User Manual

Version V1.1-20201123

User Manual
For Tersus GeoCaster
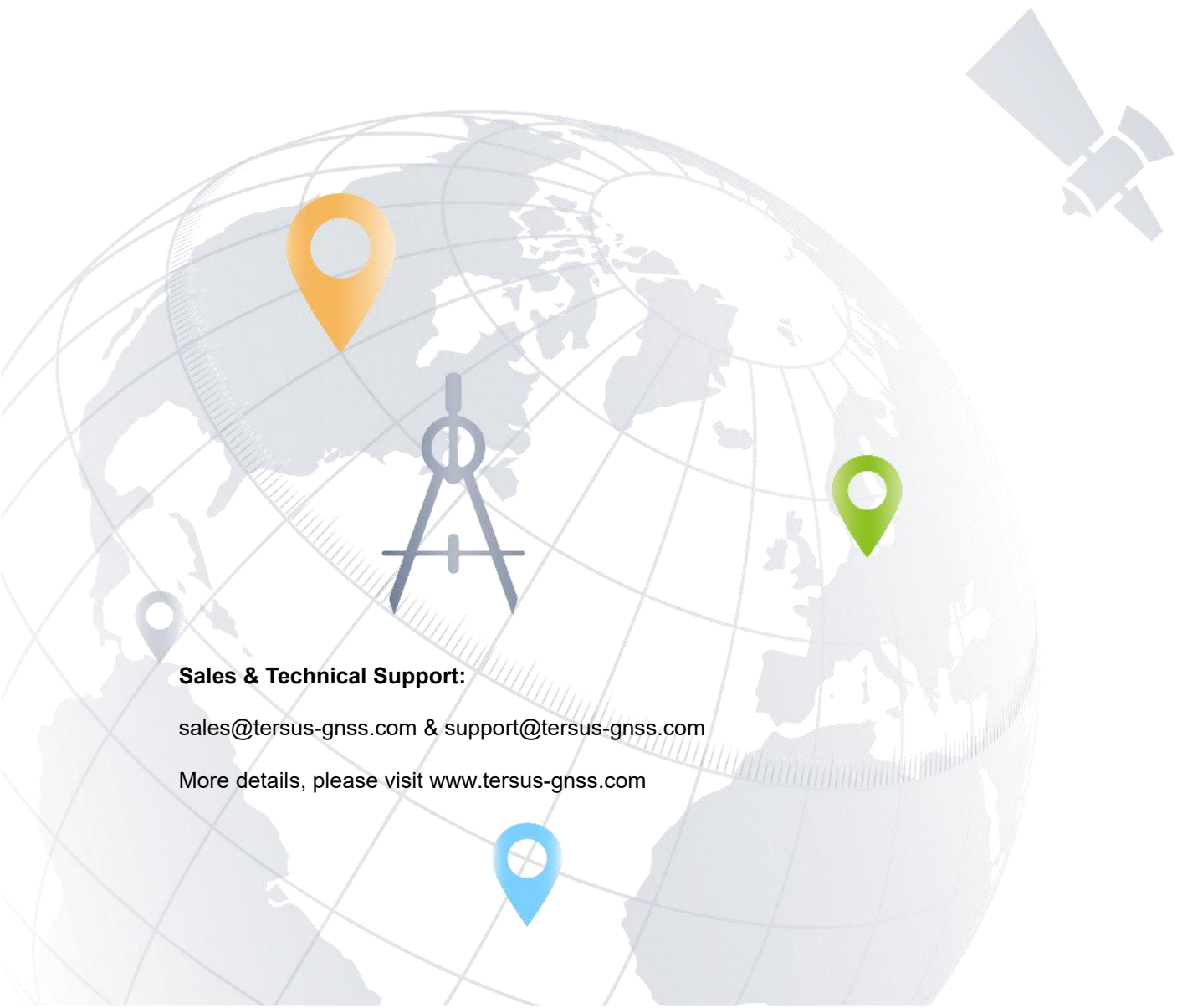
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Revision History

Revision	Description	Date	Owner
1.0	Initial Release	2019/1/31	LC
1.1	Added chapter 3 web query and management.	2020/11/23	LC

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1. Introduction

This chapter introduces the brief introduction, system requirements, installation, activation, and main interface.

1.1   Brief Introduction

The Tersus GeoCaster is a Networked Transport of RTCM via Internet Protocol (NTRIP) Caster software which allows GNSS correction data such as RTCM corrections to be repeated and sent to different end users via internet.   It supports configurable bases online simultaneously and configurable rovers for one base. The end users involve in various areas including surveying, construction engineering, deformation monitoring, automated vehicle, precision agriculture, Unmanned Aerial Vehicle, machine control, robotics, and etc.

1.2   System Requirements

Tersus GeoCaster is to run on a wide range of different computer configurations. The systems requirements are listed as below:

Table 1 System Requirements for GeoCaster

Operating System	Microsoft Windows 7, 8, 10 (32-bit and 64-bit)	
Hardware	Minimum	Recommended
Processor	Intel Core i3	Intel Core i5
RAM	4GB	8GB
Hard disk	10GB	1TB
Graphics card	Direct X9 compatible integrated graphics	Direct X9 compatible 2GB discrete graphics
Internet Connection	Ability to originate both http and https (SSL) connections	

1.3　Installation File

Download the installation file from Tersus website

https://www.tersus-gnss.com/software or contact Tersus Technical Support by

email support@tersus-gnss.com to obtain the installation file.

1.4　Installation

Right click the installation file (with .exe extension) and choose 'Run as administrator', the installation process starts as below.
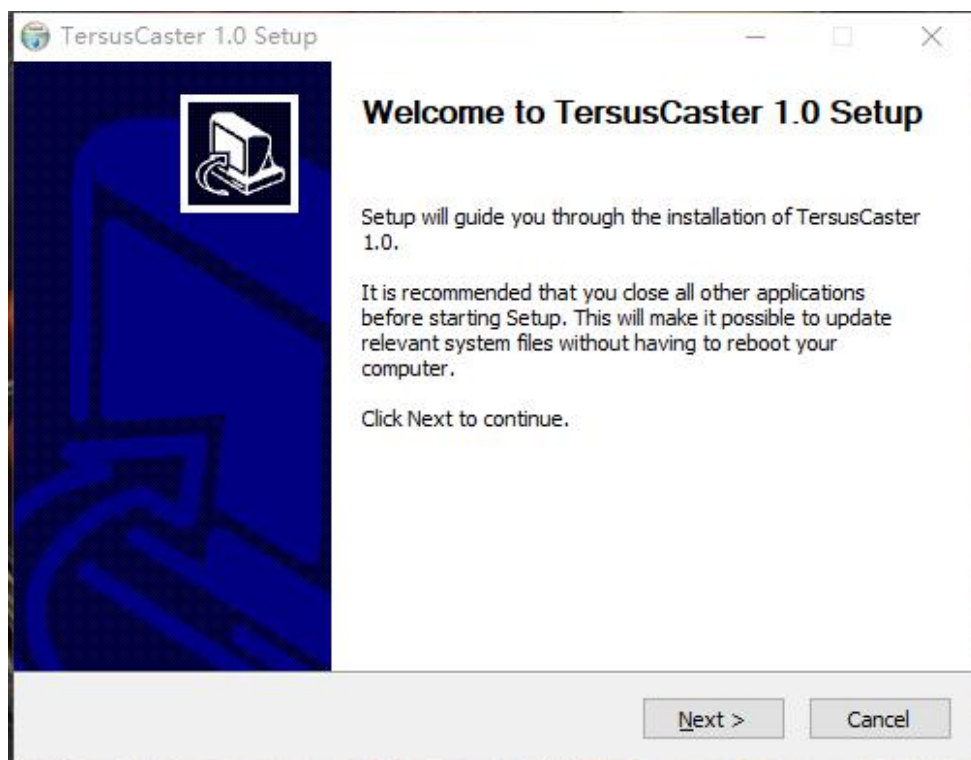

Figure 1.1 Start to install GeoCaster

Click [Next] to move to the next step.
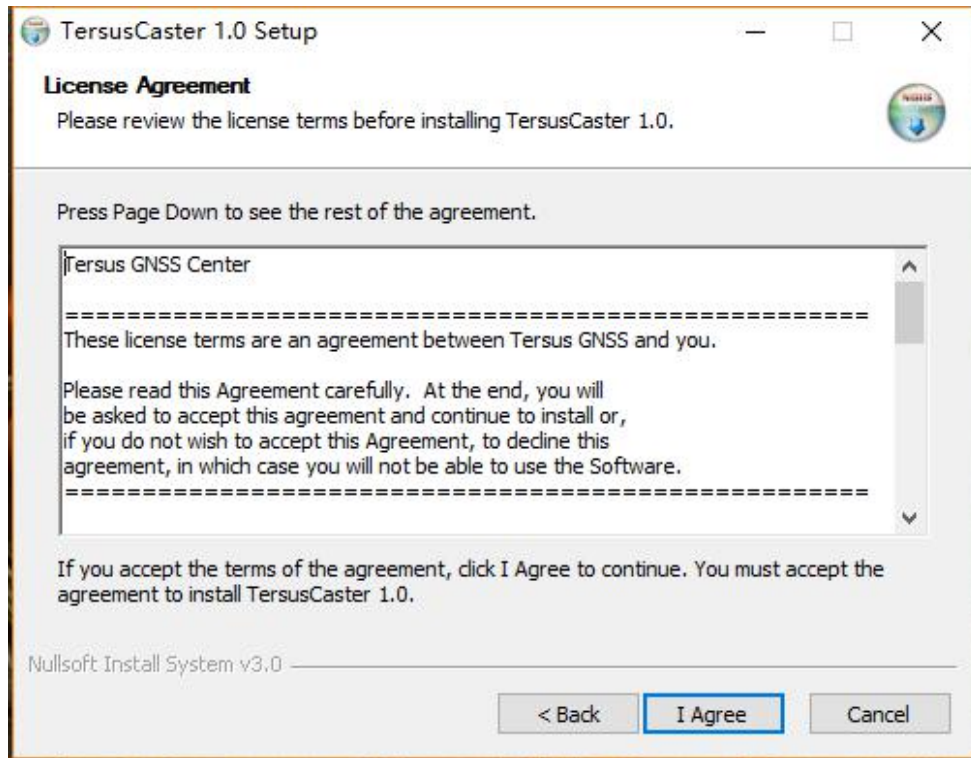
Figure 1.2 Read license agreement

Click [I Agree] to accept the agreement, and move to the next step.
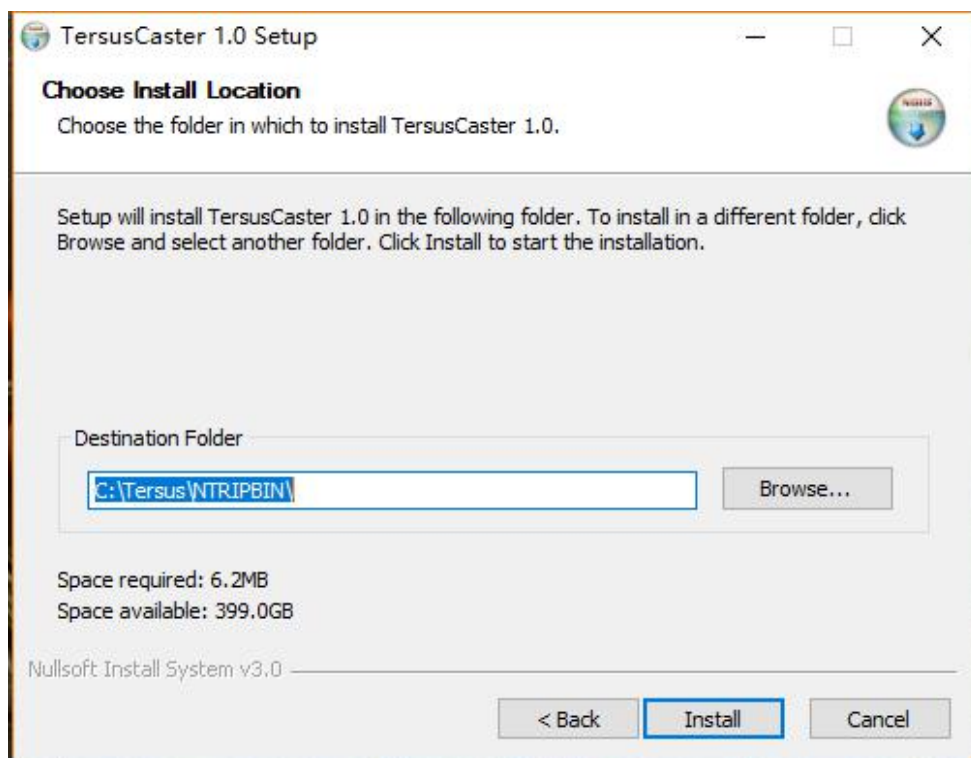
Figure 1.3 Choose install location

Browse the appropriate folder to install the software, click [Install] to start to install.
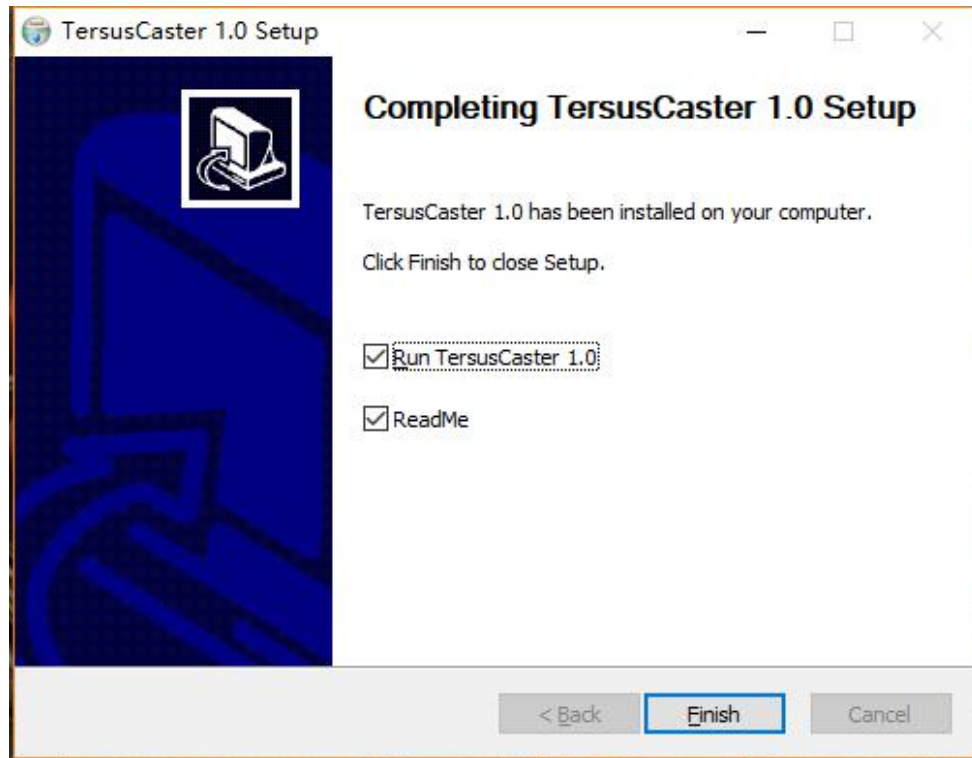
Figure 1.4 Finish the installation

After a few minutes, the installation is completed. Click [Finish] to finish the installation.

1.5   Activation

When first use the GeoCaster software, it should be activated by entering the activation code. To obtain the activation code, please send your machine sequence number to Tersus Technical Support by email support@tersus-gnss.com and a unique string will be returned for activation.
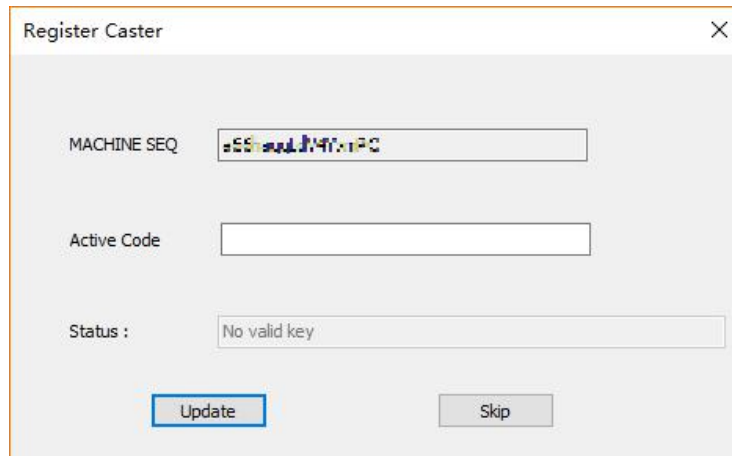
Figure 1.5 Register GeoCaster

If user clicks [Skip] in the above window, the software still cannot be opened and it pops out a warning window indicates that 'Please register software first'.
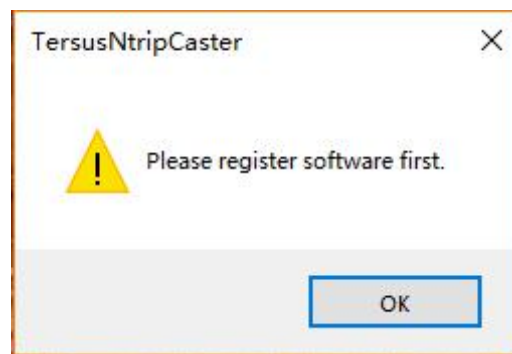
Figure 1.6 Register warning

1.6   Main interface

When the software is properly activated, it enters the watchdog and main interface which is shown below. Or double click the GeoCaster icon on the desktop to launch the software and enter the watchdog interface and the main interface.

The watchdog interface helps GeoCaster user to monitor caster status and set up SMS notification.
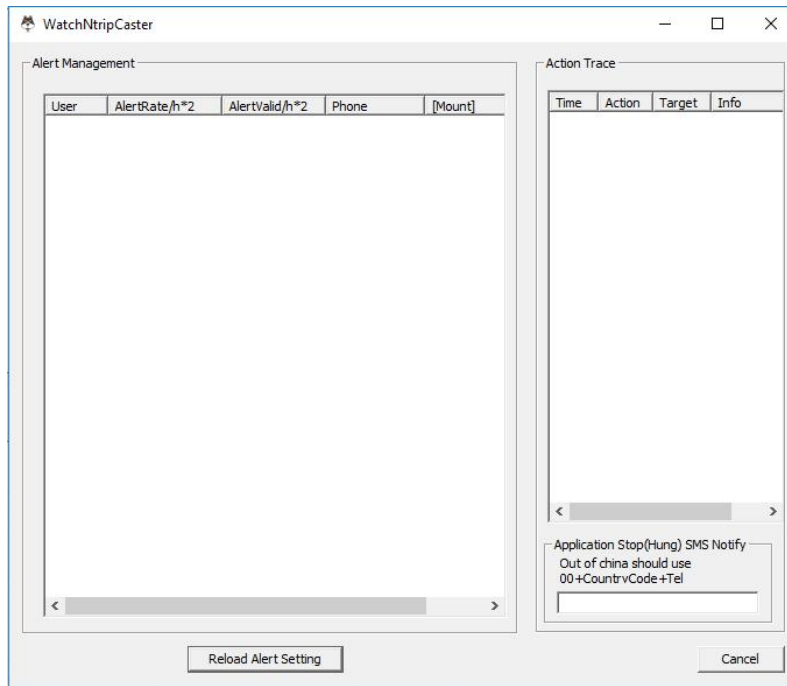
Figure 1.7 Watchdog interface
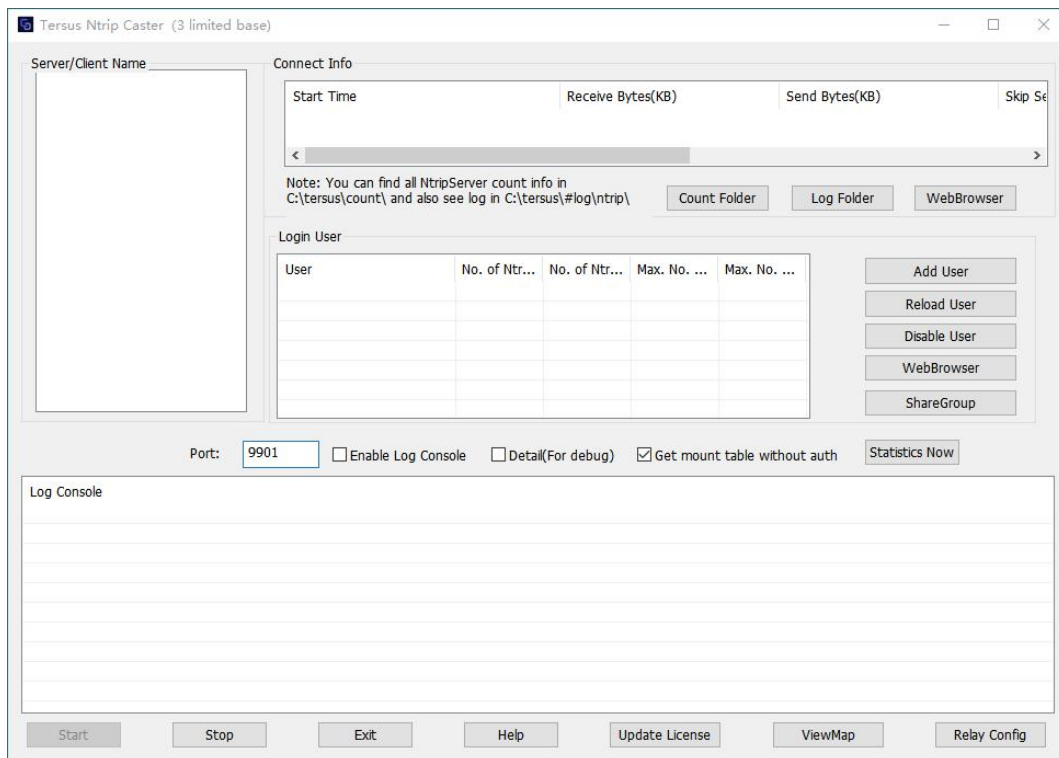
Figure 1.8 GeoCaster main interface

The GeoCaster main interface is shown above, and detailed operation will be described in the next chapter.

2. General Operations

This chapter describes the detailed operations for the watchdog interface and the main interface.

2.1　Watch Ntrip Caster

2.1.1 Introduction

The Watch Ntrip Caster interface provides watch dog function for GeoCaster. The interface contains three parts:

1) Alert Management

This area lists the information of Ntrip users, alert rate, alert valid time, phone number and mount point.

2) Action Trace

This area lists the details of time, action, target and information.

3) SMS Notification

This area sets up the telephone number for the SMS notification. For Chinese mobile, type the mobile number directly. For the users out of China, the notification number should use the format of 00 + country code + mobile number. For example, to notify a Singapore user, type 006512345678.

Generally, the Watch Ntrip Caster interface is for monitoring and notification. It is not recommend closing watchdog when GeoCaster is running.

2.1.2 Operations

The Watch Ntrip Caster is operating as shown below when there are a number of Ntrip users for management and monitoring.
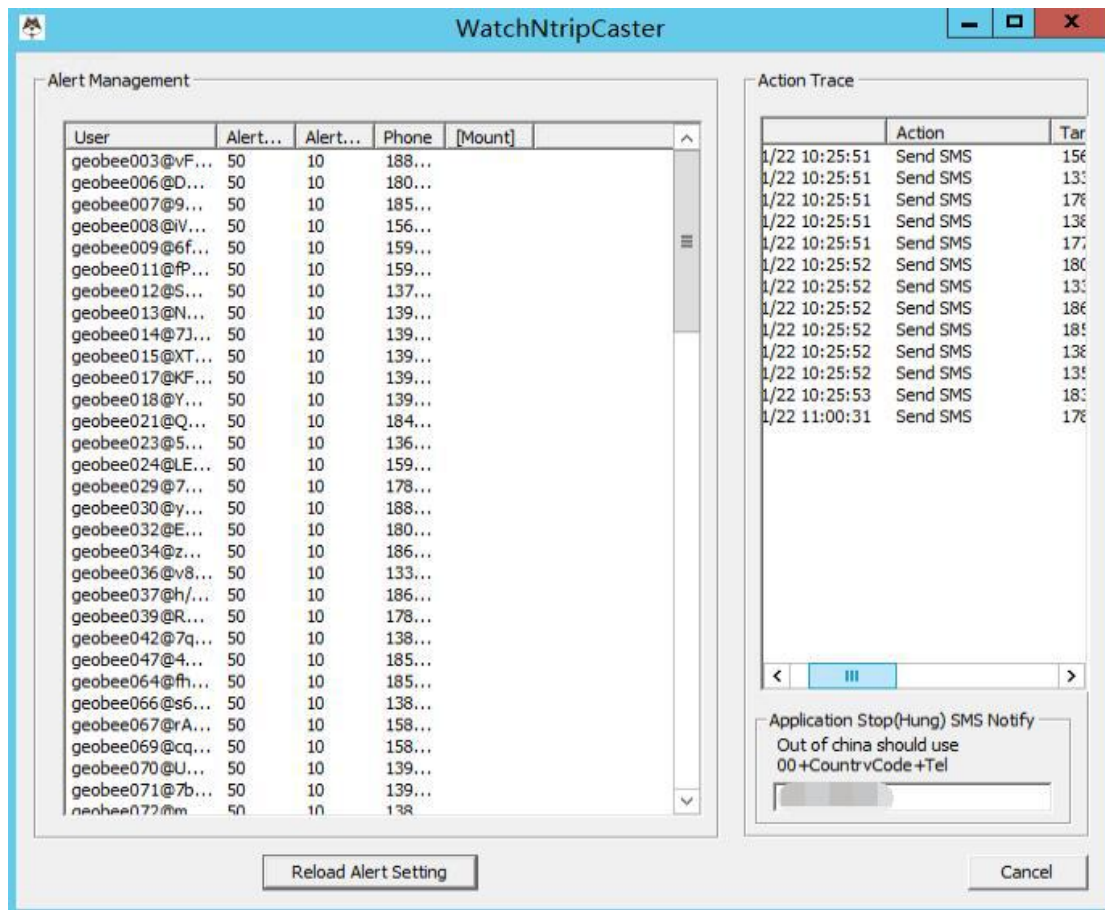
Figure 2.1 WatchNtripCaster in operation

If GeoCaster is closed accidentally, WatchNtripCaster will launch GeoCaster automatically and it has a record in the Action Trace area.

Contact Tersus Technical Support by email support@tersus-gnss.com for more information about the watchdog.

2.2   GeoCaster Main Interface

2.2.1   Introduction

The GeoCaster main interface contains four major information output areas which are shown as below.
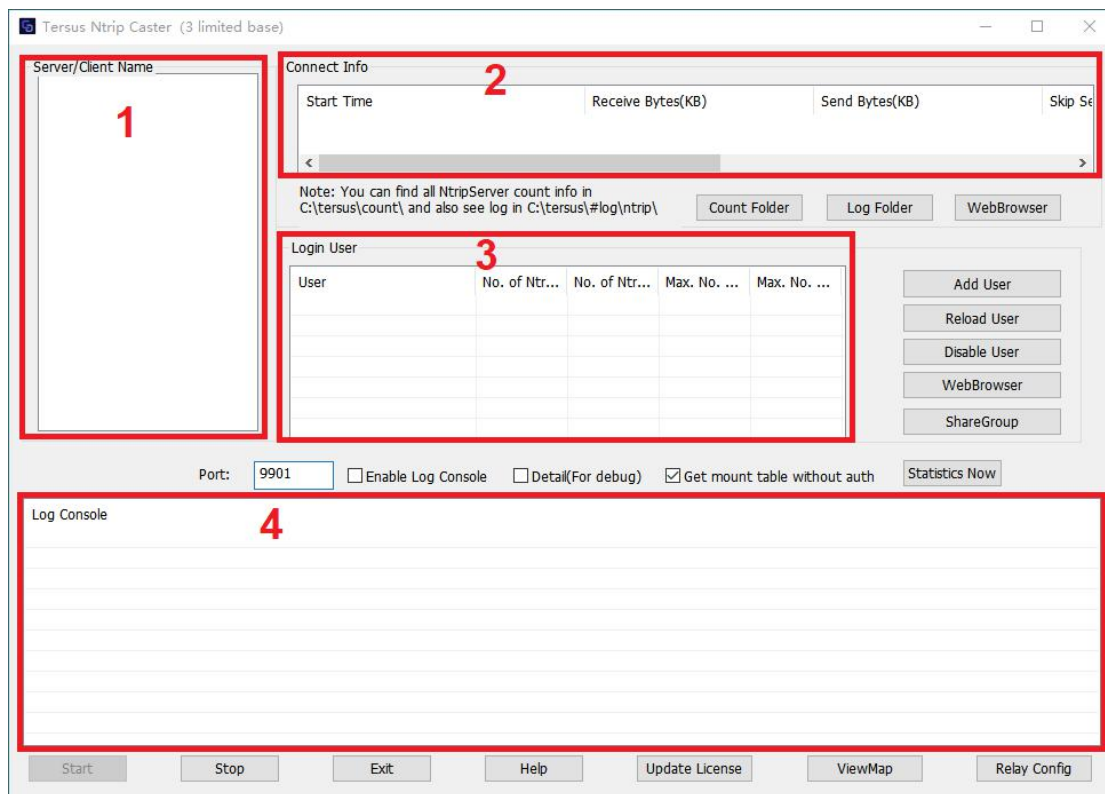
Figure 2.2 Information output area in GeoCaster

1) Server/Client Name

This area lists the servers which are sending RTCM stream to the NTRIP caster and the clients which are receiving RTCM stream from the NTRIP caster. The name consists of mount point, password, and user name.

2) Connect Info

This area presents the connect information of the server or client selected. The connect information includes: Start Time, Receive Bytes (KB), Send Bytes (KB), Skip Send, RTCM Type, GGA Info, Error / Valid Package (Total) and Latitude / Longitude / Height.

3) Login User

This area lists the information of logged in users which include user (user name and password), number of Ntrip Client, number of Ntrip Server, max number of Ntrip Client, and max number of Ntrip Server.

4) Log Console

This area presents the logs and information for every operation step, such as client is connected, client is aborted, responses, and etc.

2.2.2 Operations

The GeoCaster is operating as shown below when there are a number of Ntrip users are sending RTCM stream to this Ntrip Caster.
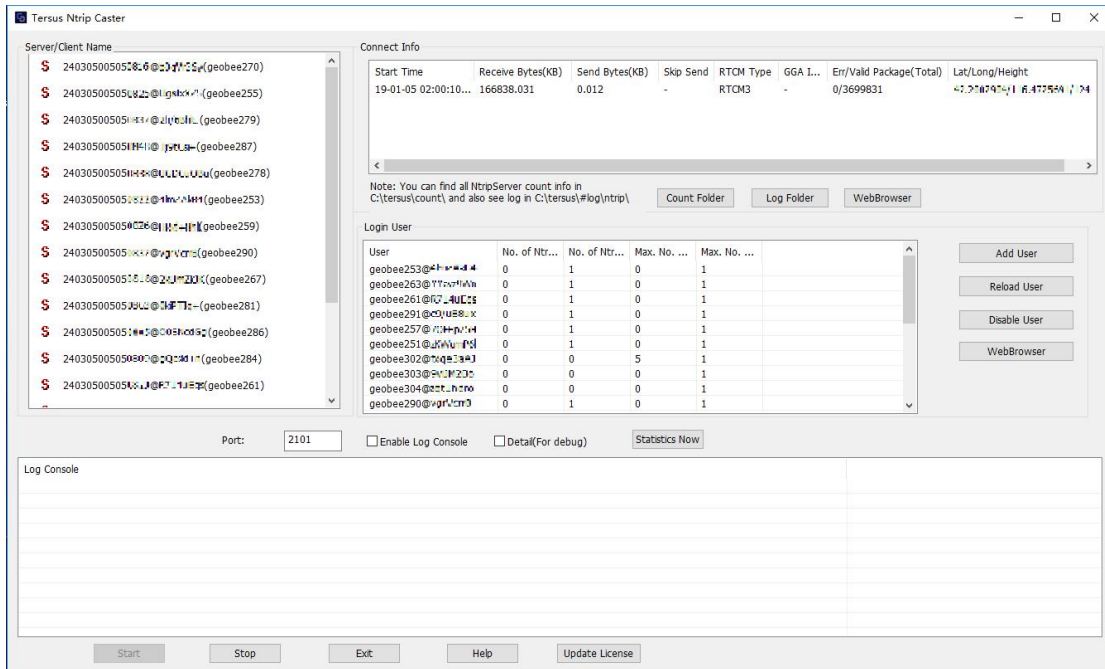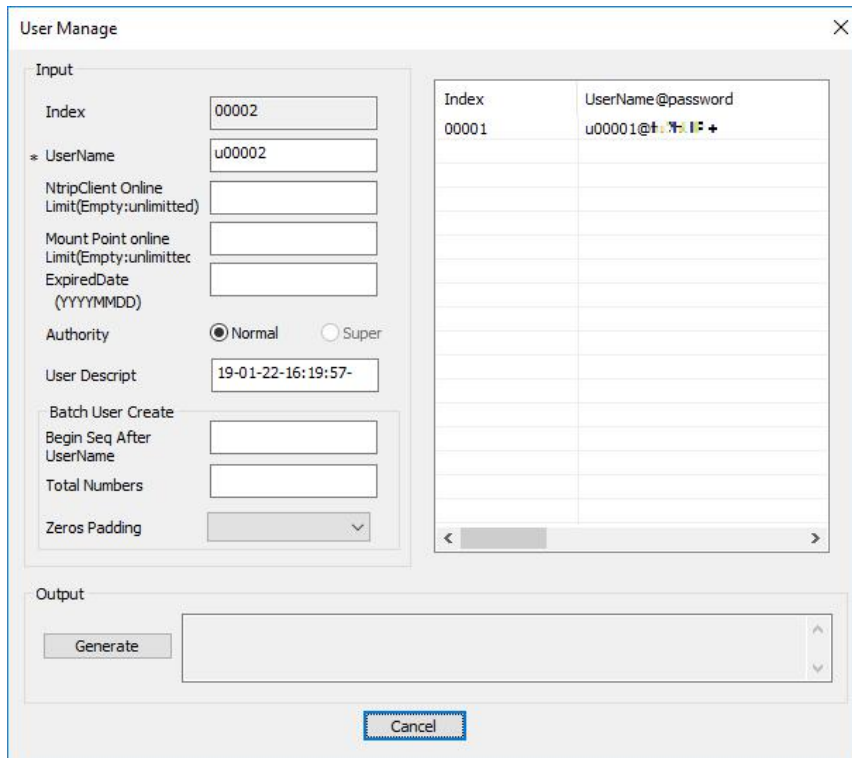
Figure 2.3 GeoCaster in operation

Under the connect info area, there are three functional buttons:

1) Count Folder

Click this button and the count folder will pop out as below. The count information is saved in a text file very hour.

Figure 2.4 Count Folder

2) Log Folder

Click this button and the log folder will pop out as below. The log information is saved in a .log file which can be opened with notepad.

Figure 2.5 Log Folder

3) WebBrowser

Click this button and the default browser with link status for the selected mount point will pop out as below.

Figure 2.6 Link status in web browser

On the right side of login user area, there are four functional buttons:

1) Add User

Click this button, it pops out the user manage window which is shown below.

Figure 2.7 User Manage interface

The option with a star * is compulsory. Fill the configuration for a new user, click [Generate] to output the password for the newly created user.

2) Reload User

This button is used to share the registered user information. If customer wants to share the user info to another machine, copy lic.dat/licdisablelist.dat to destination directory, then click [Reload User] to update information.

3) Disable User

Select a user in the login user area if customer wants to disable it, and click [Disable User] to disable this user. Deleting user is not recommended.

4) WebBrowser

Click this button and the default browser with link status for the selected user in the left login user area will pop out as below.
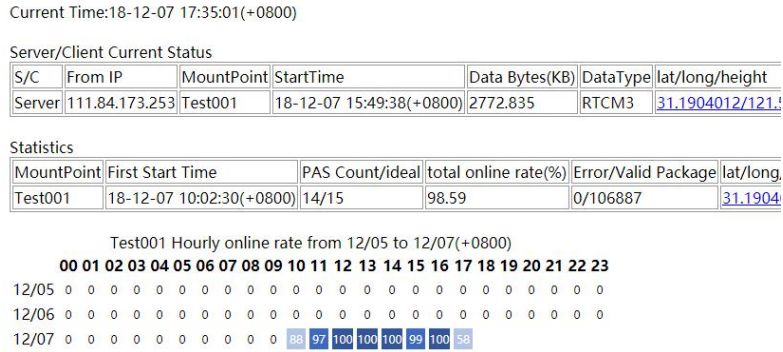
Figure 2.8 Link status in web browser

5) ShareGroup

Click this button and the default browser listing all share groups will pop out. The details refers to section 3.2.

Under the login user are, there are three options and one button:

1) Port

The port number can be edited in this box.

2) Enable Log Console

Check the box on the left of [Enable Log Console] can enable the output of log console window.

3) Detail (For debug)

Check the box on the left of [Detail (For debug)] to view more details specifically for debug purpose.

4) Get mount table without auth

By default, this box is not checked which means verification of user name and password are required when obtaining MountPoint from Tersus Caster. However, some software on the market do not require user name and password to acquire source table, and you may encounter that source table cannot be obtained. At this time, check the box to solve this problem.

5) Statistics Now

Click the button [Statistics Now] to create current count file, additionally from the auto created count file every hour.

On the bottom of the GeoCaster interface, there are five buttons:

1) Start

Generally this button is shaded when the GeoCaster is launched. If the software is turned off, click [Start] to turn on the GeoCaster service.

2) Stop

Click [Stop] to turn off the GeoCaster service.

3) Exit

Click [Exit] to close the GeoCaster software, however the WatchNtripCaster should be closed first.

4) Help

Click [Help] to pop out the text file of readme.txt which includes questions and answers that customer may encountered.

5) Update License

Click [Update License] to register GeoCaster for longer duration, contact Tersus Technical Support by email support@tersus-gnss.com for activation code.

6) ViewMap

Click [ViewMap] to pop out the map indicating the location of the base station.

7) Relay Config

Click [Relay Config] to pop out the relay function configuration interface shown as below. This is a data forwarding function, which can access data from other caster, and then run to Tersus Caster with the mount point of RELAY_xxx, for Client users to connect and receive data.
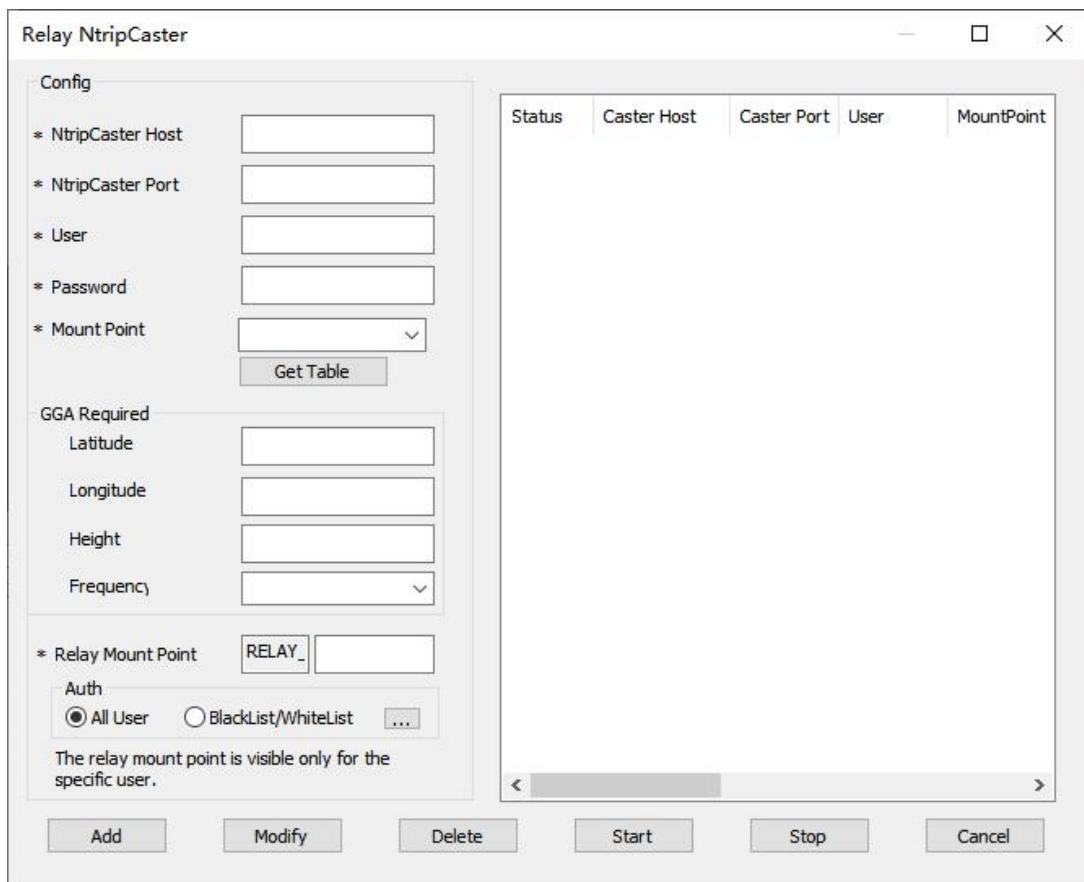
Figure 2.9 Relay config interface

3. Web query and management

3.1　Base station data stream query

Type your IP and port separating with a colon in your web browser, input the account and password of the base station, then you can view whether the base station data is uploading to the server, and the online status of recent three days. If there is a client is connected to this base station, it can be viewed on this web page.

3.2　Group User Management

The Group User function is mainly used for regional agent to manage and configure Client end-users with different privileges after using GeoBee builds a certain number of base stations in a region.

Specifically, under previous versions of Caster software, after the regional agent sends data from the GeoBee base station (NtripServer) in the region to the Caster software (NtripCaster) using the username and password distributed by Tersus, the end-user (NtripClient) in the region can only get the differential correction data using corresponding user name and password with the GeoBee base station, and the regional agent can not realize the configuration of the end-user's duration, limit days, available base station and other permissions. The new version of Caster software's Group User management function will make up for this weakness. The operation is as follows.

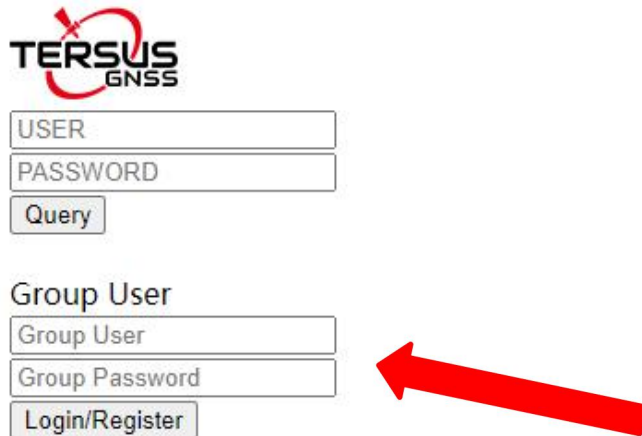1) Log in to the specified web page and use the designated password to log in to the Group User management function.

Figure 3.1 Login interface for group user

2) After logging into Group User, enter the Group User interface, Group means the area where the regional agent is located. The next step is to pull the GeoBee base stations in the area into Group, by entering the user name and password of the GeoBee base stations distributed by Tersus and clicking Add.

① Enter the user name and password of GeoBee base

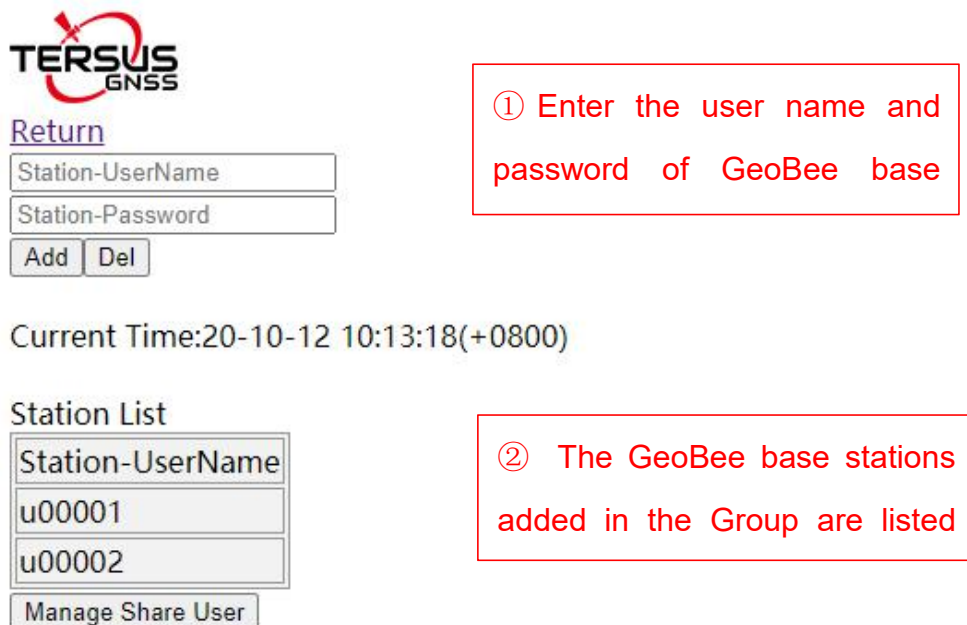② The GeoBee base stations added in the Group are listed

Figure 3.2 Base station list

If you want to remove a GeoBee base station that has been added to the Group, you need to enter the corresponding username and password and click the Del button. We need to make sure that the username and password are correct to prevent the base station from being accidentally

removed.

3) Start to configure the client end-users in the regional group. Click the Manage Share User button, and enter the ShareUser configuration interface.

Figure 3.3 Manage share user

4) The regional agent inputs the *username*, password, expired date, limit days and limit numbers of the Client end-user to be configured. Please try to set a complex username and password according to the recommended rules to avoid the cases that different regional agents set the same username and password to cause end-users to connect to different regional base stations. The password is recommended to set a string consisting of letters or numbers.

Figure 3.4 Share user list

After setting the expired date of an end-user, once the end-user expires, the end-user will not be able to connect to Caster software to get the differential correction data. If not setting expired date, the Caster system will have no limit for the user's expired date.

After setting the limit days of end-user, the used days of end-user will be refreshed every time the end-user disconnects. When the used days reaches the limit days, the end-user will not be able to connect to Caster software to get the differential correction data. If more than one NtripClient uses the same user name and password to get the differential correction data at the same time, the used days of this user will be accumulated. If the limit days is not set, the Caster system will have no limit for the user's limit days.

After setting the limit number of concurrent online users, when every end-user connects to the Caster system with this username and password, the current connection number will increase by 1. When the current number of connection reaches the limit number of concurrent online users

allowed, the system will not be able to connect using this username and password. If the limit number of concurrent online users is not set, the Caster system will have no limit for the concurrent online user using this username and password.

It should be noted that after this update of Caster software, Client end-users are still allowed to use the username and password of GeoBee base station to connect and get differential correction data, and the username and password has no limitation of expiration date, allowable days or concurrently online users. In other words, if the regional agent does not use the new Group User management function, the end-users in the region can keep the previous login method unchanged.

3.3 Nearest Base Station

This version of Caster software adds the Nearest Base Station function which will automatically select the nearest base station among all the base stations that is allowed to connect to according to the GGA uploaded by the NtripClient end-user and establish the connection.

The Nearest Base Station operation is very simple, NtripClient end-user can select NearBy mount point when obtaining the Mountpoint. The distance calculation and selection of Nearest Base Station will be done inside Caster software.
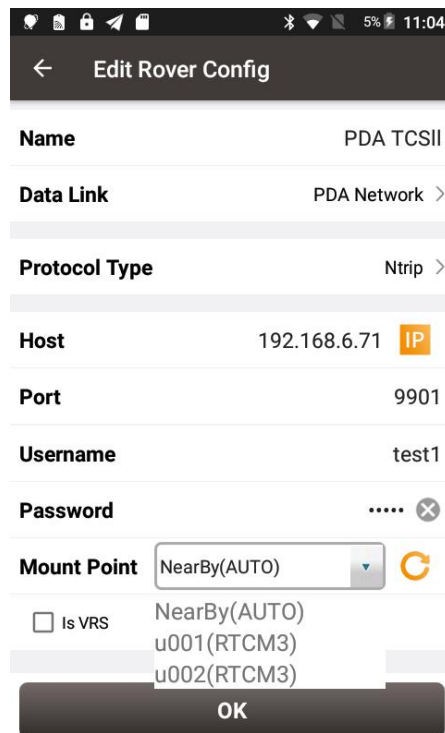

Figure 3.5 Select nearby mount point

4. Terminology

GNSS   Global Navigation Satellite System

NTRIP   Networked Transport of RTCM via Internet Protocol

PC   Personal Computer

RAM   Random Access Memory

RTCM   Radio Technical Commission for Maritime Services

SMS   Short Message Service

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