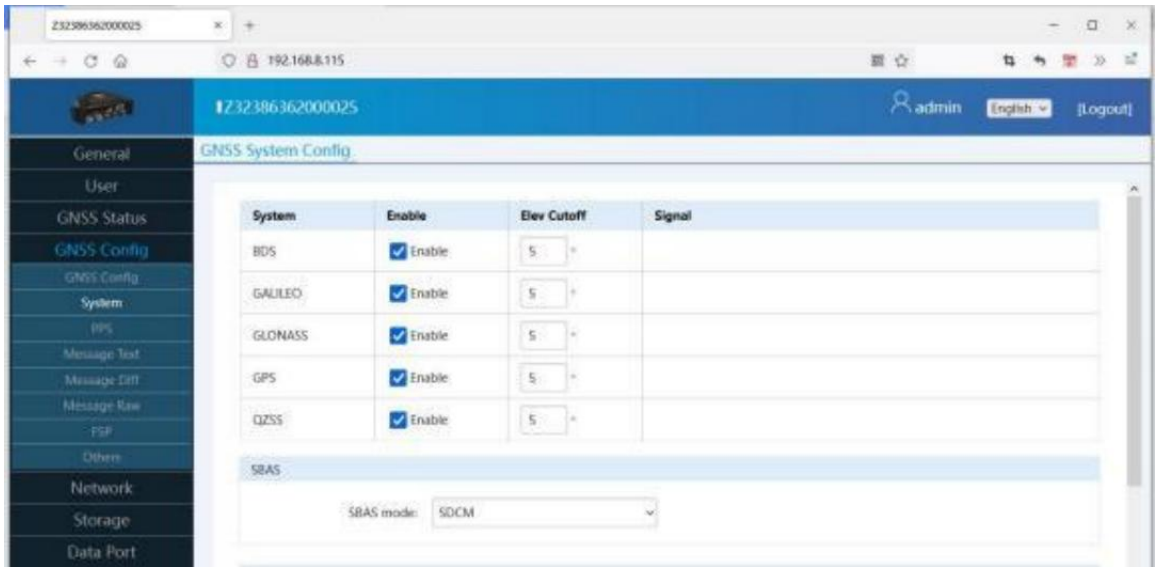
3.4.2 System

It is used for device satellite system selection, cut-off angle setting and frequency signal selection.

If it is found that the device receives fewer satellites under normal environment, you can enter this page to check whether all satellite systems have been turned on.

Elev Cutoff refers to the shelter height Angle set in the GPS measurement to block the occlusion objects (such as buildings, trees, etc.) and the influence of the multi-path effect, and the satellites lower than this Angle visual airspace will not be tracked.

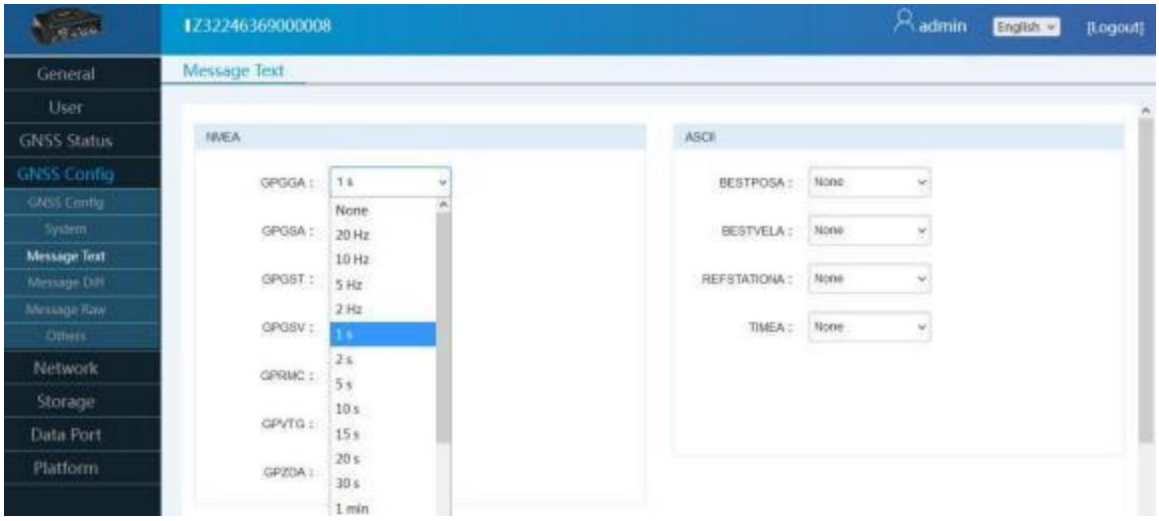
When these low-angle satellites interfere with your measurements, you can't get a fixed solution. The common problem is that the RTK is always float solution. When you adjust the cut height angle（15 。 or 20 。 ）to block those interfering low-angle satellites, you can increase the probability of getting a fixed solution.



System

3.4.3 Message Text

Used to configure the device text data output type and output rate, as shown below:



Message Text

The following are the formats of several common message text:

GPGGA	$GPGGA,<1>,<2>,<3>,<4>,<5>,<6>,<7>,<8>,<9>,M,<10>,M,<11>,<12>*hh
<1>	UTC time, hhmmss (hour minute second) format, 8 hours different from Beijing time
<2>	Latitude ddmm.mmmm (degrees and minutes) format (the previous 0 will also be transmitted)
<3>	Latitude Hemisphere N (Northern Hemisphere) or S (Southern Hemisphere)
<4>	Longitude dddmm.mmmm (degrees and minutes) format (the previous 0 will also be transmitted)
<5>	Longitude Hemisphere E (East Longitude) or W (West Longitude)
<6>	GPS status: 0=no positioning, 1=single point positioning, 2=SBAS differential positioning, 4=RTK fixed solution, 5=RTK floating point solution, 6=inertial navigation positioning
<7>	The number of satellites (00~ 12) using the solution position (the previous 0 will also be transmitted)
<8>	HDOP horizontal precision factor (0.5~99.9)
<9>	Altitude (- 9999.9~99999.9)
<10>	Height of earth ellipsoid relative to geoid
<11>	Differential time (the number of seconds since the last differential signal was received. If it is not differential positioning, it will be null)
<12>	Differential station ID No. 0000~4095 (the previous 0 will also be transmitted, otherwise it will be null)

GPGSA	$GPGSA,<1>,<2>,<3>,<3>,<3>,<3>,<3>,<3>,<3>,<3>,<4>,<5>,<6>*hh
<1>	Mode, M=manual, A=automatic
<2>	Positioning type, 1=no positioning, 2=2D positioning, 3=3D positioning
<3>	PRN code (pseudo-random noise code), the satellite number (01~32, the previous 0 will also be transmitted) being used to calculate the position.
<4>	PDOP position precision factor (0.5~99.9). The spatial geometric intensity factor of satellite distribution. Generally, the better the satellite distribution is, the smaller the PDOP value is, which is generally less than 3.
<5>	HDOP horizontal precision factor (0.5~99.9)
<6>	VDOP vertical precision factor (0.5~99.9)

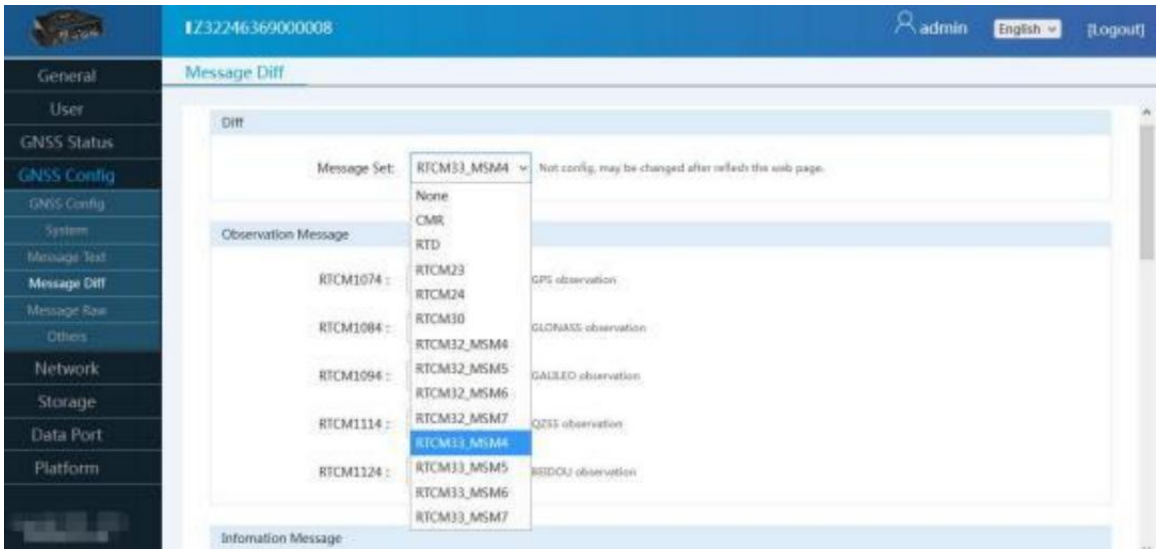
GPGSV	$GPGSV,<1>,<2>,<3>,<4>,<5>,<6>,<7>, …<4>,<5>,<6>,<7>*hh
<1>	Total number ofGSV statements
<2>	Number ofGSV in this sentence
<3>	Total number ofvisible satellites (00~ 12, the previous 0 will also be transmitted)
<4>	PRN code (pseudo-random noise code) (01~32, the previous 0 will also be transmitted), which can be understood as satellite number.
<5>	Satellite elevation (00~90 degrees, the front 0 will also be transmitted)
<6>	Satellite azimuth (000~359 degrees, the front 0 will also be transmitted)
<7>	Signal to noise ratio (00~99dB, empty when no satellite is tracked, and the previous 0 will also be transmitted), 50 is better.
Note:<4>,<5>,<6>,<7>information will be displayed circularly according to each satellite, and each GSV statement can display information ofup to 4 satellites. Other satellite information will be output in the next sequence ofNMEA0183 statements.	

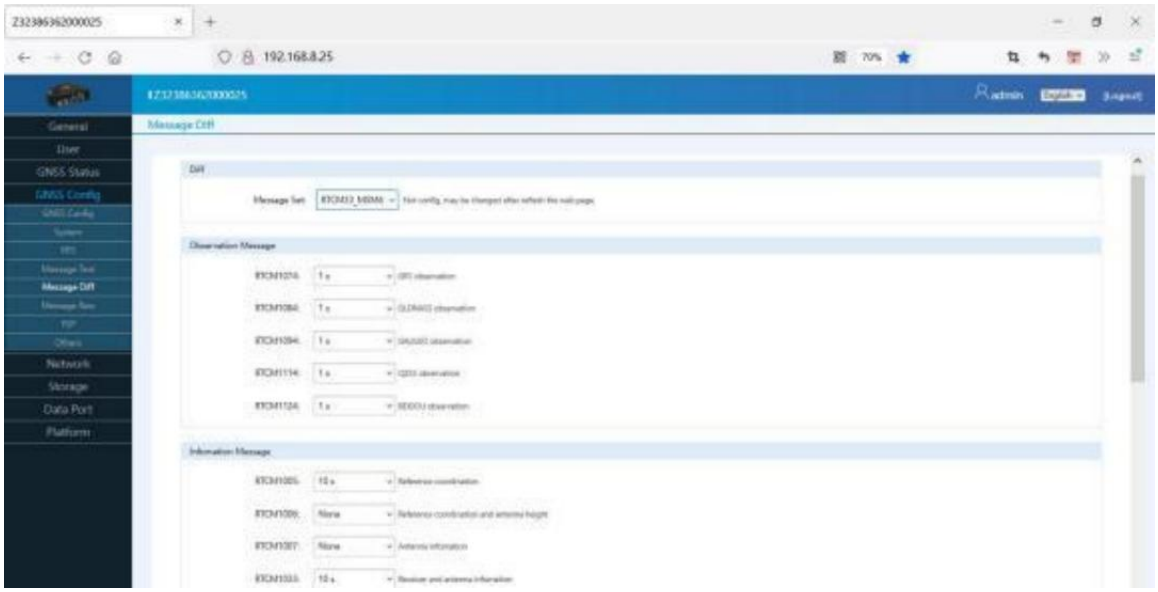
GPRMC	$GPRMC,<1>,<2>,<3>,<4>,<5>,<6>,<7>,<8>,<9>,<10>,<11>,<12>*hh
<1>	UTC time, hhmmss (hour minute second) format, 8 hours different from Beijing time
<2>	Positioning status, A=valid positioning, V=invalid positioning. This flag is used to determine whether the current positioning is valid.

<3>	Latitude ddmm.mmmm (degrees and minutes) format (the previous 0 will also be transmitted)
<4>	Latitude Hemisphere N (Northern Hemisphere) or S (Southern Hemisphere)
<5>	Longitude dddmm.mmmm (degrees and minutes) format (the previous 0 will also be transmitted)
<6>	Longitude Hemisphere E (East Longitude) or W (West Longitude)
<7>	Ground speed (000.0~999.9 knots, the previous 0 will also be transmitted)
<8>	Ground heading (000.0~359.9 degrees, with true north as reference, the previous 0 will also be transmitted)
<9>	UTC date, ddmmyy (day month year) format
<10>	Magnetic declination (000.0~ 180.0 degrees, the previous 0 will also be transmitted)
<11>	Magnetic declination direction, E (east) or W (west)
<12>	Mode indication (A=autonomous positioning, D=differential, E=estimation, N=invalid data)

3.4.4 Message Diff

It is used to configure the format ofthe device differential message, the observation message, the information message, the ephemeris message, the ID ofthe base station and the output frequency.Usually follow the default configuration is OK.As shown below:

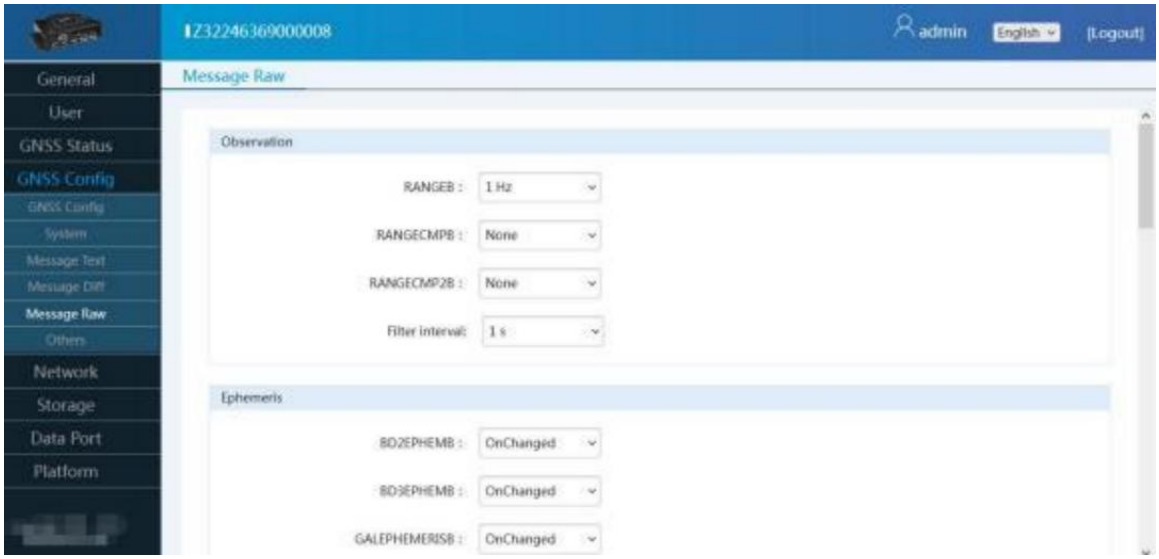




Message Diff

3.4.5 Message Raw

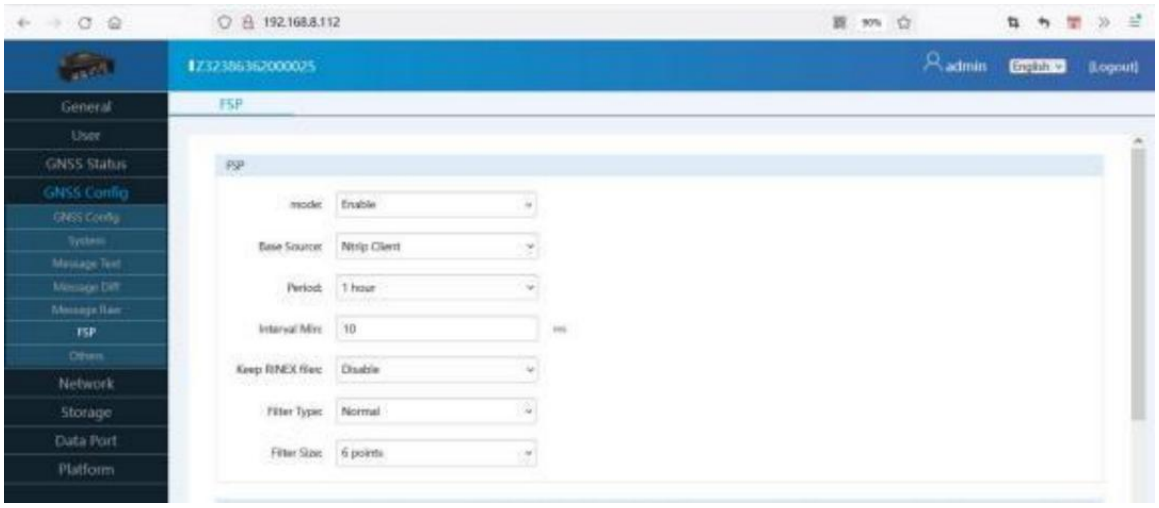
It is used to configure the raw data output rate ofthe device, including observation data, ephemeris, ionospheric parameters, navigation messages, other messages, etc., and provides observation data filters. Compared with range, rangecmpb and rangecmp2b are compressed, with less data volume and more space-saving when storing data.As shown below:



Message Raw

3.4.6 FSP

Settings used to configure static solution parameters.Such as base station data source, solution period, Filter Type, Filter Size,whether to save Renix file.



FSP

3.4.7 Others

It is used to select the Undulation, and send user-defined commands to the GNSS board.

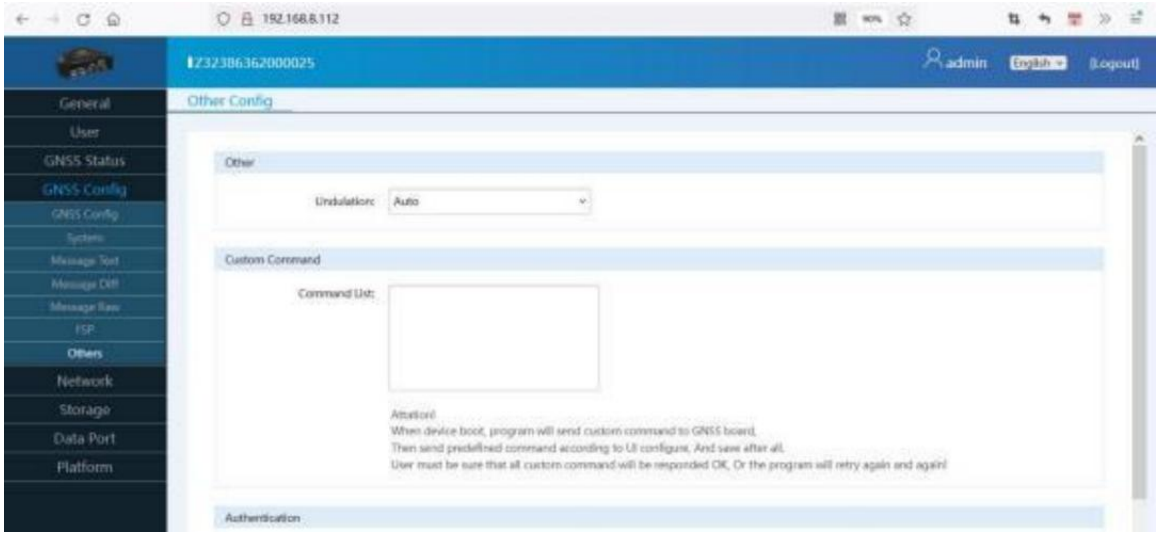
When the customer wants to send a corresponding message directly to the GNSS board, it can enter in the box.

Attation:

When device boot, program will send custom command to GNSS board,

Then send predefined command according to UI configure, And save after all.

User must be sure that all custom command will be responded OK, Or the program will retry again and again!



Others

3.5 Network

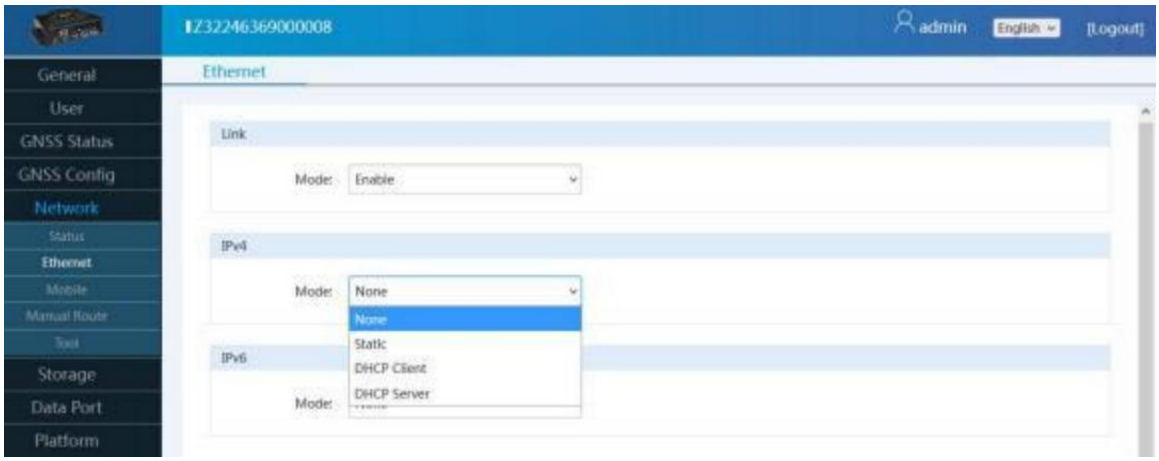
3.5.1 Status

Displays the Ethernet, and Mobile network enabling status ofthe current device. As shown below:

Status

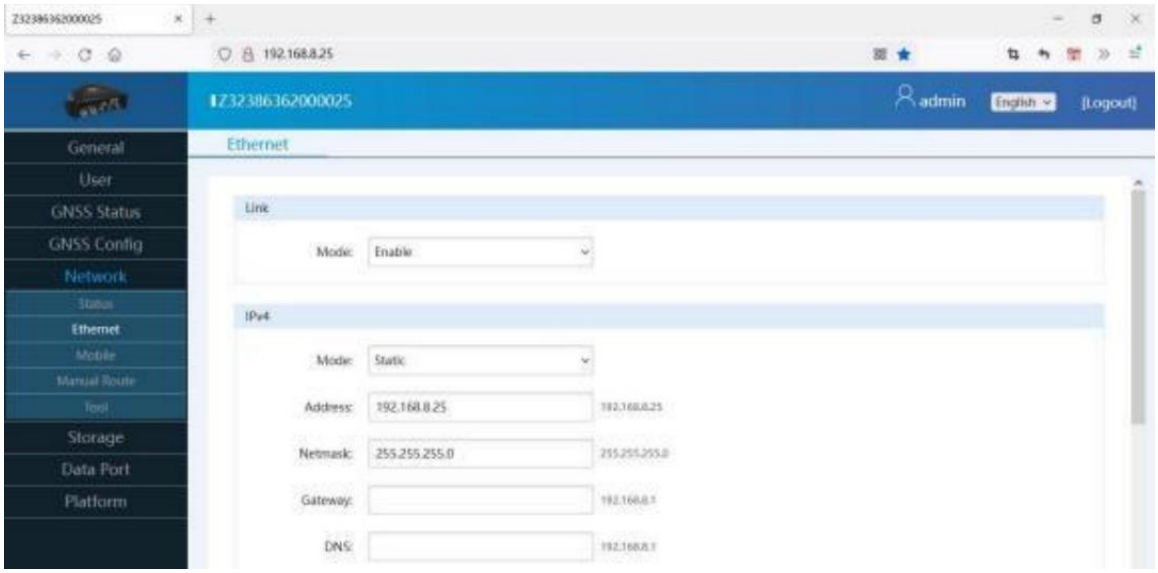
3.5.2 Ethernet

Information for configuring the device ethernet network. In static address mode, IP, mask, gateway and DNS need to be entered manually, as shown below:



Ethernet

When a cable network cannot access it, a 4G card is needed to access it. This need to set to static mode, set the Gateway and DNS to empty.

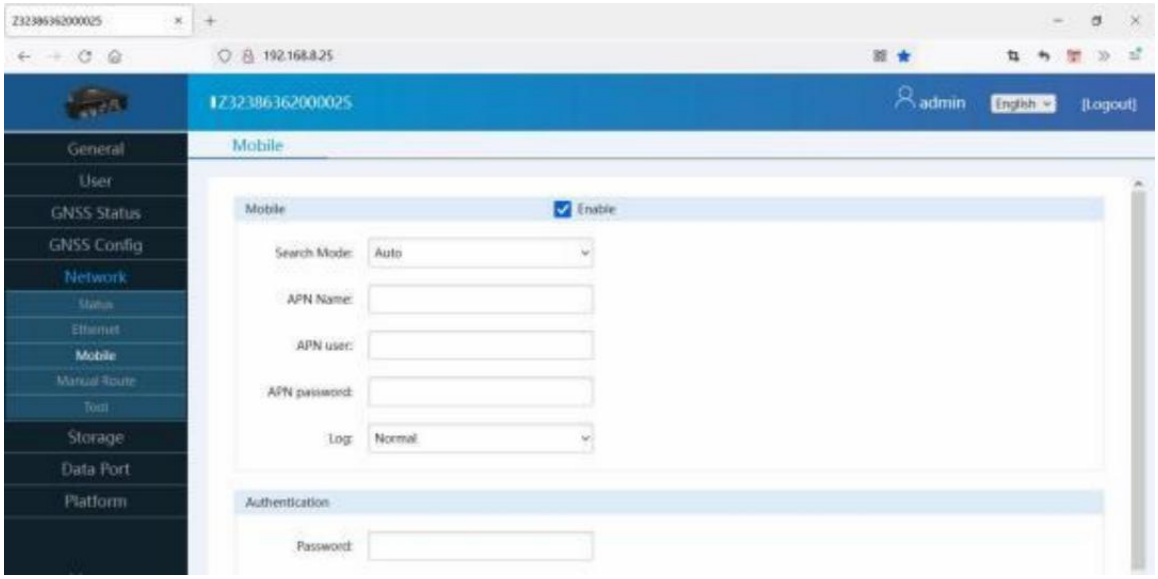


static mode

3.5.3 Mobile

Used to set the APN parameter settings in the mobile network mode (mobile phone card to access the Internet). As shown below:

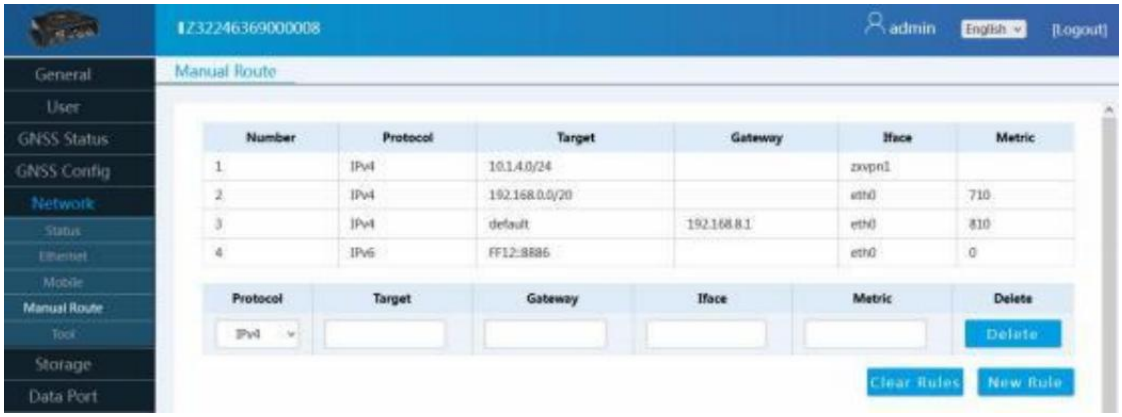
Note: some 4G cards are private network cards, this card needs to fill in the APN Name, APN password can surfthe Internet, if it is a common card, do not need to fill in.



3 Mobile

3.5.4 Manual Route

Used to configure protocols, targets, gateways, etc., as shown below:

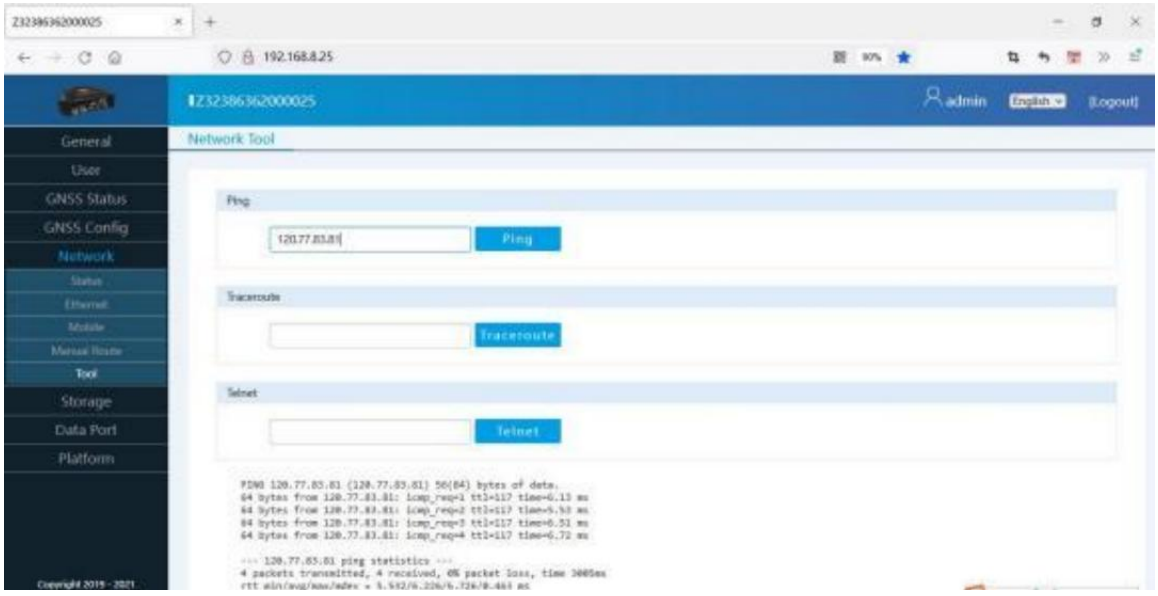


Manual Route

3.5.5 Tool

The device provides three network tools: Ping, Trcaeroute and Telnet, which are used to test the network connection status ofthe device online, as shown below:

When you find that you cannot get the data from the server or cannot send the data to the server, you can use the ping function, fill in the server IP, click on the ping, and see ifping the server is successful.

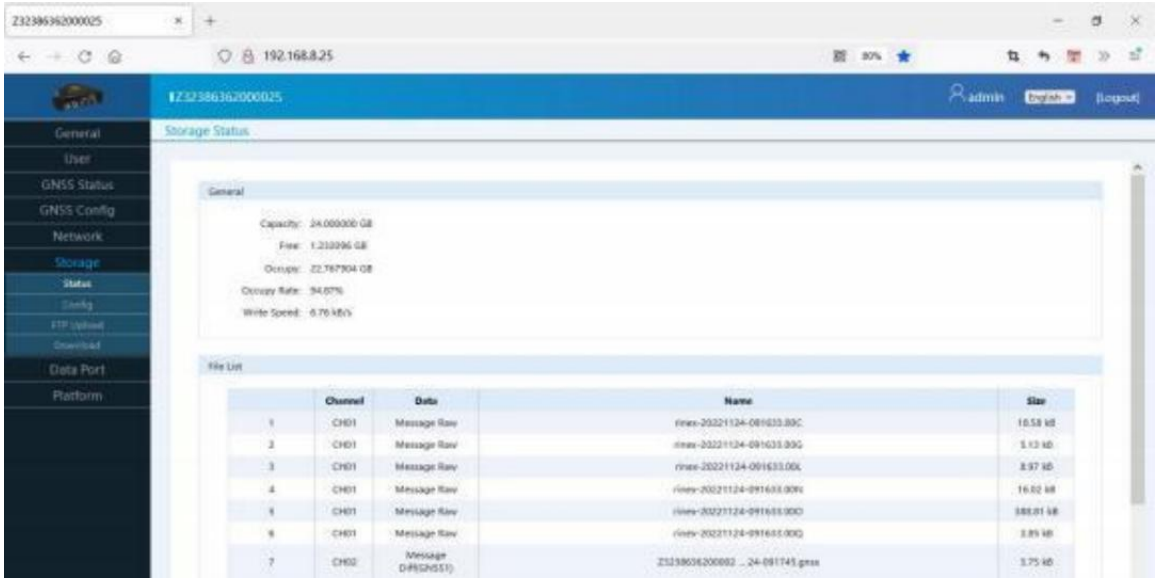


Tool

3.6 Storage

3.6.1 Status

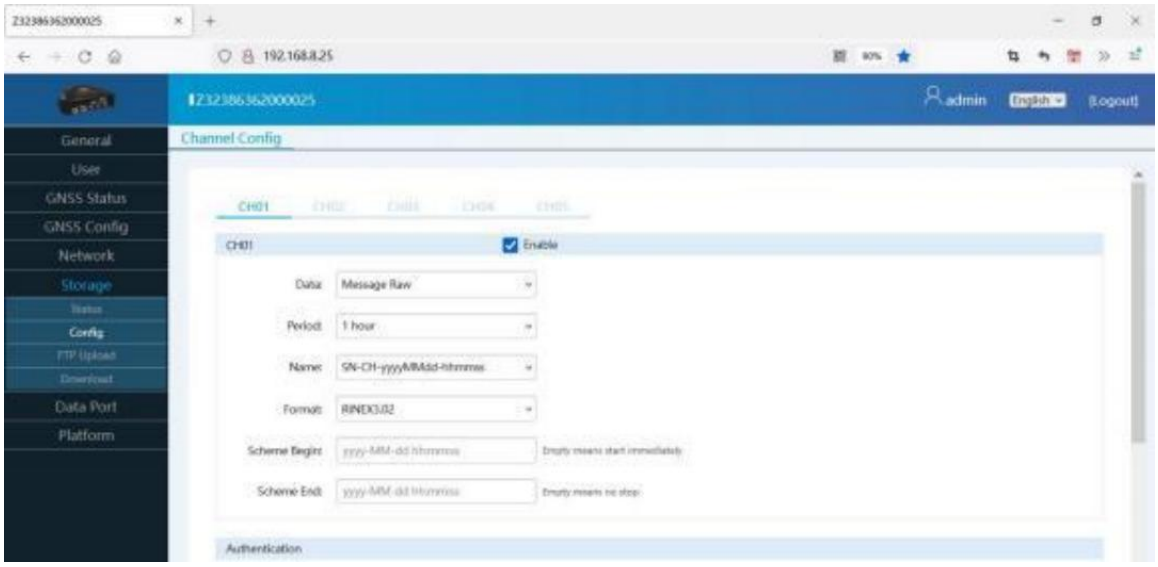
Displays the overall storage status ofthe device, the files currently being stored, and the writing speed, as shown below:



Status

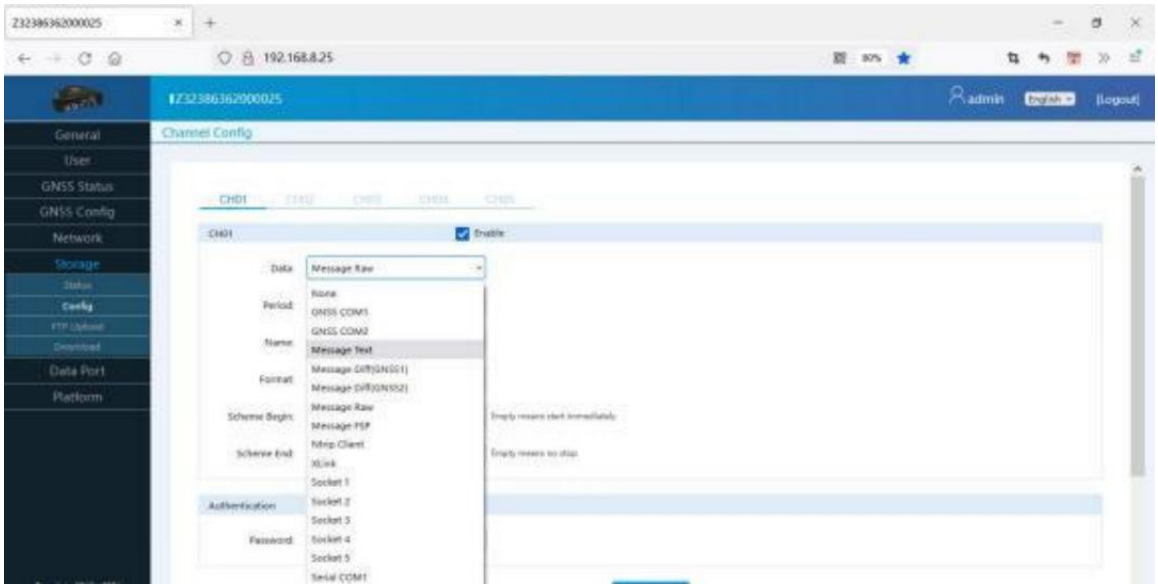
3.6.2 Config

It is used to configure the storage type, format and duration of data. The device provides 5 storage channels for users to set. The duration of data stored in a single file is 1 day (in natural days), and it can also be stored according to a time plan. If configured If it is not empty, it is considered to be stored in the whole time period by default.After you configure the stored data, you can see ifthe data is being stored in subsection 3.6.1.



Config

Select the type of data that will be stored:



Data

File name naming rules :

1.The time in file name is converted from GPS time directly.

Assume GPS leap second is 18, Time Zone offset is +08:00, Then 00:00:18 means 08:00:00 of local lime.

2.Key words in file name

yyyy => year

MM	=> month， 01~ 12
dd	=> day， 01~31
hh	=> hour， 00~23
mm	=> minute， 00~59
ss	=> second， 00~59
DOY	=> day ofyear， 000~366
X	=> hour, a~x, 0 when one file per day
SN	=> SN
SITE	=> Marker Name
SSSS	=> Marker Number

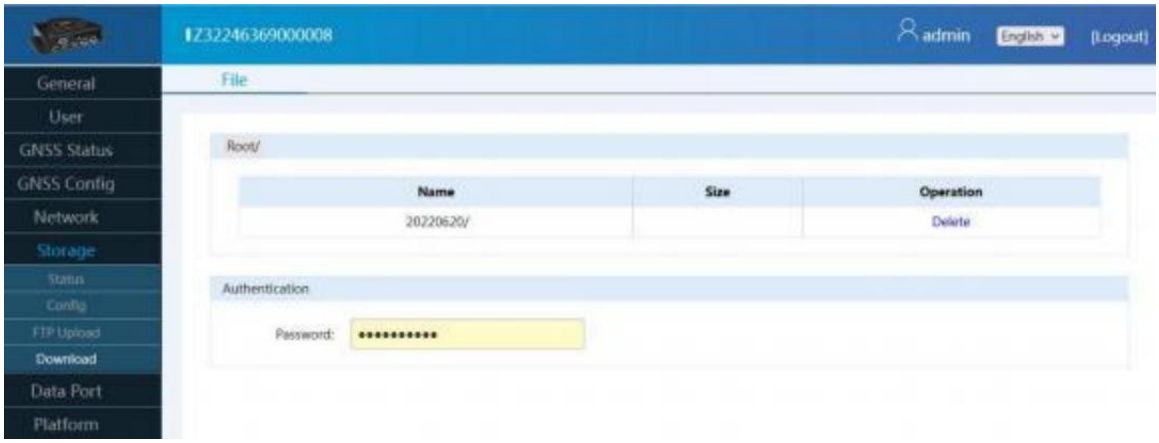
3.6.3 FTP Upload

The device provides FTP remote storage function for 5 storage channels. The running user stores the corresponding channel data to the remote device through FTP, as shown below: (Note: Not real-time uploading, uploading will only be performed after the corresponding channel file recording is completed)

FTP Upload

3.6.4 Download

Enter the file download page, the first page displays the folder named by the date, click the folder to enter the folder named after the storage channel, click the corresponding channel, the data stored in the corresponding channel, click the download interface, download the corresponding channel file, as shown below:

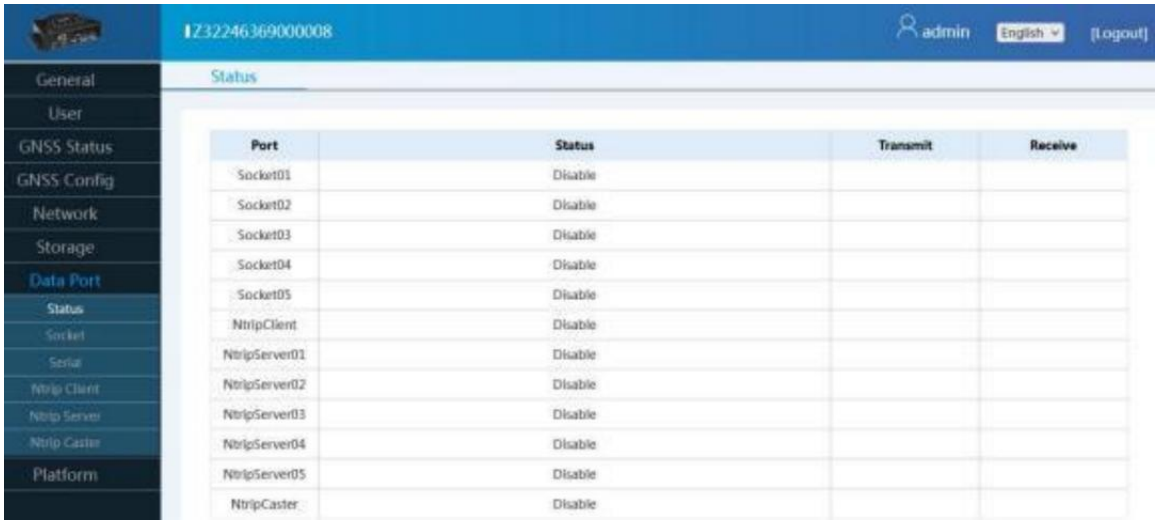


Download

3.7 Data Port

3.7.1 Status

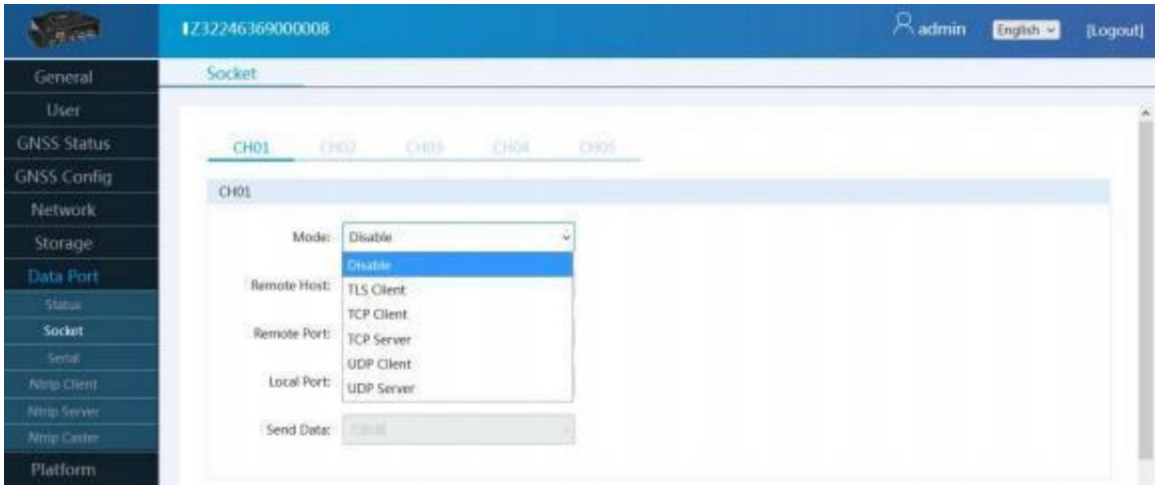
It is used to view the status information of each port of the device, as shown below:



Status

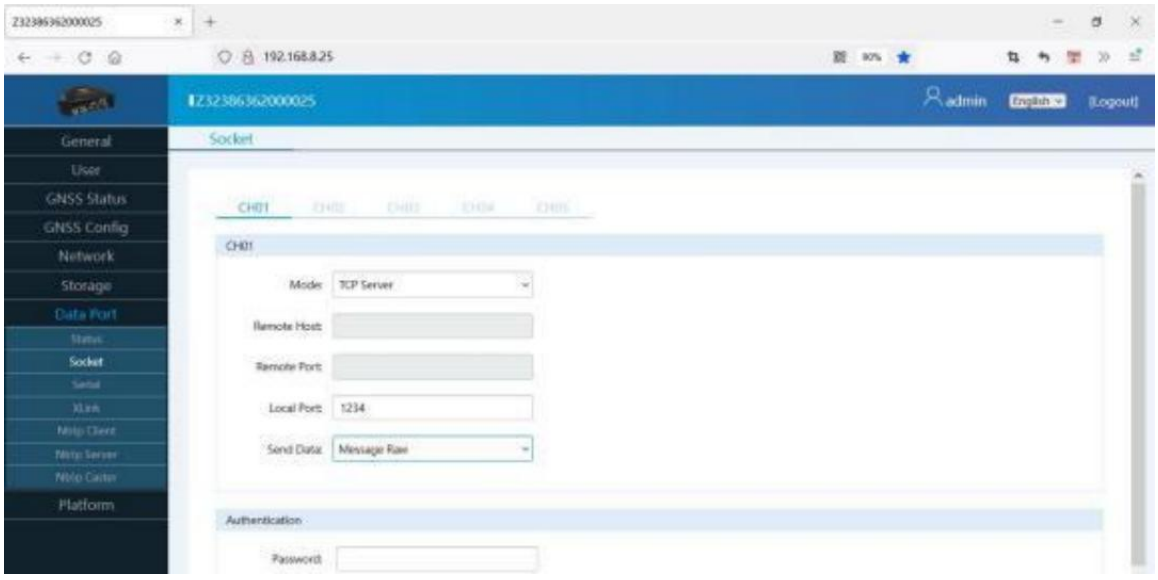
3.7.2 Socket

The device provides 5-way network connections (supports TCP, UDP server and client modes), as shown below:



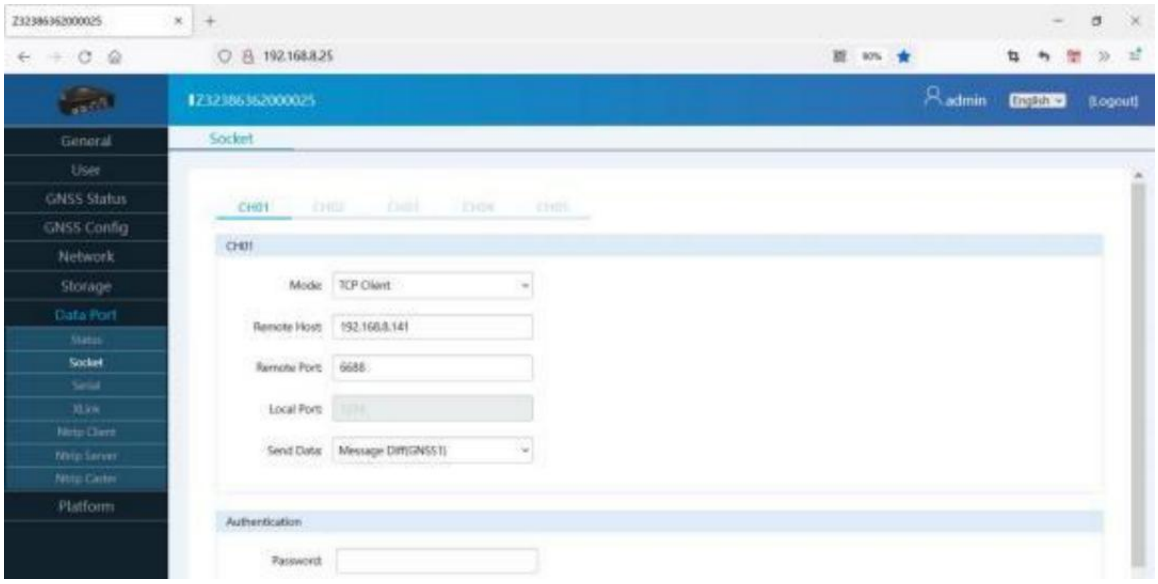
Socket

For example, S66UGH-lite is used as the base station. When using TCP to transmit data, the TCP server should be selected, as shown below:



Base Station - TCP Server

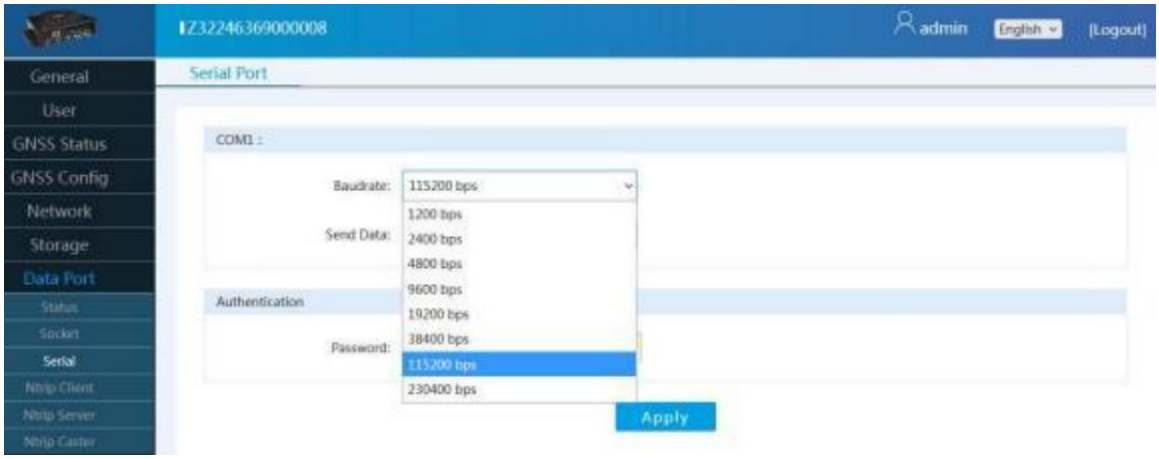
For example, S66UGH-lite is used as a rover station. When using TCP to receive data, a TCP client should be selected, as shown below:

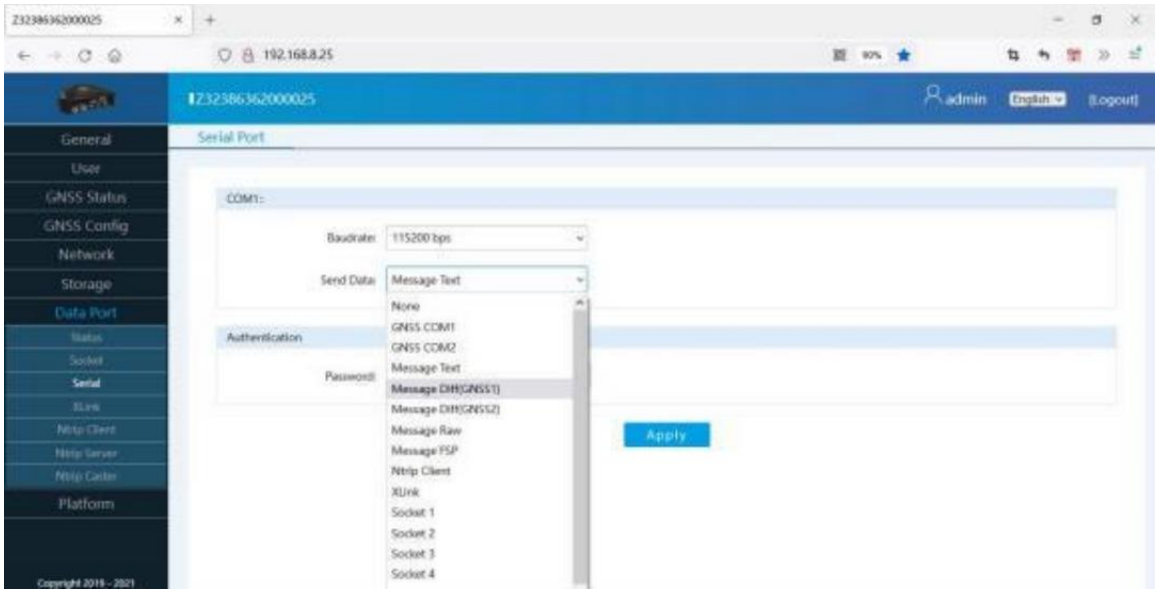


Rover - TCP Client

3.7.3 Serial

The device provides external serial communication function. The baud rate of COM1 and COM2 can support the minimum 1200bps and the maximum support 921600bps, as shown below:

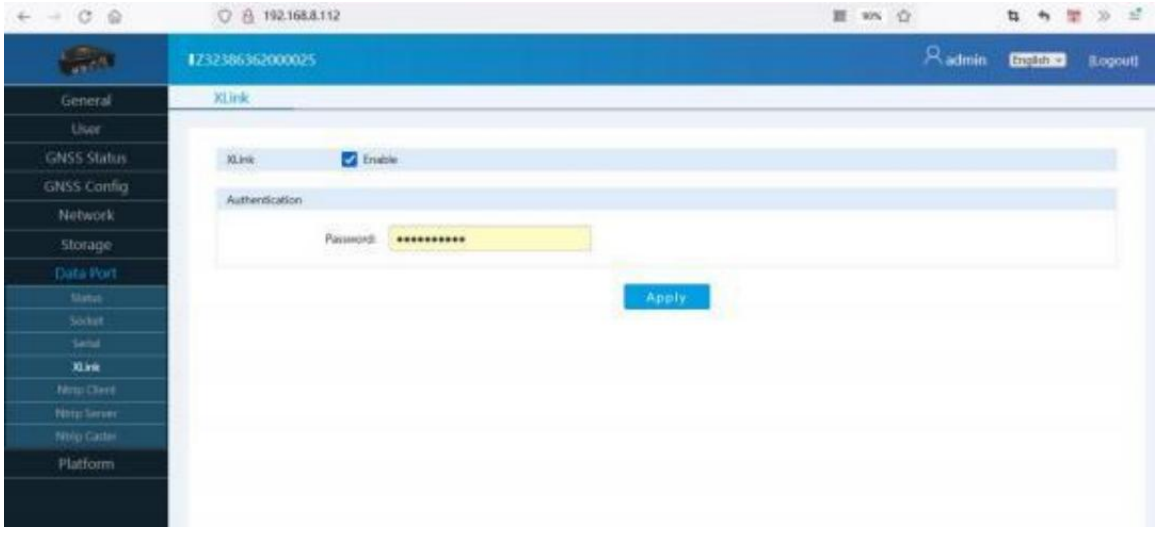




Serial

3.7.4 Xlink

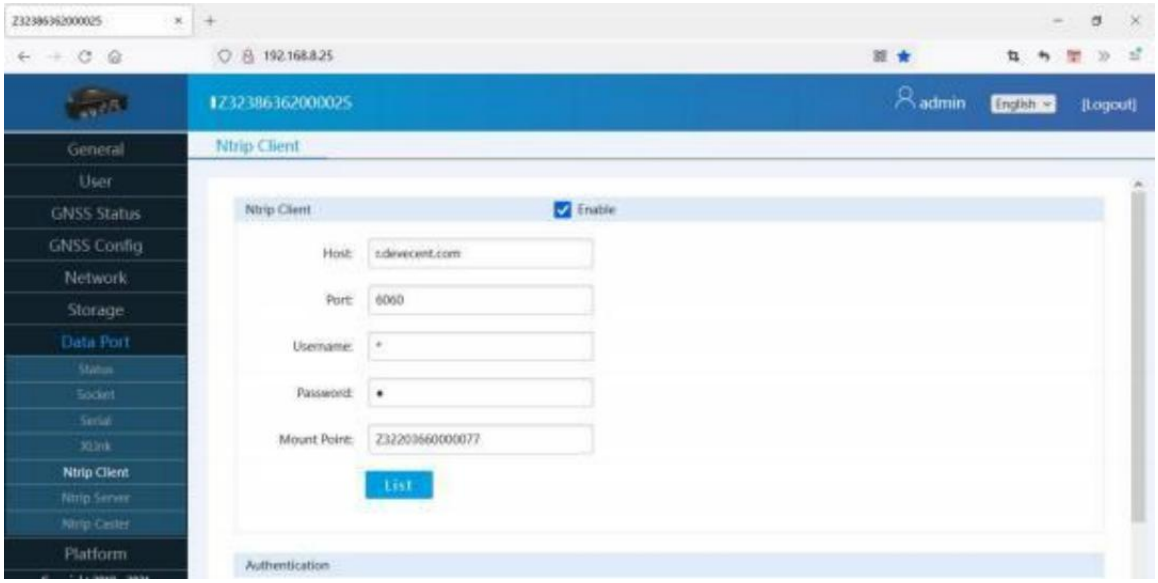
XLink is a differential forwarding system built by us for the CORS network used in China. If this function is enabled, the host only needs to connect to the Internet, it can directly reach the fixed state without filling in the CORS account.



Serial

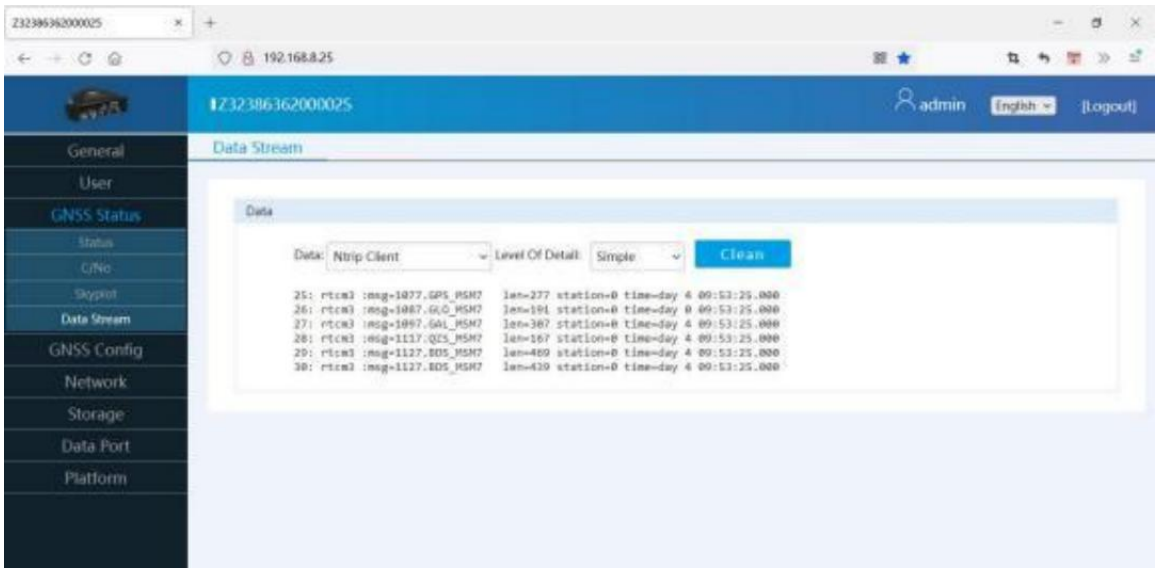
3.7.5 Ntrip Client

The parameter configuration when the device is used as the Ntrip Client is used for the device to obtain the difference from the server, as shown below:



Ntrip Client

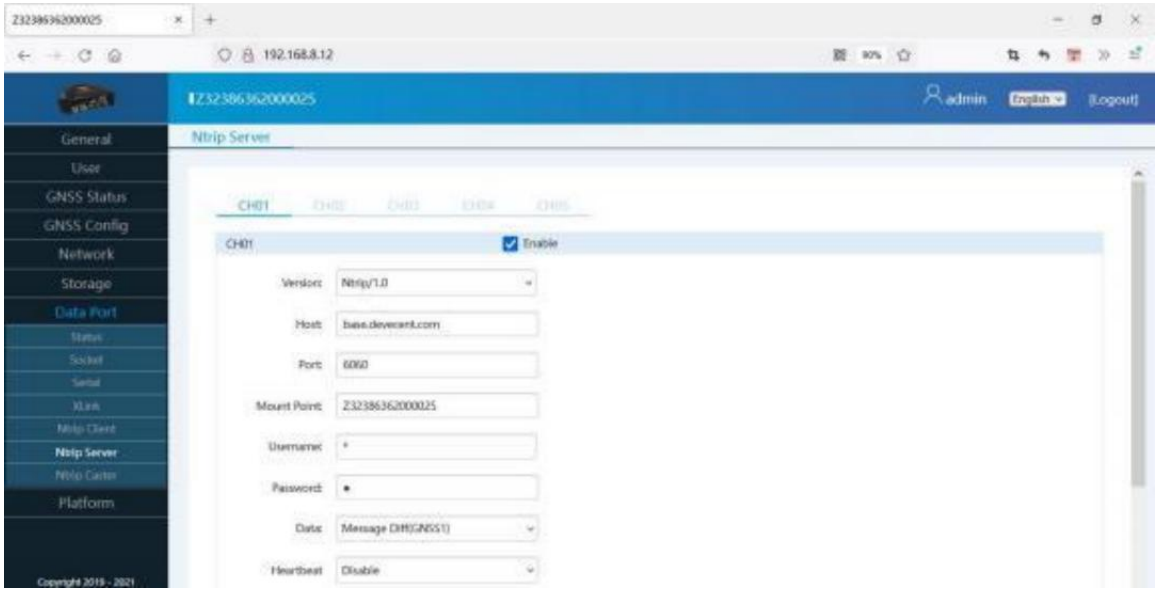
After filling in the CORS account, go to the Data Stream page to see whether the differential data is received.



Data Stream

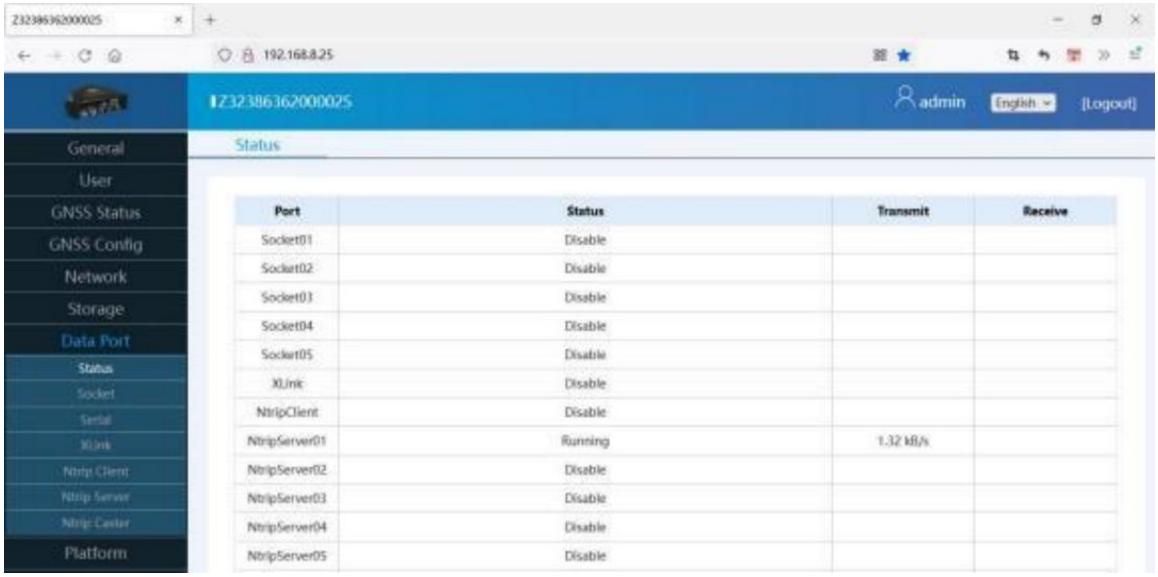
3.7.6 Ntrip Server

The parameter configuration when the device is used as the Ntrip Server is used for the device to send data to the server, as shown below:



Ntrip Server

After filling in the parameters of the upload difference score to the server, go to the status page to see whether the data is sent normally.



Status

3.7.7 Ntrip Caster

The parameter configuration when the device is used as the Ntrip distributor. It is used for the device to provide data externally as Ntrip Caster. If other devices or clients want to use the device Caster service, the corresponding user must have the NtripCaster permission, as shown below:

Ntrip Caster

3.8 Platform

3.8.1 ZXVPN

ZXVPN can provide a virtual local area network, connect the receiver to the server, and perform WebUI access in the background to provide corresponding remote technical support and services.

Make sure that the device is connected to network , select [Enable], fill in the following VPN configuration information, and click [Apply].

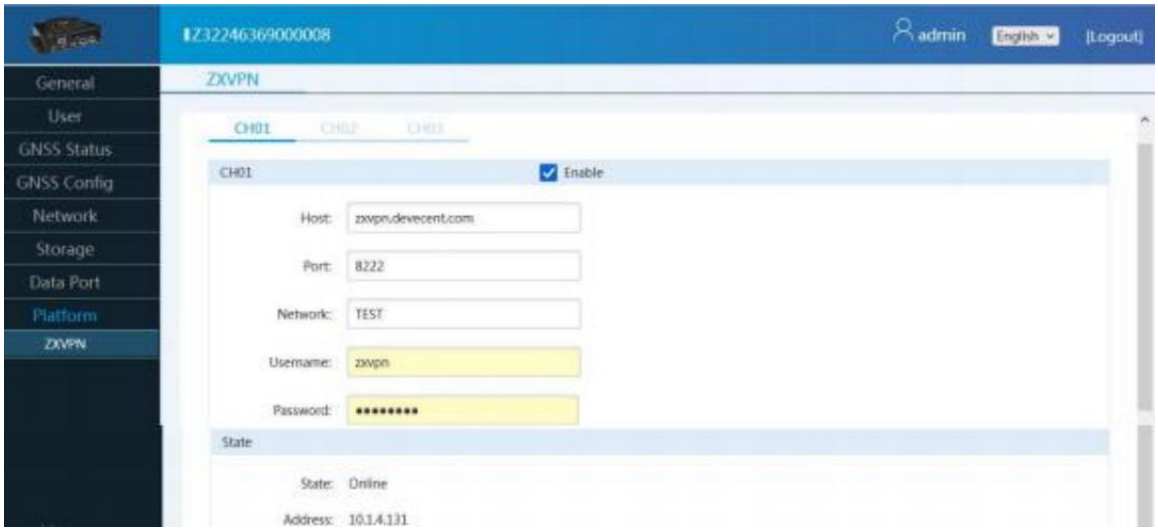
Host: zxvpn.devecent.com

Port: 8222

Network: TEST

User: zxvpn

Password: zxvpn



ZXVPN

Note: After the configuration as shown above is completed, please confirm that the state is online and IP at the bottom ofthe WebUI

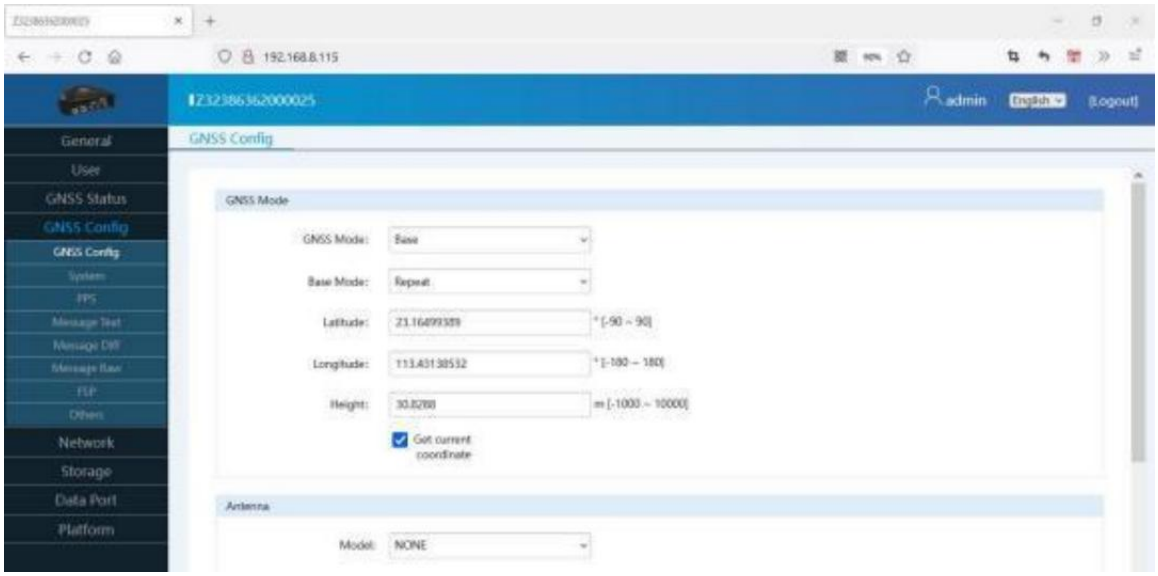
4. Configuration examples

In order to make it easier for users to understand the use and configuration of the S66UGH-lite receiver, we have specially selected four commonly used working modes as an example to illustrate the corresponding configuration mode and process.

4.1 Example 1

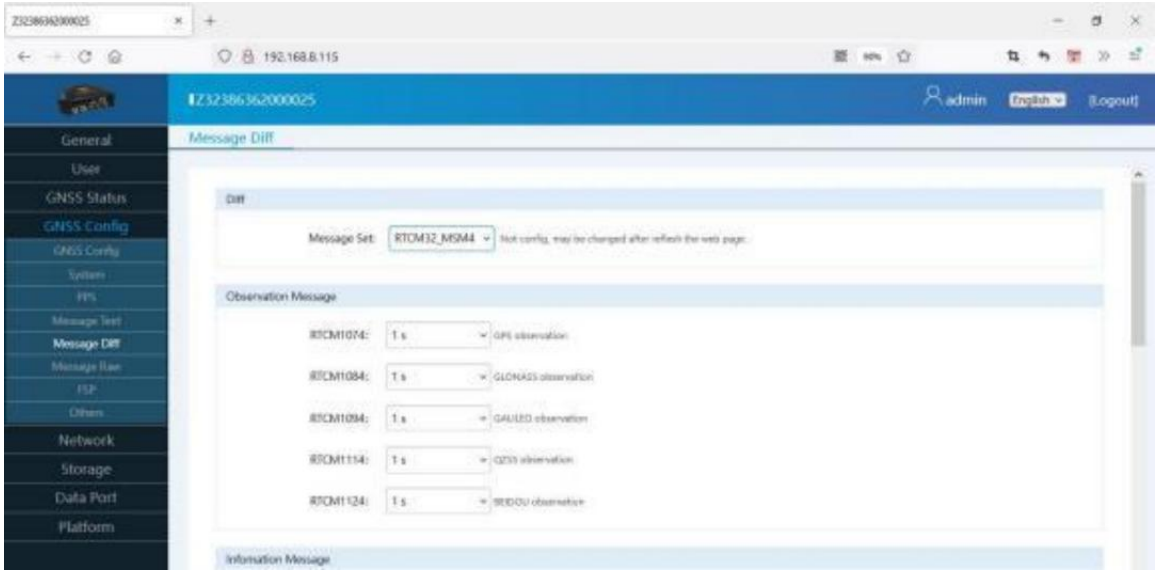
The receiver acts as thebase station, starts with fixed coordinates, the differential output is RTCM33, and TCP1 acts as the server, sends the RTCM33 difference, the raw data is output in 1 second, and stores the raw data in rinex3.02 format, configured as follows:

1.Set the receiver as the base station and start with fixed coordinates, as follows:



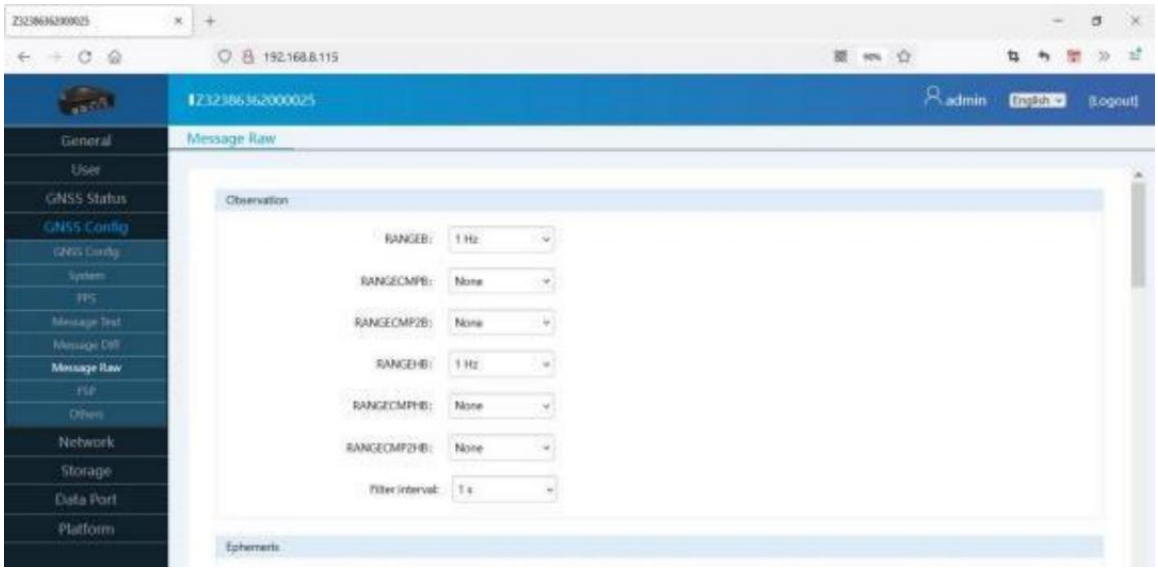
Allocation of thebase station

2.Set the differential output to RTCM33, displayed as follows:



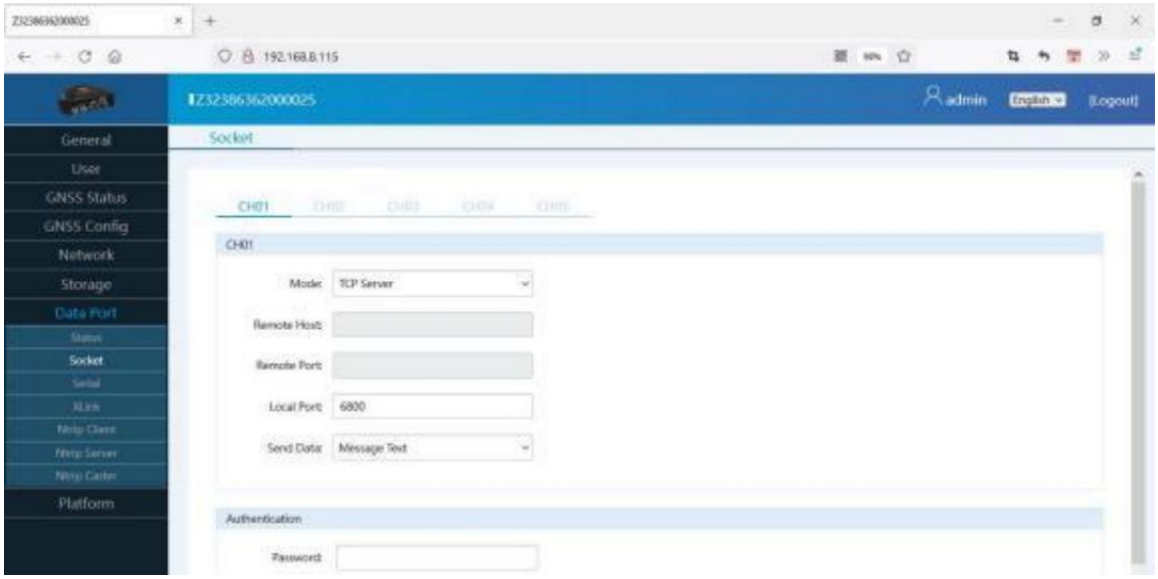
Differential Output configuration

3.Set the raw data output for 1 second, displayed as follows:



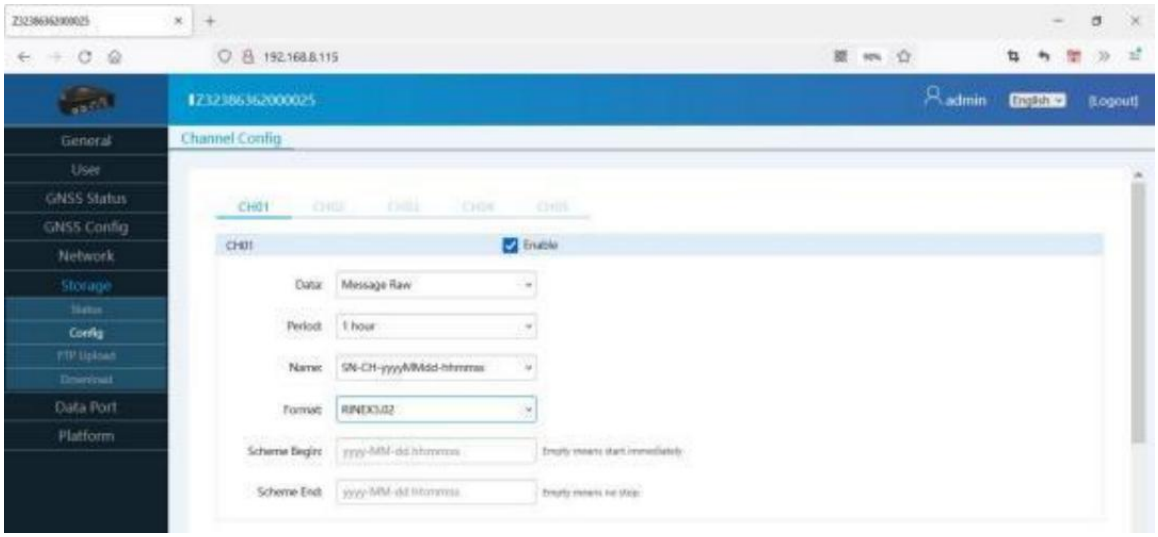
Original output configuration

4.Set TCP Connection 1 as a server, and the data source selects location differential data, displayed as follows:



Network Connection Configuration

5.Set up the storage raw data in rinex3.02 format, displayed as follows:

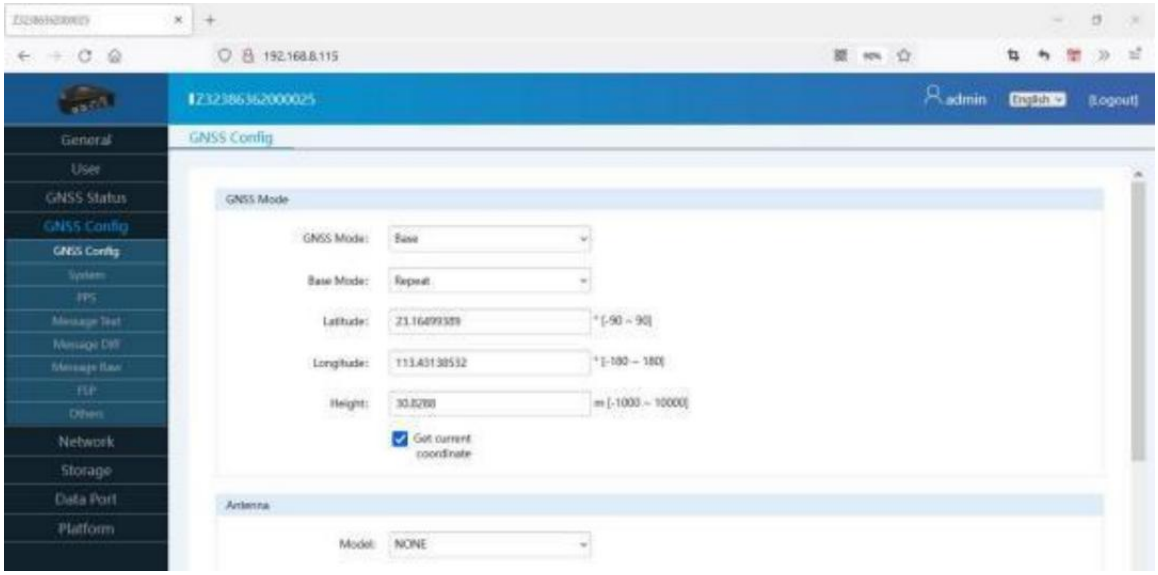


Storage configuration

4.2 Example 2

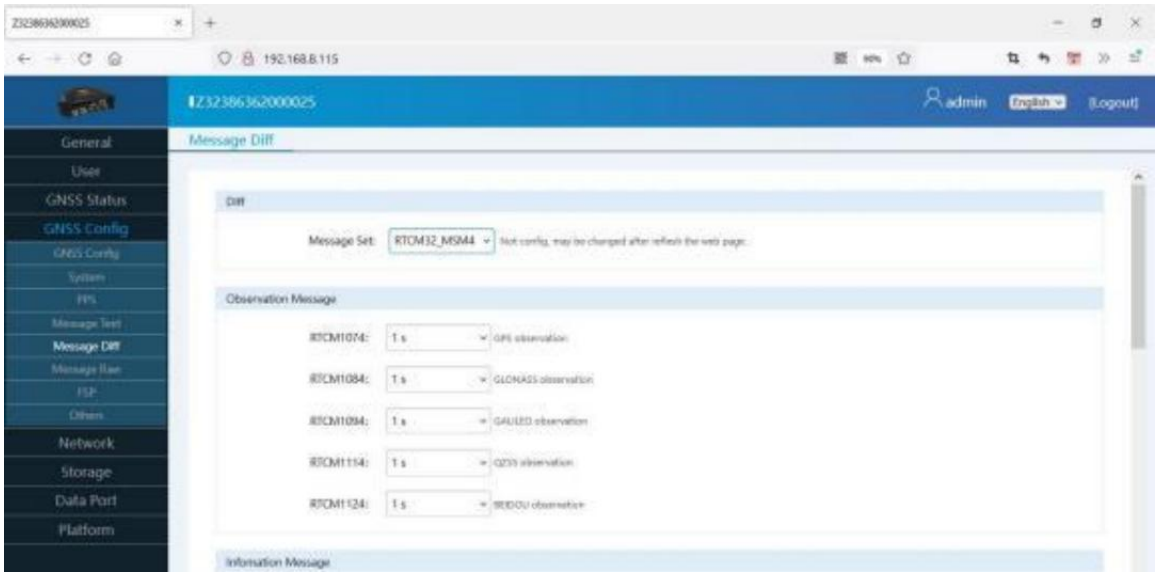
The receiver acts as the base station, starts with fixed coordinates, differential output RTCM33, ntrip server1 transmits RTCM33 to a CORS server with 1.0 protocol, the raw data is output in 1 second, and stores the raw data in rinex3.02 format, configured as follows:

1.Set the receiver as the base station and start with fixed coordinates, as follows:



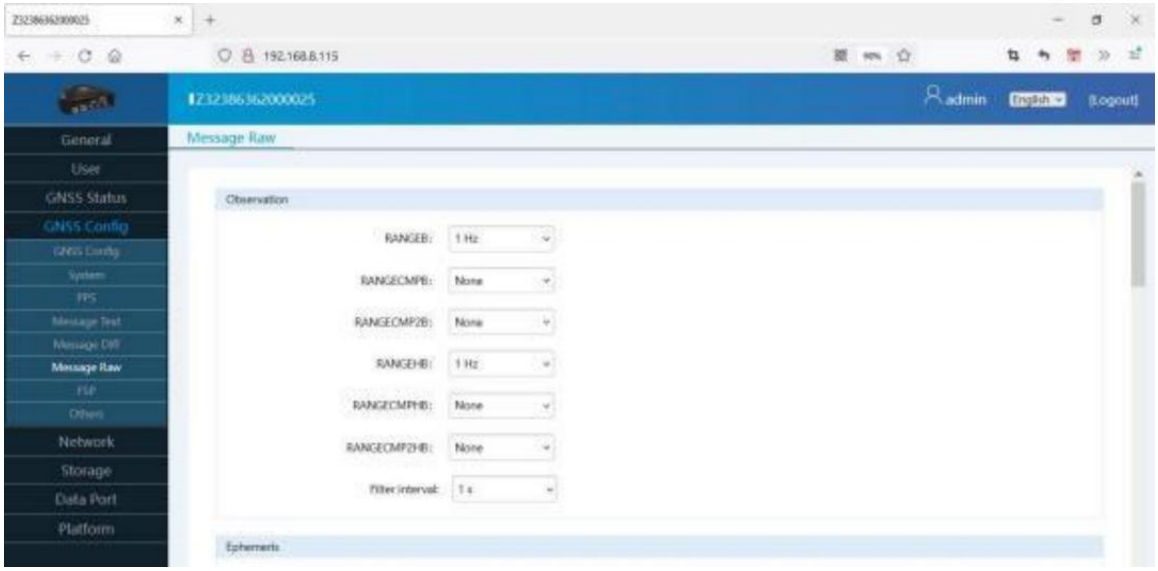
Allocation of thebase station

2.Set the differential output to RTCM33, displayed as follows:



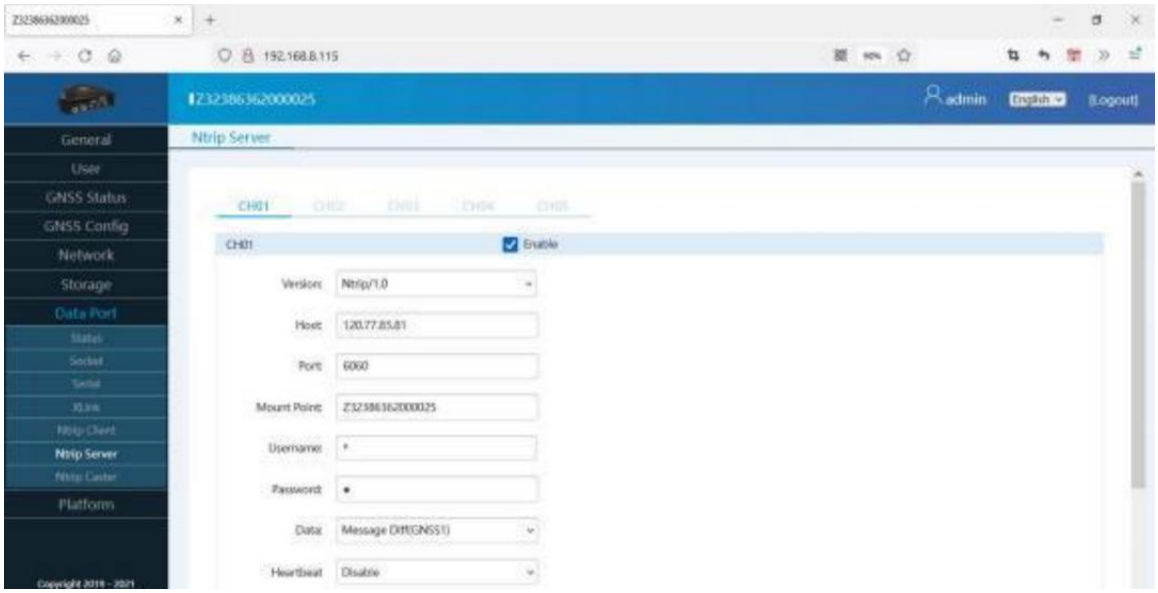
Differential output configuration

3.Set the raw data output for 1 second, displayed as follows:



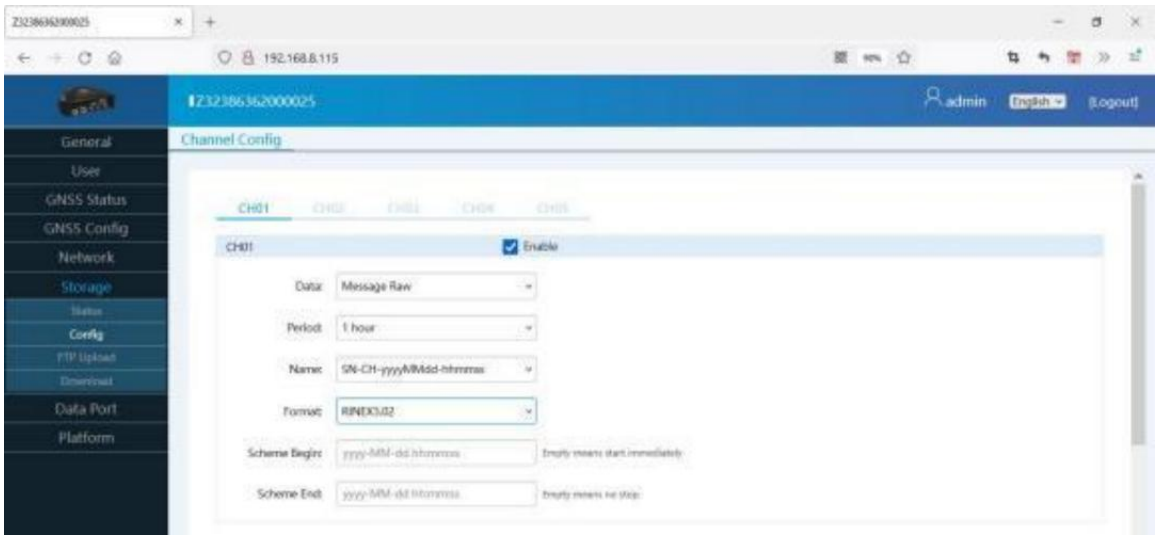
Original output configuration

4.Set ntrip server Connection 1 to transfer RTCM33 to a CORS server with Ntrip / 1.0 protocol, and the data source selection and location differential data, displayed as follows:



NtripServer configuration

5.Set up the storage raw data in rinex3.02 format, displayed as follows:

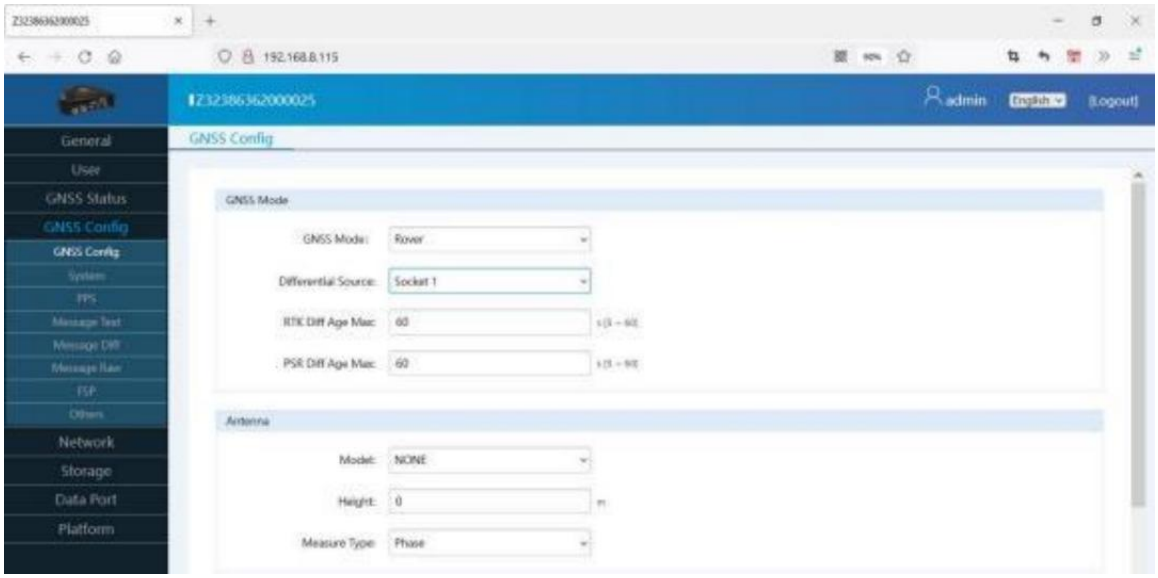


Storage configuration

4.3 Example 3

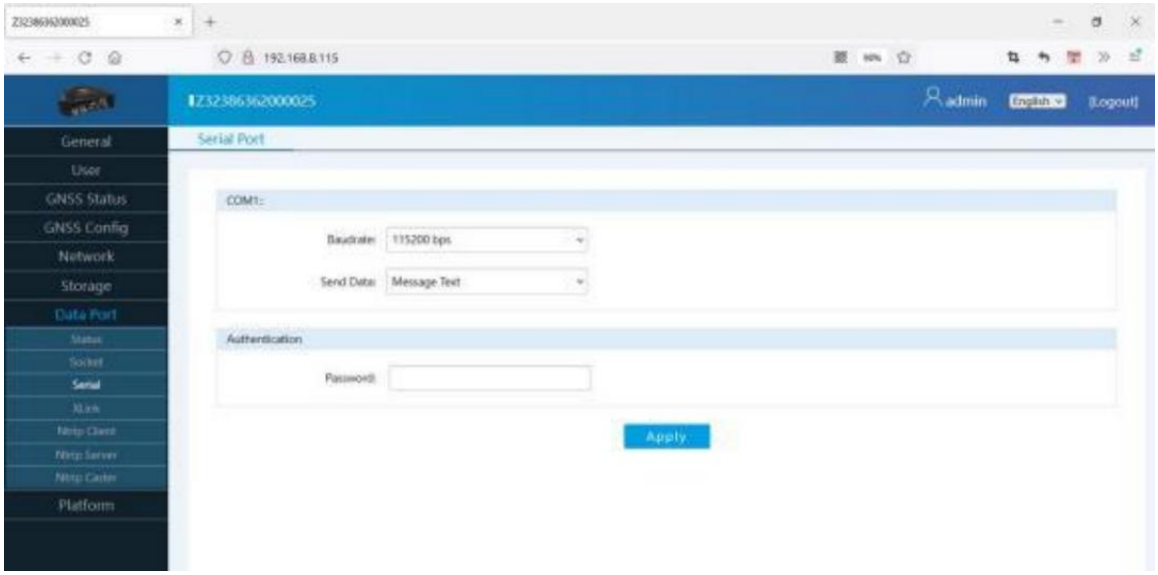
The receiver acts as the rover station, takes the TCP connection 1 as the client difference source, and the COM port outputs GPGGA and BESTPOSA, configured as follows:

1.Set the receiver as a rover station and select connection 1 as the differential source ofthe rover station, displayed as follows:



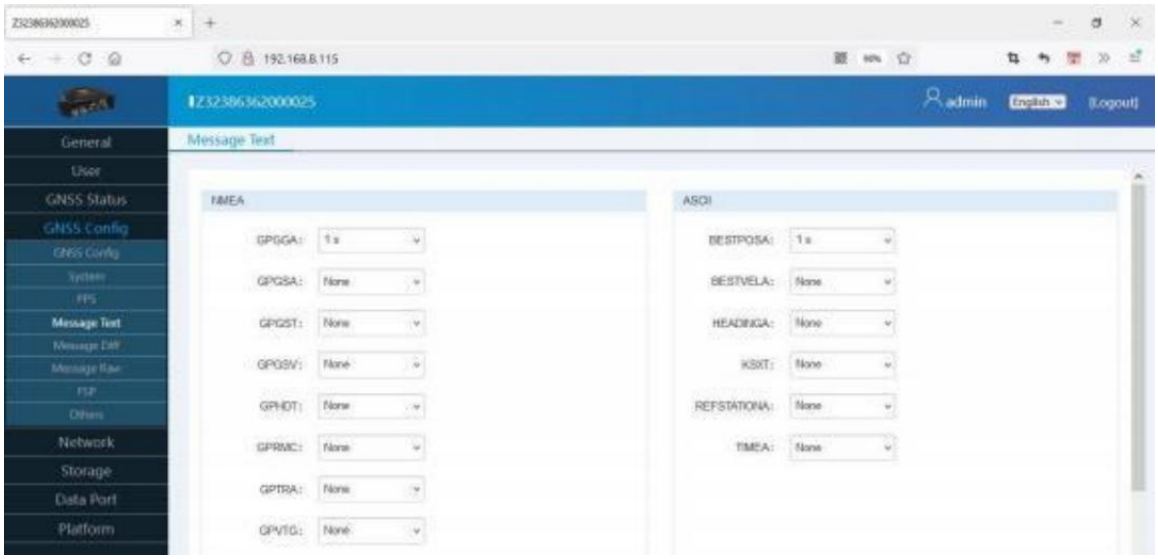
rover station Configuration

2.Set the serial port COM1 output positioning text data, displayed as follows:



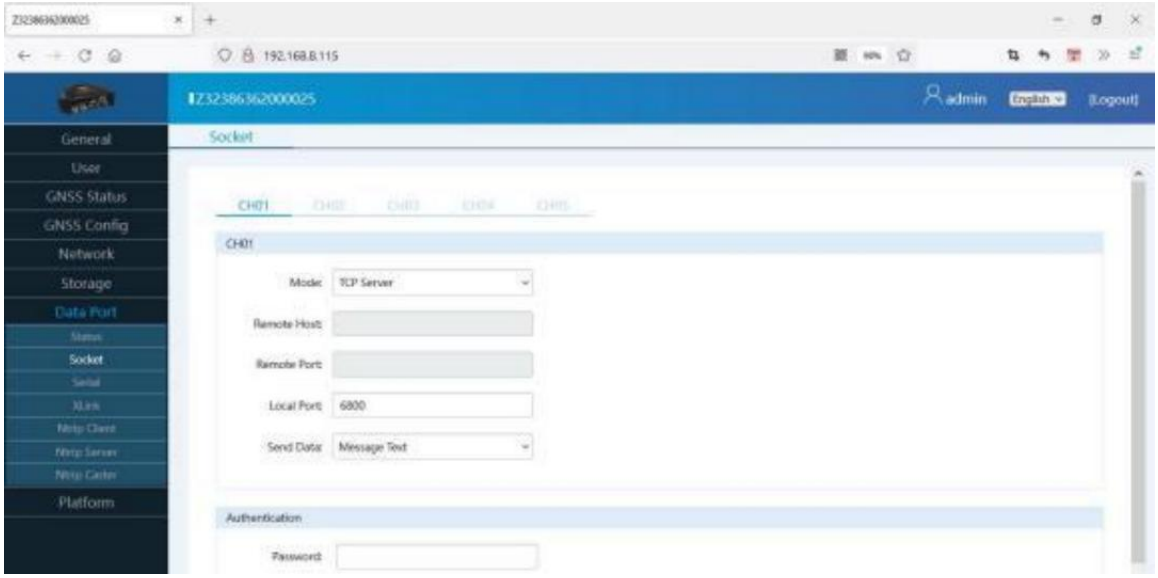
Serial port configuration

3.Set the output frequency of text output GPGGA and BESTPOSA, displayed as follows:



Text output configuration

4.The network connection CH01 is set as the receiving difference of the TCP client, as shown as follows:

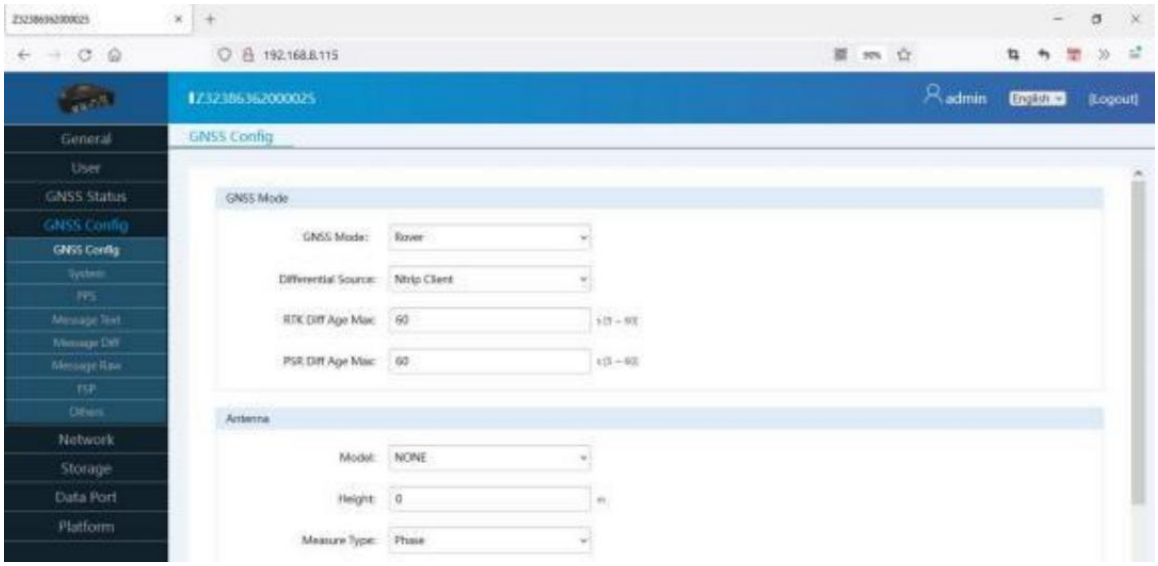


Network Connection Configuration

4.4 Example 4

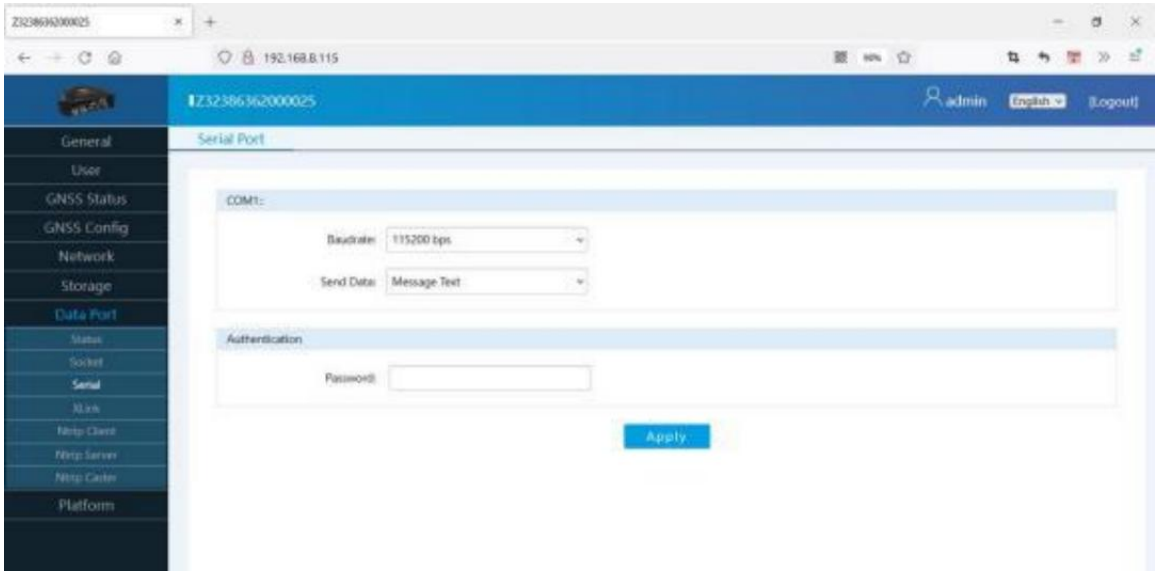
The receiver acts as the rover station, with ntrip client as the differential source, and the COM port outputs GPGGA and BESTPOSA, configured as follows:

1.Set the receiver as a rover station, input the differential source to select ntrip client, display as follows:



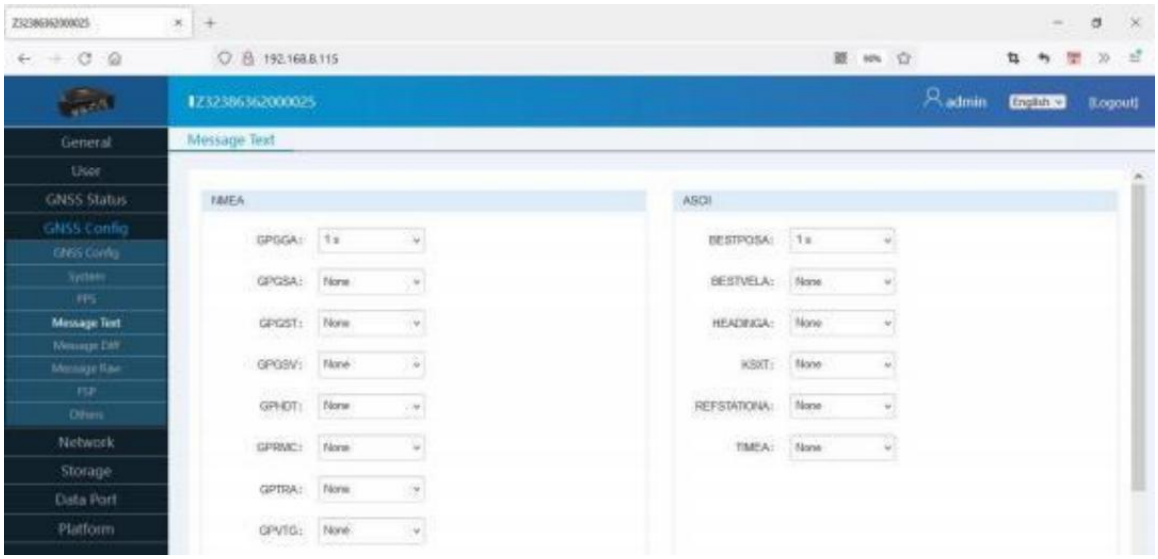
rover station configuration

2.Set the serial port COM1 to send location text data, displayed as follows:



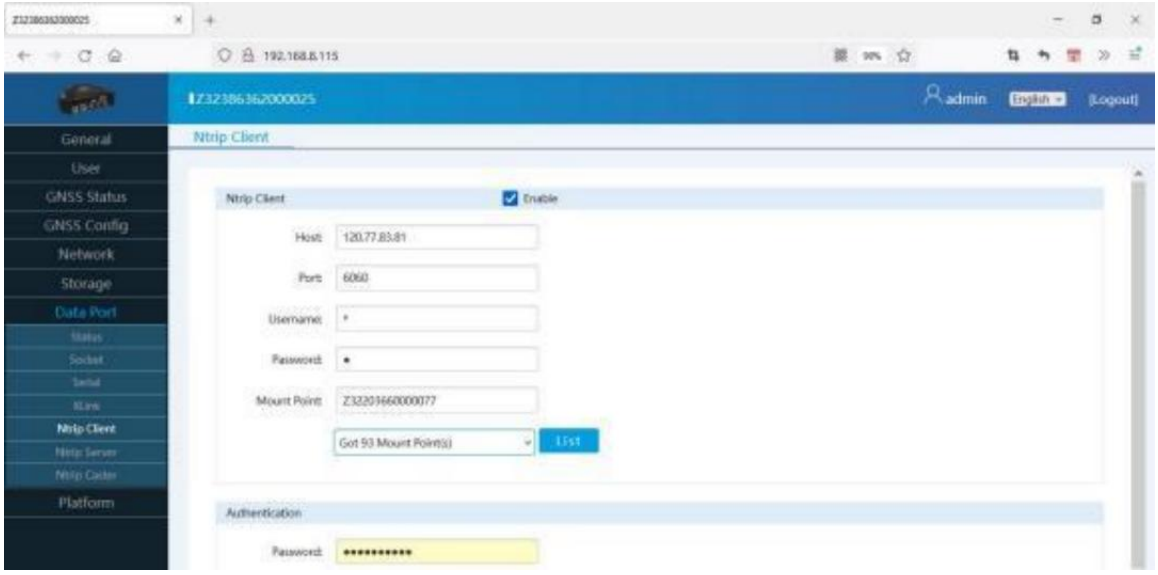
Serial port configuration

3.Set the output frequency of text output GPGGA and BESTPOSA, displayed as follows:



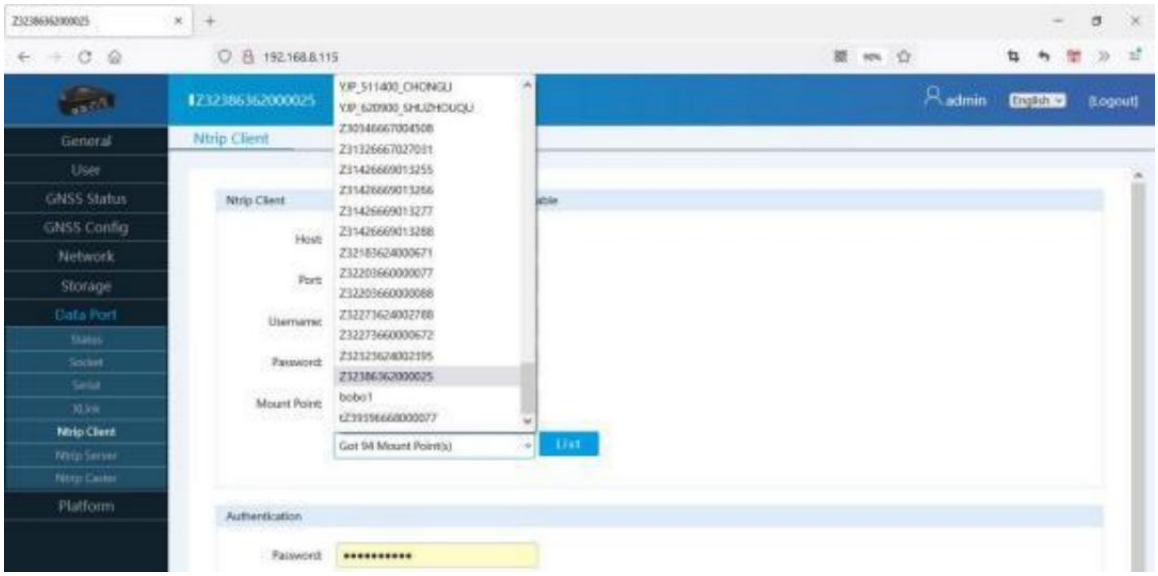
Text output configuration

4.Set ntrip client to get differential data from a CORS server as follows:



NtripClient configuration

5.Get the access point, select the access point uploaded to the server, and click the application to take the differential data from the server, displayed as follows:



NtripClient configuration