C18 User Guide

Shanghai HowayGIS InfoTech Co., Ltd.

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Content

Thank you for using the C18 device. These instructions will guide you on how to quickly use the device in regards to opening the equipment correctly and common work scenarios. For items you encounter that are not covered in these instructions or if you have problems using this device, you can either contact your dealer or HowayGIS directly at Email: supports@howaygis.com

1. Overview

1.1 Feedback

The C18 Continuous Operation Base Reference System uses a Trimble BD990 OEM board. It can be used in a variety of applications and is compatible with various platforms that can improve Single Base Station applications and any kind of VRS setup. An advanced type of self-locking connection is employed; the outer casing is made of aluminum alloy with a system that cools the machine. This self-cooling mechanism is coupled with anti-shock technology and more.

1.2 Product Features

- Diverse connections; complete compatibility with various mobile smart terminals and conventional RTK devices.
- Flexible configuration and wide selection. Can configure modules with different precisions depending on customers' demand; provide selection of different parts to effectively reduce cost and improve efficiency.
- Industrial design of casing with good resistance to shock, water and dust; can endure severe work environment in field.
- Support standard data formats as well as customized data formats to adapt to industrial development.
- With external antenna, eliminate impact of EMI on performance to receive signals from satellites so as to make best use of board/card.
- Separate communication to reduce interference in the device.
- With built-in stable network connection, provide functions of GNSS server so as to easily provide functions of reference station at all times and in all places.

1.3 Specification

- Channels：336
- GPS: L1 C/A, L2E, L2C, L5
- GLONASS：L1 C/A, L2 C/A, L3 CDMA
- BeiDou: B1, B2, B313
- SBAS：L1，C/A，L5
- GALILEO：E1, E5A, E5B, E5AltBOC, E6
- IRNSS: L5
- QZSS: L1C/A, L1 SAIF, L2C, L5, LEX

1.4 Communication

- A LAN Ethernet port
- Support connection to 10BaseT/100BaseT network;
- GNSS modules and applications are implemented through web access
- Ntrip server side
- A 2.0 USB device port(Optional)
- Two RS232 serial ports

1.5 Locating Precision

Mode	Precision
RTK (<30Km)	0.008m+1ppm horizontal 0.015m+1ppm vertical
DGNSS	0.25m+1ppm horizontal 0.5m+1ppm vertical
SBAS	0.5m horizontal 0.85m vertical

1.6 Physical specifications

Maximum overall dimension (including wall hanging plate): 167mm*150mm*60mm
Maximum overall dimension (without wall hanging plate): 167mm*128mm*58mm
Weight: principal machine 685g
Raw material: Aluminium alloy
Operating temperature: -30℃ ～+75℃
Storage temperature: -40℃ ～ +85℃
Operating humidity: 5% ～ 95%（noncondensing）

1.7 Electrical parameters

DC input: 12V 1A

2. Device and accessories

- C18 mobile base station
- 12V-1A DC power adapter
- USB cable
- RS232 DB9 female cable
- RJ54 cable
- Power cable
- SMA mail to TNC female cable

3. Schematics of Ports
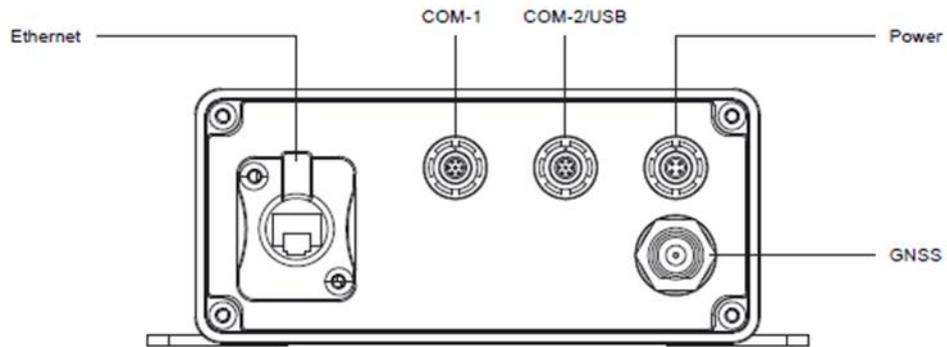
Front View

4 Inspection before Use

Connecting C18 to the power supply, when the power indicator is on, it means C18 power on.

5 Log On to the GNSS management interface

Open the browser and enter the IP address of the GNSS module. According to the prompt, enter the user name "Admin" and Password "password" and press the "confirm" button.

If the account number and password are correct, the interface will show as below.
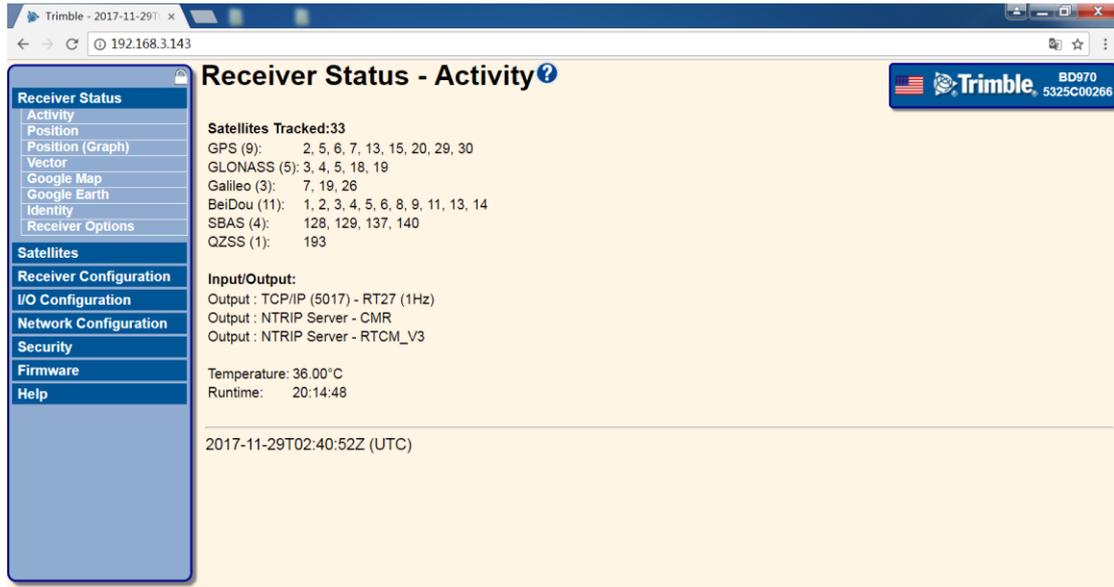
Note: The IP address of GNSS module and its related information configuration are shown on Annex 1

5.1 View Receiver Status

You can view information such as the current state of the receiver, etc. as below
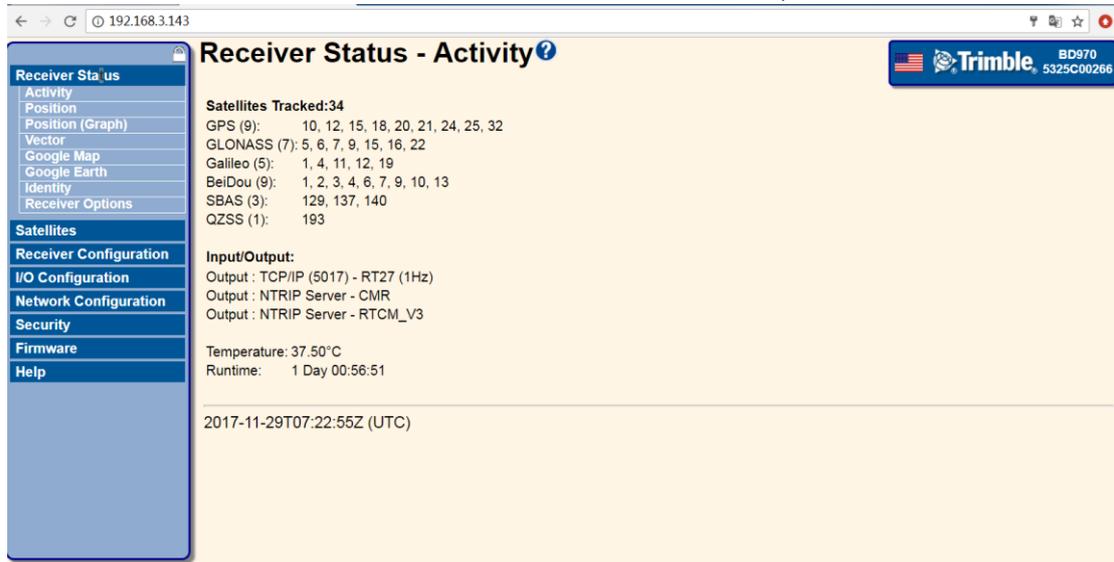
5.2 Satelites

View the satellite details, shown as below
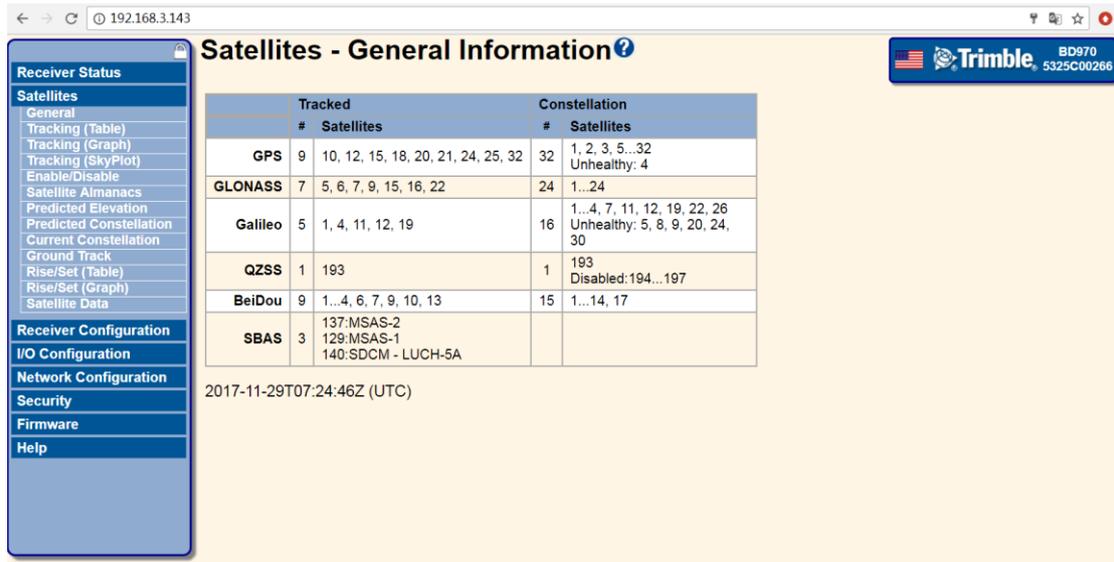
5.3 Receiver configuration

Configure the antenna height, reference station and other information of the receiver, as shown in the figure.
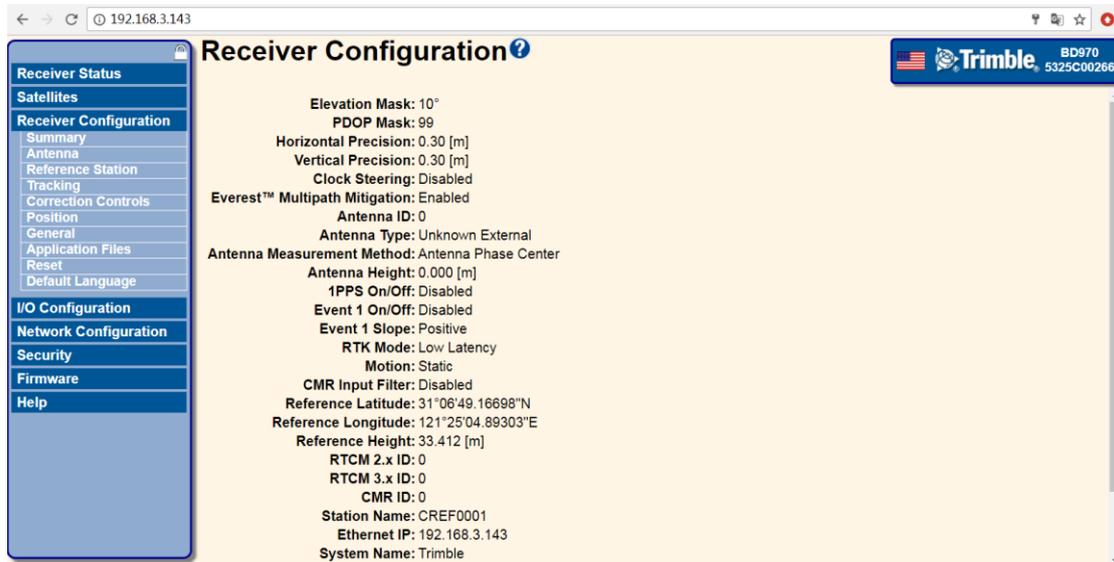
5.4 I / O configuration

I / O configuration can configure TCP / IP, ntrip server, ntrip caster and other types of output.

5.4.1 TCP/IP
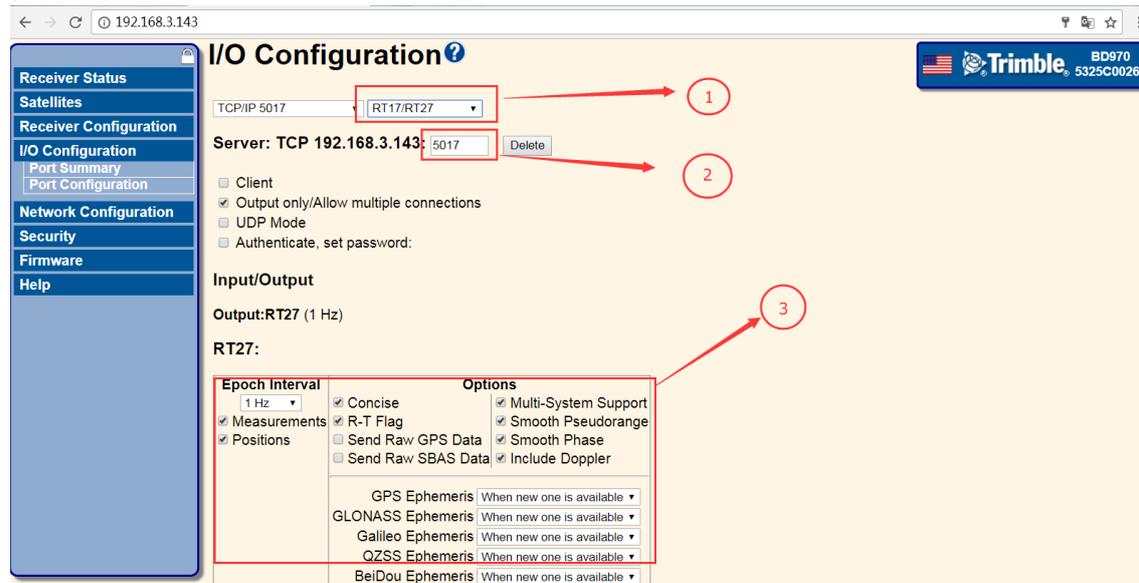
Where ① is the configuration of the type of the output data, including RT17 / RT27 / NMEA, etc.

② can Configure the output port

③ is the detailed configuration of the corresponding output type

Configure the data output according to the actual demand. After the configuration completed, click "OK" below.

5.4.2 NTRIP Client
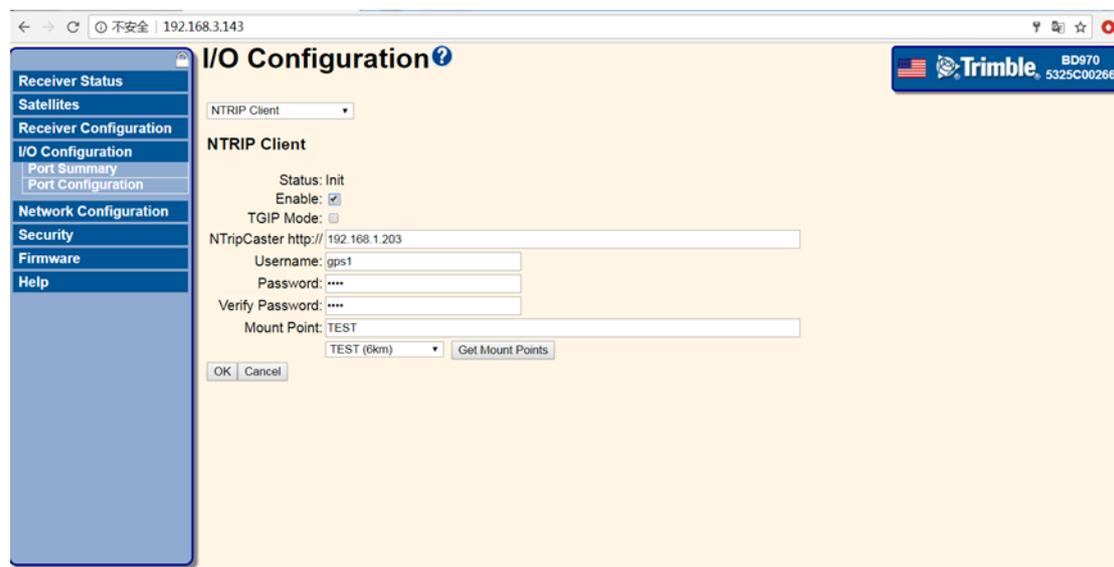
Enter the IP address, user name, password and other information of Ntrip caster, tick the box beside Enable, then click OK to start Ntrip client

5.4.3NTRIP Caster

Configure the port and output data format of Ntrip caster, tick the box beside Enable, and click OK to start Ntrip caster.

5.4.4 NTRIP Server
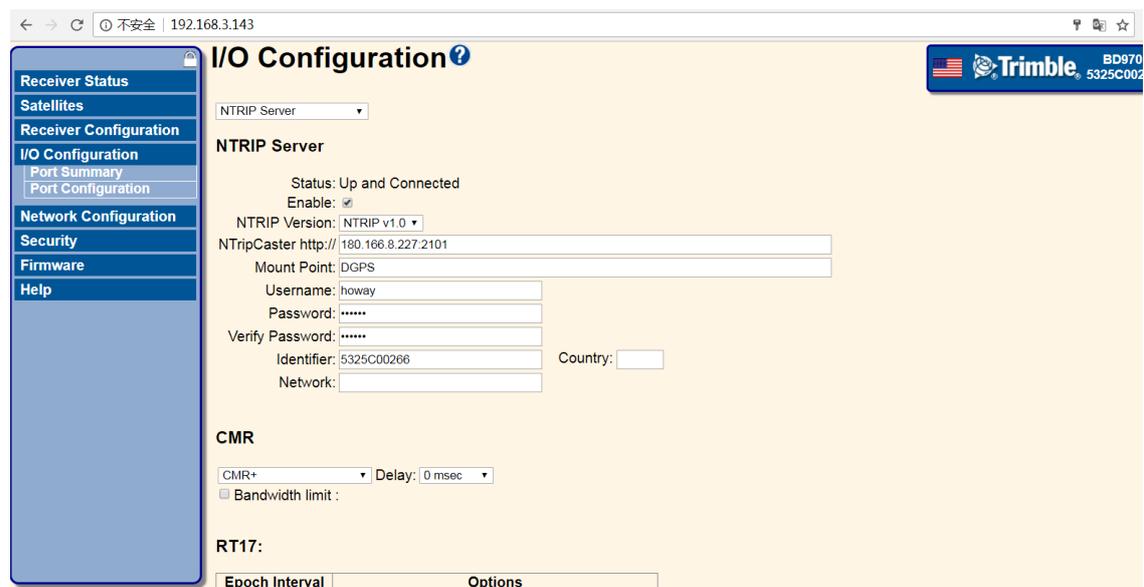
Input the IP address, user name, password and other information of ntrip caster, tick the box beside Enable, configure the output data type, and click OK to start ntrip server.

5.4.5 Serial Port

Configure the output data type, baud rate and other information, and click OK.

5.4.6 USB

The USB configuration is the same as the serial configuration.

5.5 Network settings
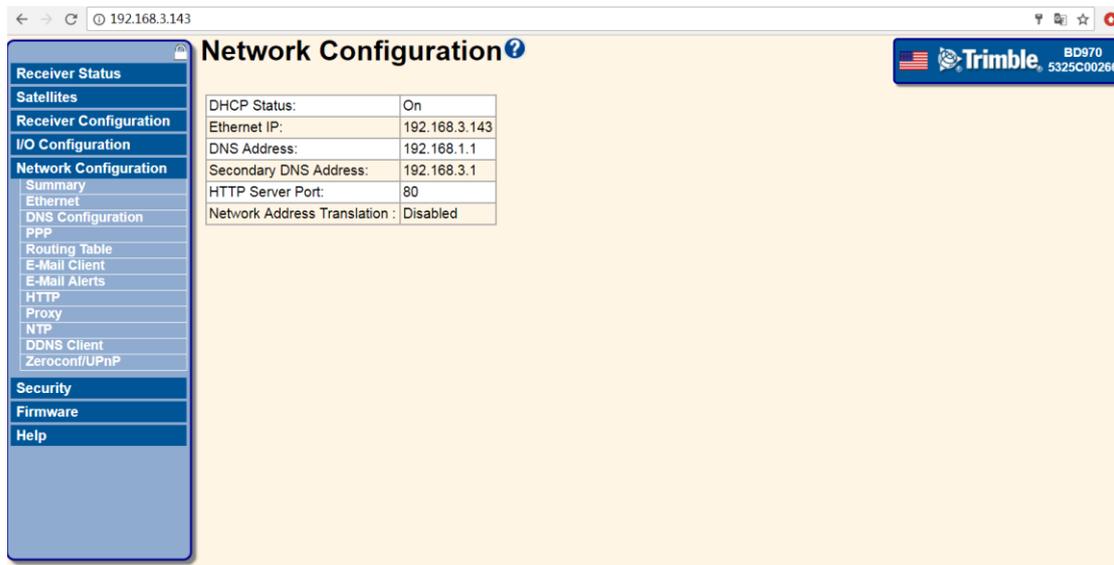
Configure network routing and email alarm settings etc.

5.6 Security
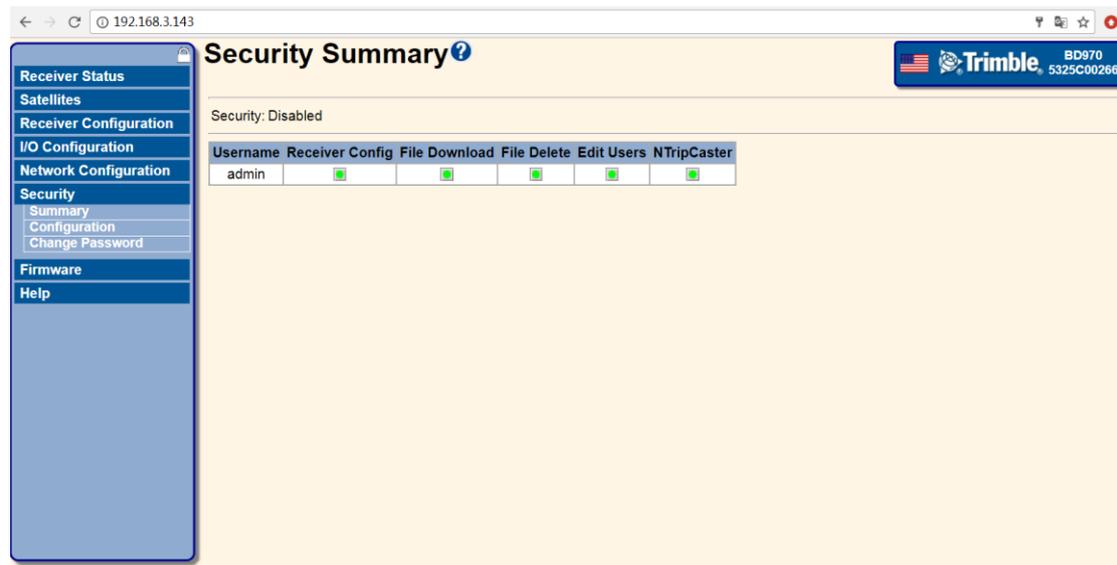
Set password for GNSS receiver

5.7 Firmware
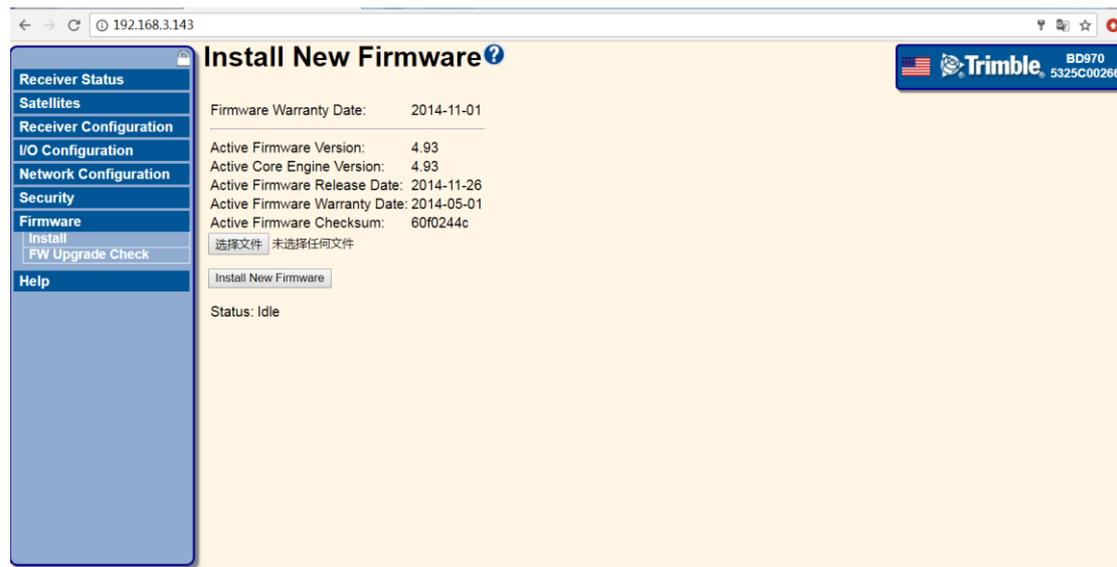
View the current firmware status and complete the firmware upgrade

6. Connect C18 Using Ethernet Port

Step 1: Open a new WEB browser interface, enter IP address of GNSS module learned in Annex 1 Following prompt on the screen, enter "admin" as user name and "password" as password, and then press "OK" button.

If the user name and password are correct, you can see the interface shown below.
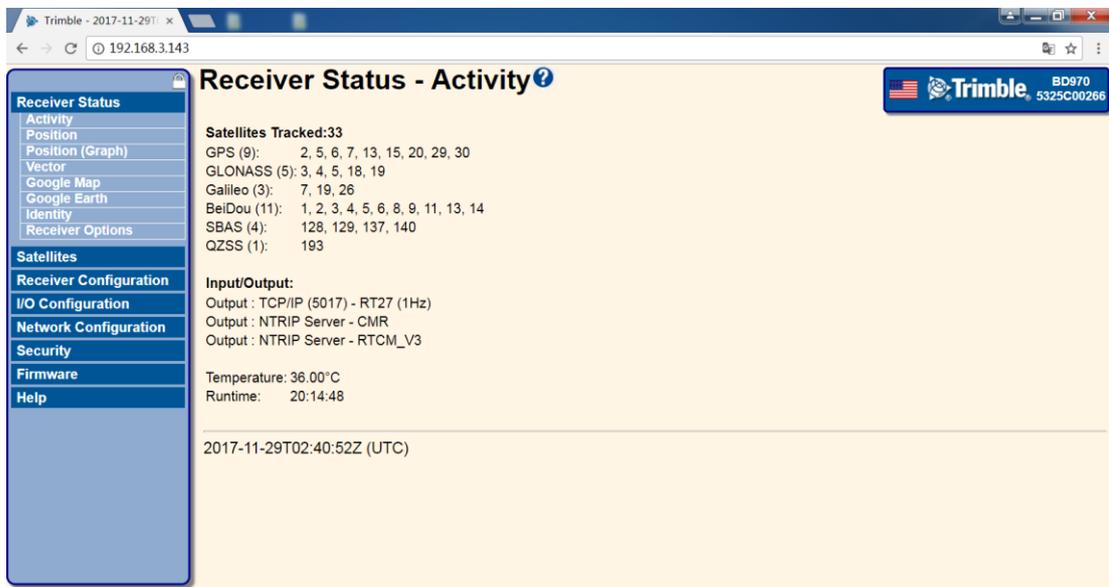
Note: See Annex 1 for configuration of IP address of GNSS module and other information.

Annex 1. Configure IP Address of GNSS Module Using Serial Port

Step 1: Connect C18 to computer using cable with serial port supplied.
Step 2: Connect C18 to network port of computer using network cable supplied.
Step 3: Download the tool "winflsh" via the following link.
http://trl.trimble.com/docushare/dsweb/Get/Document-710324/WFC-BD9xx-V234V485.exe
Step 4: Following the prompt on screen, install "winflsh" to computer.

Step 5: After installation is completed, run "winflsh" software. Following prompt on the screen, select serial port number of C18, and press "Next" button.
Step 6: Following prompt on the screen, select "configure Ethernet setting", single click "Next" to configure it.

Step 7: Click "complete". After successful connection, "configuration" interface appears.
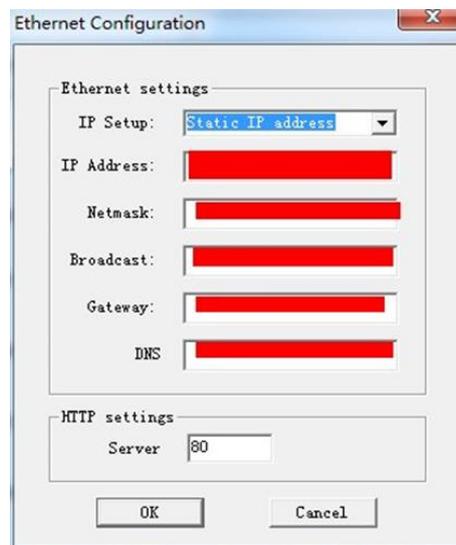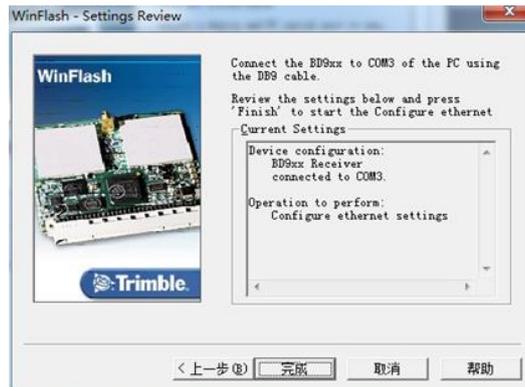
Step 8: Configure IP address of GNSS module.

Select "static IP address", and set IP address, Netmask, Gateway etc. In case of static IP, the IP address setting should be in same network segment with the computer that controls C18.
Select "", allow C18 built-in router to automatically assign IP address to GNSS module. This automatically assigned IP address can be seen in Step 2 in Section 9.2.

Step 9: After configuration is completed, click "OK". Wait until "configure" configuration ends, and then exit the software.
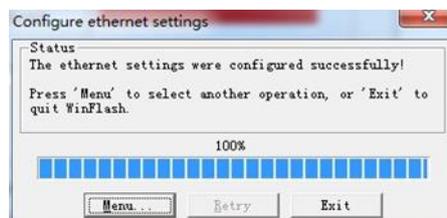
Step 10: Enter IP address of GNSS module in browser. Following prompt on the screen, enter "admin" as user name and "password" as password, then press "OK" button.