

# **CHCNAV i76 GNSS**

User Guide



Survey & Engineering | Mar 2025



## **Table of Content**

Table of Content	2
Preface	5
Copyright	5
Copyright 2025	5
Trademarks	5
Safety Warnings	5
FCC Statement	5
CE Interference Statement	6
Brazil	6
Conformity to Japanese regulations	6
1. Introduction	7
1.1 Safety Information	7
1.2 Regulations and Safety	7
1.2.1 Use and Care	7
1.3 Technical Support	8
1.4 Disclaimer	8
1.5 Your Comments	8
2. Getting Started with I76	9
2.1 About the Receiver	9
2.2 Parts of the Receiver	9
2.2.1 Front Panel	9
2.2.2 Lower Housing	10
2.2.3 Receiver Ports	
2.3 Batteries and Power	
2.3.1 Batteries	11
2.3.2 The Internal Battery	11
2.3.3 Battery Safe	11
2.4 Product Basic Supply Accessories	13
2.4.1 Base Kit Basic Supply	13
2.4.2 Rover Kit Basic Supply	14
2.5 Connecting to an Office Computer	14
2.6 Connecting to a Controller	15
2.6.1 Connecting via Bluetooth with LandStar Software	15
2.7 Downloading Logged Data	16
2.7.1 USB Download	16
3. Equipment Setup and Operation	18
3.1 Base Station Setup	18
3.2 Rover Station Setup	19
3.3 Working with the Tilt Compensation	20
3.3.1 Operation Steps for first IMU initialization	20

3.3.2 Notes of using tilt measurement	22
4. Configuring Through a Web Browser	23
4.1 Status Menu	24
4.1.1 Position Submenu	24
4.1.2 Activity Submenu	25
4.1.3 Google Map Submenu	25
4.2 Satellites Menu	25
4.2.1 Tracking Table Submenu	26
4.2.2 Tracking Info. Table Submenu	
4.2.3 Tracking Skyplot Submenu	27
4.2.4 Satellite Activation Submenu	27
4.3 Receiver Configuration Menu	28
4.3.1 Description	28
4.3.2 Antenna Configuration Submenu	29
4.3.3 Reference Station Settings Submenu	29
4.3.4 Receiver Reset Submenu	31
4.3.5 Languages Submenu	31
4.3.6 User Management Submenu	
4.4 Data Recording Menu	31
4.4.1 Log Settings Submenu	32
4.4.2 FTP Push Settings Submenu	34
4.4.3 FTP Push Log Submenu	
4.4.4 Data Download Submenu	
4.5 IO Settings Menu	35
4.5.1 IO Settings Submenu	36
4.6 Network Setting Menu	39
4.6.1 Email Alarm Submenu	40
4.6.2 HTTP Submenu	40
4.6.3 HTTPS Submenu	40
4.6.4 FTP Service Submenu	41
4.7 Module Setting Menu	41
4.7.1 Description Submenu	41
4.7.2 WiFi Submenu	
4.7.3 Bluetooth Settings Submenu	
4.7.4 Radio Settings Submenu	
4.7.5 IMU Setting	43
4.8 Firmware Menu	43
4.8.1 Firmware Info Submenu	44
4.8.2 Hardware Version Submenu	44
4.8.3 Config File Submenu	
4.8.4 System Log Download Submenu	45
4.8.5 User Log Submenu	45



4.8.6 Firmware Update Submenu	45
4.8.7 GNSS Board Upgrade Submenu	46
4.8.8 GNSS Registration Submenu	46

## Preface

## Copyright

#### Copyright 2025

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#### Trademarks

All product and brand names mentioned in this publication are trademarks of their respective holders.

### **Safety Warnings**

GNSS (Global Navigation Satellite System) receivers are electronic devices that use signals from satellites to determine location, speed, and time. While GNSS receivers are generally safe to use, there are some safety considerations that users should keep in mind:

Do not rely solely on GNSS for navigation: GNSS signals can be disrupted by various factors such as tall buildings, trees, and bad weather. It is important to use other navigation aids such as maps, compasses, and visual landmarks.

Keep GNSS receivers away from other electronic devices: Electronic devices such as mobile phones, radios, and computers can emit electromagnetic interference (EMI) that can disrupt GNSS signals. Keep GNSS receivers away from such devices to avoid EMI.

Do not tamper with GNSS receivers: Tampering with GNSS receivers or modifying their software can cause them to malfunction or produce inaccurate readings. Only use GNSS receivers that are certified and authorized for use.

Follow manufacturer instructions: Follow the manufacturer's instructions regarding the safe use and handling of GNSS receivers. This includes instructions for charging, cleaning, and storing the device.

Dispose of GNSS receivers properly: When disposing of GNSS receivers, follow local regulations for electronic waste disposal to avoid harming the environment.

It is important to use GNSS receivers safely to avoid accidents or injury. If you experience any issues or concerns with your GNSS receiver, contact the manufacturer or a qualified technician for assistance.

## **FCC Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **CE Interference Statement**

Declaration of Conformity: Hereby, CHC Navigation declares that this i76 is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. A copy of the Declaration of conformity can be found at CHC Navigation Technology Ltd.

# CE F©

## Brazil

Este equipamento nÃao tem direito à protecao contra interferência prejudicial e nao pode causar interferência em sistemas devidamente autorizados. Para maiores informacöes, consulte o site da ANATEL-www.anatel.gov.br.

## **Conformity to Japanese regulations**

Japanese Radio Law and Japanese Telecommunications Business Law Compliance.

This device is granted pursuant to the Japanese Radio Law and the Japanese Telecommunications Business Law.

This device should not be modified (otherwise the granted designation number will become invalid).

## 1. Introduction

The i76 GNSS Receiver User Guide describes how to set up and use the CHCNAV i76 GNSS receiver. In this manual, "the receiver" refers to the i76 GNSS receiver unless otherwise stated. Even if you have used other Global Navigation Satellite Systems (GNSS) products before, CHCNAV recommends that you spend some time reading this manual to learn about the special features of this product. If you are not familiar with GNSS, go to www.chcnav.com for an interactive look at CHCNAV and GNSS.

## **1.1 Safety Information**

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

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

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

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

## 1.2 Regulations and Safety

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

Before operating a i76 GNSS receiver, determine if authorization or a license to operate the unit is required in your country. It is the responsibility of the end-user to obtain an operator's permit or license for the receiver for the location or country of use.

## 1.2.1 Use and Care

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

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

## **1.3 Technical Support**

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

If you need to contact CHCNAV technical support, please contact us by email (support@chcnav.com) or Skype (chc\_support).

## 1.4 Disclaimer

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

## **1.5 Your Comments**

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

## 2. Getting Started with I76

## **2.1 About the Receiver**

The new CHCNAV i76 GNSS receiver offers integrated IMU-RTK technology to provide a robust and accurate GNSS positioning in any circumstances. Unlike the standard MEMS based GNSS receivers, the i76 GNSS IMU-RTK combines state-of-the-art GNSS RTK engine, calibration-free professional IMU sensor and advanced GNSS tracking capabilities. Survey projects are achieved with high productivity and reliability pushing the boundaries of conventional GNSS RTK survey.

2 Premium cameras enable Visual Stakeout. Bluetooth and Wi-Fi technology provides cable-free communication between the receiver and controller.

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

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

## 2.2 Parts of the Receiver

Power Button is located on the front panel. SMA port and USB Type-C port are located on the bottom of the unit.

#### 2.2.1 Front Panel

The following figure shows a front view of the receiver.



The front panel contains two indicator LEDs and one buttons.



Name	Description
Indicator light	<ul> <li>Indicates whether the receiver is transmitting/receiving differential data.</li> <li>As a Base station: successfully transmitting differential data, flash yellow light.</li> <li>As a Rover station: tracking satellites will flash red light, successfully receiving differential data from Base station will flash yellow light when it is single or float, flash green light when it is fixed.</li> <li>Shows the number of satellites that the receiver has tracked.</li> <li>When the receiver is searching for satellites, the red LED flashes once every 5 seconds.</li> <li>When the receiver tracks N satellites, the red LED blinks N times per second, pauses for 5 seconds, and then blinks N times again.</li> <li>Indicated charging status</li> <li>The power light shows yellow when charging</li> <li>The power light shows green when fully charged</li> </ul>
Power Button (Yellow/Green)	<ul> <li>Press and hold 3s to turn on or off;</li> </ul>

## 2.2.2 Lower Housing

The lower housing contains one SMA port, one USB Type-C communication.



## 2.2.3 Receiver Ports

Port	Name	Description
	USB Type-C port	<ul> <li>This port is a type-C USB connector that supports</li> <li>USB communications.</li> <li>Users can use USB Cable supplied with the system to</li> <li>download the logged data to a computer but can't</li> <li>upload the data.</li> <li>USB port can used to charge the i76 GNSS receiver.</li> </ul>
	SMA port	•Connect a radio antenna to internal radio of the receiver. And this connector is not used if you are using an external radio.

## 2.3 Batteries and Power

#### 2.3.1 Batteries

The receiver has a built-in non-removable Lithium-ion battery.

## 2.3.2 The Internal Battery

The rechargeable Lithium-ion battery is supplied partially charged.

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

To prevent injury or damage:

• Do not charge or use the battery if it appears to be damaged or leaking.

•Charge the Lithium-ion battery only in a CHCNAV product that is specified to charge it. Be sure to follow all instructions that are provided with the battery charger.

• Discontinue charging a battery that gives off extreme heat or a burning odor.

•Use the battery only in CHCNAV equipment that is specified to use it.

•Use the battery only for its intended use and according to the instructions in the product documentation.

## 2.3.3 Battery Safe

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

To prevent injury or damage:

•Do not use or charge the battery if it appears to be damaged. Signs of damage include, but are not limited to discoloration, warping, and leaking battery fluid.

- Do not expose the battery to fire, high temperature, or direct sunlight.
- •Do not immerse the battery in water.
- Do not use or store the battery inside a vehicle under hot weather condition.
- •Do not drop or puncture the battery.
- •Do not open the battery or short-circuit its contacts.

WARNING – Avoid contact with the rechargeable Lithium-ion battery if it appears to be leaking. Battery fluid is corrosive and contact with it can result in personal injury and/or property damage.

To prevent injury or damage:

• If the battery leaks, avoid with the battery fluid.

•If battery fluid gets into your eyes, immediately rinses your eyes with clean water and seek medical attention. Please do not rub your eyes!

• If battery fluid gets onto your skin or clothing, immediately use clean water to wash off the battery fluid.

## 2.4 Product Basic Supply Accessories

## 2.4.1 Base Kit Basic Supply

Item	Picture
176 GNSS Receiver	
SMA Whip Antenna(410-470MHz)	
Power Adapter	
USB Type-C	
H.I. Tape	
Extension pole(30cm)	
Tribrach with optical plummet	
Auxiliary H.I. Tool	
Transport Hard Case	



Tribrach Adaptor

### 2.4.2 Rover Kit Basic Supply

Item	Picture
I76 GNSS Receiver	
SMA Whip Antenna(410-470MHz)	
Power Adapter	
USB Type-C	
Range Pole (AR)	
Auxiliary H.I. Tool	
Transport Hard Case	

## 2.5 Connecting to an Office Computer

The receiver can be connected to an office computer via a USB Type-C port for serial data transfer. Make sure the receiver is turned on before connecting to your office computer.

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



## **2.6** Connecting to a Controller

### 2.6.1 Connecting via Bluetooth with LandStar Software

Turn on the controller  $\rightarrow$  run LandStar  $\rightarrow$  go to Config main menu  $\rightarrow$  tap Connect.

In the Connect screen, select CHC for the Manufacture field, i76 for Device Type field, Bluetooth for Connection Type field.

← Conne	ct instrument	į.
GNSS	TS	Peripheral
Brand	CHC	~
Туре	RTK	~
Model	i76	~
Contact type	Bluetooth	~
Antenna type	CHCI76 NON	E >
Target		O Search
🛞 GNSS-3719740 📀		
(*) GNSS-3689191		
(R) GNSS-35138	41	0
-		~
	Connect	

Tap the Bluetooth Manager and turn on the Bluetooth function to search Bluetooth device around  $\rightarrow$  select the target device in the list  $\rightarrow$  Tap back button  $\rightarrow$  select the target device in the Bluetooth manager list.



← Connect instrument			
GNSS	TS	Peripheral	
Brand	СНС	~	
Туре	RTK	~	
Model	176	×	
Contact type	Bluetooth	~	
Antenna type	CHCI76 NONE		
Target		O Search	
③ GNSS-3719740			
(*) GNSS-3689191		0	
(8) GNSS-351384	11	0	
-		~	
Connect			

Tap the Connect button to build the connection.



## 2.7 Downloading Logged Data

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

#### 2.7.1 USB Download

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

(1)Switch on the receiver and connect it with a computer by HCE600 Type-C. After the successful connection, a removable disk named as the Serial Number (SN)



of the receiver will appear on the computer.



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



(3)Double click this folder, you will see 2 folders. The "push\_log" folder is used to save the log files, and the "record\_1" folders are used for store static data.



(4)Double click the folder that you have configured to store the static data, you will see the folder(s) created by the i76 system automatically and named by the date which is decide by GPS time when you start to log data.



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



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



Tip - For HCN files, the name of the file is represented as XXXXXXD DD NN, where XXXXXXX is the SN of the receiver, D DD is day of year, and NN is the recording session.

MARNING – The static data will be saved in the "record\_1" folder, by default. Old files will be deleted if the storage space is full. If you configure not to auto delete old files when the memory is low, the receiver will stop data logging.

## **3.** Equipment Setup and Operation

## 3.1 Base Station Setup

Note:

The receiver with PN number A11356980007070507 is equipped with a TX/RX radio.

The receiver with PN number A11356980005070507 is only equipped with a RX radio.

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

#### **Components:**



No.	Name
а	176 GNSS receiver
b	SMA Whip Antenna
С	Extension pole (30 cm)
d	Tribrach adaptor
е	Tribrach w/ Opti
f	Aluminum tripod

#### Steps:

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

If work as a UHF base station, the SMA Whip Antenna need to be connected to the receiver.

- (3) Connect the receiver to external battery by using external power cable if necessary.
- (4) Connect the receiver to external storage disk by using USB cable if necessary.
- (5) Turn on the receiver by pressing the power button for 3 s.
- (6) Measure the antenna height by using H.I. tape and auxiliary H.I. tool.
- (7) Switch on the data controller and connect it to the receiver.
- (8) Use software to configure the receiver as UHF base mode.

## 3.2 Rover Station Setup

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

#### **Components:**



No.	Name
а	i76 GNSS receiver
b	2M range pole w/bag

**Note** –Keep the receiver fully charged.

If work as a UHF rover station, the SMA Whip Antenna need to be connected to the receiver.

- (1) Turn on the receiver by pressing the power button for 3 s.
- (2) Switch on the data controller and connect it to the receiver.
- (3) Use software to configure the receiver as cellular rover or UHF rover mode.

(4) Use software to start survey.

## 3.3 Working with the Tilt Compensation

The Auto-IMU need to be calibrated at the first time when users get a new i76 GNSS receiver. After initializing the sensor successfully, the i76 GNSS receiver will record the calibration parameters, and the user do not need to calibrate it manually any more.

After enable the tilt survey, the i76 IMU can be ready after a few steps walk or a bit movement automatically.

### 3.3.1 Operation Steps for first IMU initialization

(1) Open LandStar-> Tap Survey-> Tap to activate tilt measurement.



(2) Hold the pole vertical for a while and shake according to the procedures in the interface to do initialization.



(3) This icon  $\checkmark$  will appear when the initialization is successful.



- (4) Enter the Name and Antenna, then tap , point will be collected and store to Points automatically.
- (5) When this icon appears, the text will show "Tilt is not available, please measure in alignment" at the bottom of interface.



(6) Tap *e* to close tilt compensation.

#### **3.3.2** Notes of using tilt measurement

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

(2) In the process of tilt measurement, if the controller shows that "Tilt is not available, please measure in alignment" (red), please shake RTK slightly from left to right or back to front until the reminder disappears.

(3) The controller will prompt "Tilt is not available, please measure in alignment" when the receiver is stationary over 30 seconds or the pole hit the ground toughly.

(4) The pole cannot be shaken when point is collected.

(5) Initialization is required:

- when the RTK is turned on every time;
- when IMU module is turned on every time;
- when receiver drops at working;
- when the pole is tilted more than 65 degree;
- when the receiver is stationary more than 10 minutes;
- when the RTK rotates too fast on the matching pole (2 rounds per second);
- when the pole hit the ground toughly.



## 4. Configuring Through a Web Browser

Supported browsers:

(1)Google Chrome

(2) Microsoft Internet Explorer version 10, or higher

To connect to the receiver through a web browser:

(1) Turn on the Wi-Fi of the receiver.

(2) Search the wireless network named as GNSS-XXXXXXX (the SN of your receiver) on your computer, and then establish the connection.

(3) After the successful connection between your computer and the receiver, enter the IP address (192.168.1.1) of the receiver into the address bar of the web browser on your computer:



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



The default login account for the receiver is:

- Login Account: admin
- Password: password

#### **Note** – Tick **remember me** option, and then the browser will remember the Login Acco unt and

#### Password you entered.

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



🗑 Status	Position *		
Position	Position		DOP
<ul> <li>Activity</li> </ul>			
	Latitude:	311957.35761355*(North)	PDOP: 1.178948
<ul> <li>Google Map</li> </ul>	Longitude:	121*17'16.98888663*(East)	HDOP: 0.616086
	Height:	35.015	VDOP: 1.005165
	Type:	Single	TDOP: 0.748491
	Satellite Used: 30Total		Satellites Tracked: 45Total
	GPS(8):	1.7.8.9.16.21.27.30	GPS(8): 17.8.9.16.21.27.30
	GLONASS(5):	9.15.18.19.20	GLONASS(5): 9.15.18.19.20
	BDS/G):	1 3 7 10 26 35 40 44 59	EDS(23): 1 2 3 4 5 6 7 8 9 10 12 16 24 26 29 35 38 39 40 44 45 59 60
	GALLEC(6):	1 12 24 26 31 33	GALLEFC(7): 191224263133
	SBAS(0):		SBAS(0):
	QZ55(2):	194,195	QZSS(2): 194,195
Satellites			
Receiver Configuration	Receiver Clock		
Data Recording	GPS Week:	2184	
I/O Settings	GPS Seconds:	379197	
Network Setting			
8 Module Setting			

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

This chapter describes each configuration menu.

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

Currently, seven languages are available:

English	~	⊘ Confirm
中文		
English		
Русский		
Español		
Português		
Français		
日本語		

#### 4.1 Status Menu

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

#### 4.1.1 Position Submenu

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

Latitude: Longitude:	31°9'57.36875055"(North) 121°17'16.97717278"(East)		PDOP: 1.172767 HDOP: 0.616858
Height:	35,999		VDOP: 0.997431
Туре:	Single		TDOP: 0.744274
Satellite Used: 30Total		Satellites Tracke	ed: 45Total
GPS(7):	1,7,8,9,21,27,30	GPS(8):	1,7,8,9,16,21,27,30
GLONASS(5):	9,15,18,19,20	GLONASS(5):	9,15,18,19,20
BDS(10):	1,3,7,9,10,26,35,40,44,59	BDS(23):	1,2,3,4,5,6,7,8,9,10,12,16,24,26,29,35,38,39,40,44,45,59,
GALILEO(6):	1,12,24,26,31,33	GALILEO(7):	1,9,12,24,26,31,33
SBAS(0):		SBAS(0):	
QZSS(2):	194,195	QZSS(2):	194,195
Receiver Clock			
GPS Week:	2194		
GPS Seconds:	379271		



#### 4.1.2 Activity Submenu

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

itus	Activi	.,			
Position		Satellites Track: 46Total			Activity Status
Activity     Google Map		GPS(8): 1.7.8.9.16.2 GLONASS(5): 9151.8.19.2 BDS(23): 12.3.4.5.6.7 GALIEC0(7): 1.9.12.24.26 SBAS(0): QZSS(3): 193.194.195	1,27,30 0 (8,9,10,12,16,24,26,29,35 (3,1,33	Current Time: 2022-01-27 09 21:39 (UTC) Operation Duration: 00-00-00 01 20:50 Internal Storage: 4.85% 368MB/7595MB External Storage: 0% Disconnected External Storage: 4.85% Battery: 46%	
		Туре	Description		Output
	1	RTK Client	211.144.118.5.2102		
	2	TCP/UDP_Client1/NTRIP Server1	192.168.3.18.9900		
	3	TCP/UDP_Client2/NTRIP Server2	192.168.3.18.9901		
	4	TCP/UDP_Client3/NTRIP Server3	192.168.3.18.9902		-
	5	TCP/UDP_Client4/NTRIP Server4	192.168.3.18.9903		
	6	TCP/UDP_Client5/NTRIP Server5	192.168.3.18.9904		
	7	TCP/UDP_Client6/NTRIP Server6	192.168.3.18.9905		
	8	TCP Server/NTRIP Caster1	9901		
	9	TCP Server/NTRIP Caster2	9902		-
	10	TCP Server/NTRIP Caster3	9903		
	11	TCP Server/NTRIP Caster4	9904		-
	12	Serial Port	9600		
	13	Bluetooth	GNSS-3200193		
	14	Radio	460.0500MHz		

## 4.1.3 Google Map Submenu

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



## 4.2 Satellites Menu

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





### 4.2.1 Tracking Table Submenu

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

sv	Туре	Elevation Angle	Azimuth Angle	L1 SNR	L2 SNR	L5 SNR	B1C SNR	B2A SNR	Enabled
3	GPS	21	282	40.000	40.850	30.880	0.000	0.000	Yes
4	GPS	15	318	40.030	36.800	27.800	0.000	0.000	Yes
16	GPS	45	242	44.820	39.450	0.000	0.000	0.000	Yes
26	GPS	74	318	48.720	43.430	36.160	0.000	0.000	Yes
27	GPS	12	188	34.690	35.890	26.250	0.000	0.000	Yes
29	GPS	23	50	41.370	36.580	0.000	0.000	0.000	Yes
31	GPS	55	44	45.450	41.970	0.000	0.000	0.000	Yes
32	GPS	35	149	42.840	38.490	30.140	0.000	0.000	Yes
1	GLONASS	52	211	41.760	46.170	0.000	0.000	0.000	Yes
2	GLONASS	40	313	47.100	46.320	0.000	0.000	0.000	Yes
8	GLONASS	14	174	36.530	43.730	0.000	0.000	0.000	Yes
12	GLONASS	41	300	45.760	49.200	0.000	0.000	0.000	Yes
21	GLONASS	22	94	37.800	44.160	0.000	0.000	0.000	Yes
1	BDS	45	140	39.830	42.710	44.970	0.000	0.000	No
2	BDS	35	235	35.420	43.410	42.250	0.000	0.000	No
3	BDS	50	199	40.270	44.410	43.470	0.000	0.000	Yes

## 4.2.2 Tracking Info. Table Submenu

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





## 4.2.3 Tracking Skyplot Submenu

The following figure is an example of Skyplot page.



## 4.2.4 Satellite Activation Submenu

Use this menu to enable or disable satellites.



atellite Activation ×	ellite Activation ×								
GPS GLONASS	BDS GALILEO Q	ZSS SBAS							
Enable All 🔲 Dis	Enable All     Disable All								
Satellite Id	Enable	Satellite Id	Enable						
1		2							
3		4							
5		6							
7		8							
9		10							
11		12							
13		14							
15	<b>1</b>	16							
17		18							
19		20							
21		22							
23		24							
25		26							
27		28	Ø						

## 4.3 Receiver Configuration Menu

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



### 4.3.1 Description

	Ⅴ华测		SN:9999690	English 🗸 🚺 Quit
Status	Description =			
<ul> <li>Solitis</li> <li>Receive Configuration</li> <li>Anterior Configuration</li> <li>Anterior Configuration</li> <li>Anterior Configuration</li> <li>Anterior Configuration</li> <li>Anterior Configuration</li> <li>Anterior Configuration</li> <li>Language</li> <li>User Yanguage</li> </ul>	Receiver Info Antenna Tiper CHC/19 Antenna Ster (2000) These Cancer Antenna Sterg (2000) These Cancer Antenna Sterg (2000) These Cancer Evaluation Mater (10 POOP Mater (10)	Reference Station Into Reference States Mole: Add Roor Indexes and the Ord StatesOctOTINs Reference Lengths: 01000000000 Reference Hoget: 0.0000	10 0	
Data Recording				
J I/O Settings				
Network Setting				
8 Module Setting				



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

#### 4.3.2 Antenna Configuration Submenu

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

#### 4.3.3 Reference Station Settings Submenu

Reference Station Settings ×			
Reference Station Mode:	Auto Rover		~
	Save Save		
Sample for Average			
Positioning Constraint:	Single Solut	tion Coordinates	s O Fixed Solution Coordinates
Sampling Amount:	300	9.3%	
	Start	(II) Stop	

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

For Reference Station Mode, there are three modes available:

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

(2) **Auto Base:** The receiver will serve as a base after this mode is enabled, and then broadcast correction data based on coordinate inputted by user or obtained



through autonomous positioning automatically.

CHCNA	/ 华测	SN:9999690	English 🗸 🔽 Quit
🤠 Status	Reference Station Settings ×		
Satures     Satures     Satures     Satures     Satures     Satures     Satures     Satures     Receiver Configuration     Description     Antenna Configuration     Receiver Reset     Language     User Management     HcPPP Settings	Reference Station Mode:       Auto Base         Base Station Name:       9999990         Base Station D:       9999990         Base Station D:       9999990         Reference Longtude:       11         10       42,40332449         E       W         Reference Height:       60,4336         Esser       Sample for Average         Positioning Constraint:       @ Bingle Solution Coordinates         Openie Margint:       00         00       06		
Data Recording     I/O Settings     Network Setting     Network Setting	Coordinates transfer threshold value(Meter): Base list Add Save Delete V Modify ID Height Latitude Longitude 1 (15.8100 31 19 58.23544000 5 @ N 121 177	15.28542028 <sup>°</sup> ⊛ E ⊖ V	0

(3) **Manual Base:** The receiver will serve neither as a base nor a rover after this mode is enabled. Users need to configure the receiver manually.

For Reference Latitude and Reference Longitude:

Manua	Bas	e		~		
99996	90					
99996	90					
31	•	9	7	34.56636444	•	⊙N ⊖S
121	•	10	7	42.49352449	ŀ	●E ○W
50.43	36					
⊚ Us	e C	urrent	Pos	ition 🛛 🗐 S	avi	
	anio.	Soluti	on C	oordinatos (	Eis	ad Solution Coordinator
	99996 99996 31 121 50.43	9999690 9999690 31 121 50.4336 © Use C	9999690 9999690 31 • 9 121 • 10 50.4336 © Use Current	9999690 9999690 31 9 9 121 1 10 50.4336 © Use Current Pos	9999990 9999990 31 1 9 34.50930444 121 10 42.49332449 50.4336 © Use Current Position	99999900 99999900 31 1 0 34,5663644 121 1 10 42,40352449 50,4336 © Use Current Position

There are mainly three methods to enter the reference coordinates and shown as follows:

(1) Acquire Current Position: Click this button to acquire current position obtained through autonomous positioning automatically.

(2) Manual Input: Manually input the coordinate of a control point.

(3) **From CORS**: After the receiver logging in CORS, the software can record the coordinate of current position based on fix solution.

#### For Sample for Average:

Users can determine the positioning limit and sampling amount. The positioning limit falls into two types:

(1) **Single Solution Coordinates**: Collect the coordinates of receiver obtained through autonomous positioning.

(2) **Fixed Solution Coordinates**: Only collect coordinates of receiver with a fixed solution.



After the configuration of positioning limit and sampling amount, click  $\bigcirc$  start to carry out sampling and averaging  $\rightarrow$  the progress bar will show the progress  $\rightarrow$  the result will be served as the coordinate of current position.

If users need to save the changes, please tap <sup>Save</sup> button.

#### 4.3.4 Receiver Reset Submenu

Use this screen to completely or partially reset the receiver:

Receiver Reset ×	
Reboot Receiver:	⊗ Confirm
Return to Factory Defaults:	⊘ Confirm
Clear Satellite Data:	🛇 Confirm
Turn Off Receiver:	⊘ Confirm

#### 4.3.5 Languages Submenu

 Language ×

 English

 ぐ Confirm

 中文

 English

 Русский

 Español

 Português

 Français

 日本語

Use this screen to select the web interface language:

#### 4.3.6 User Management Submenu

Manage	ement ×				
Jser Ma	nagemen	ıt			
🤱 Add	Save Save	🗑 Delete	Nodify Anti-th	eft password	
ID		Us	er Name	Password	1
1		admin		•••••	
2		admin1		•••••	
3		admin2		•••••	

### 4.4 Data Recording Menu

Use the Data Logging menu to set up the receiver to log static GNSS data and to view



the logging settings. You can configure settings such as observable rate, recording rate, continuous logging limit, and whether to auto delete old files when memory is low. This menu also provides the controls for the FTP push feature:



#### 4.4.1 Log Settings Submenu

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

Store Info							
	Position		Total Storage		Storage Av	ailable	
1	Internal Storage		6425MB		6425M	в	
2	External Storage		OMB		OMB		
Attention: Total Record Info	assigned storage size sh	ould be less than 8GB.	It will stop recordin	g when the storage is full.			Clea
Attention: Total Record Info Recording Number	assigned storage size sh	ould be less than 8GB.	It will stop recordin	g when the storage is full. Setting Parameter	Switch	📟 ( Clear Data	lea

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

	Yes ONO		Antenna Height	0.0000	
Sample Interval:	1Hz 🗸		Measure Way:	Antenna Phase Ce	<ul> <li></li> </ul>
Elevation Mask:	10	(°)	Storage Format	HCN	~
Duration Time:	1440		RINEX Version:	OFF	~
Duration mile.	(Minute)			Advanced	
	6	Sava	3 Back		
		Jouro	0		
		June	0		

Click advanced to see more settings.

mulo necola. (	🔾 Yes 💿 No		Antenna Height:	0.0000	
Sample Interval: 1	Hz 💙		Measure Way:	Antenna Phase Ce	4
Elevation Mask: 1	0	(°)	Storage Format:	HCN	i
Duration Time:	440		RINEX Version:	OFF	~
Durabort mile. (N	Vinute)		4	dvanced	
Clast Date: (	Was in Na			Internet Observer	
Start Date: (	Yes ONO		Store Location:	Internal Storage	1
Apply Time: (	Yes ONO		Assigned Storage:	6000	(MB)
gral Point Store: (	🔾 Yes 💿 No		Observer:	CHC	
ulating Memory:	Yes No		Observe Agency:	CHC	
ita overwritten first fil	e after storage space Yes No observation.Turn off to	is full o record	FTP Push:	Close 1:ftp server 2:ftp server 3:ftp server	1 2 3



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

- > Auto Record: on or off.
- > Sample Interval: Select the observable rate from the drop down list.
- > Elevation Mask: Enter the elevation mask.
- > Duration Time: Set the duration of data logging.
- > Site Name: Enter the name of the site.
- > Antenna Height: the measured height value.
- > Measure way: Antenna Phase Center, Vertical Height, Slant Height
- > **Storage Format**: Select the format of the data store.
- > **RINEX Version**: OFF, 3.02, 2.11
- Start Date: Select Yes or No option to determine whether to auto record start date.
- Apply Time: Select Yes or No option to determine whether to auto record apply time.
- Integral Point Store: Select Yes or No option to determine whether to allow receiver to save data every hour.
- Circulating Memory: Select Yes or No option to determine whether to auto delete old files if the storage space is full.
- Repeat Observations: Select Yes or No option to determine whether to turn on to record a single observation.
- > **Store Location:** Internal Storage, External Storage.
- Assigned Storage: The assigned memory size of current thread(for example, Record 1) is 10000MB
- > **Observer:** Enter the name of observer.
- > **Observer Agency:** Enter the name of observer agency.
- FTP Push: Decide whether to push the stored files to the FTP server of your choice.

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

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

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

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



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

#### 4.4.2 FTP Push Settings Submenu

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

ecord Info				
Server ID	Server IP	Remote Directory	Server Description	Modify
1	192.168.3.72	/repo/first	ftp server 1	Modify
2	192 168 3 72	/repo/second	ftp server 2	Modify

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

Server IP:	192.168.3.72
Port:	21
Remote Directory:	/repo/first
Local directory:	/mnt/repo_3225804 ~
Server Description:	ftp server 1
User Name:	ftpuser1
Password:	•••••

#### 4.4.3 FTP Push Log Submenu

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

Record Info			
			Clear FTP Push
	in sever server	2 A 19 C 19 C 19 C	

#### 4.4.4 Data Download Submenu

In this submenu, users can download the data files that recorded in the internal storage through the internal FTP site. Please note that Chrome, EDGE and Firefox version higher than year 2020 version remove the FTP support through the browser.

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



sign in				
tp://192.168.1.1				
Your connection to this	site is not priv	vate		
Username				
Password				
			Concernance of the second	

The default logon account for the internal FTP site is:

- User name: ftp
- Password: ftp

(2)Click the directory named as "repo" to view and download the files currently stored on the receiver:

ndex of /		
Name	Size	Date Modified
System Volume Inform	ation/	8/9/19, 10:28:00 PM
repo 3225804/		7/16/19, 1:17:00 PM

(3)To find the file need to be downloaded, click the name of data logging session  $\rightarrow$  the date of file that be recorded  $\rightarrow$  the format of the file  $\rightarrow$  the name of the target file.

Index of /1	repo_3225804/
Name Size	<b>Date Modified</b>
push_log/	7/16/19, 1:17:00 PM
record_1/	8/15/19, 10:22:00 AM

(4)To download a file, left click the name of the target file  $\rightarrow$  download the file according to the prompts.

#### 4.5 IO Settings Menu



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



### 4.5.1 IO Settings Submenu

The following figure shows an example of the screen that appears when you select this submenu.

	Туре	Description	Output	Connection Status	Modify
	RTK Client	211.144.118.5:2102	***	Unconnected	Connect Disconnecting
2	TCP/UDP_Client1/NTRIP Serve	192.168.3.18:9900		Unconnected	Connect Disconnecting
8	TCP/UDP_Client2/NTRIP Serve	192.168.3.18:9901		Unconnected	Connect Disconnecting
ŀ	TCP/UDP_Client3/NTRIP Serve	192.168.3.18:9902		Unconnected	Connect Disconnecting
5	TCP/UDP_Client4/NTRIP Serve	192.168.3.18:9903		Unconnected	Connect Disconnecting
1	TCP/UDP_Client5/NTRIP Serve	192.168.3.18:9904		Unconnected	Connect Disconnecting
7	TCP/UDP_Client6/NTRIP Serve	192.168.3.18:9905		Unconnected	Connect Disconnecting
3	TCP Server/NTRIP Caster1	9901		Closed	Connect Disconnecting
9	TCP Server/NTRIP Caster2	9902		Closed	Connect Disconnecting
0	TCP Server/NTRIP Caster3	9903		Closed	Connect Disconnecting
1	TCP Server/NTRIP Caster4	9904		Closed	Connect Disconnecting
2	Serial Port	115200			Settings
3	Bluetooth	GNSS-3411955	GPGGA:5s,	1222	Settings
4	Radio	462.5500MHz			Settings

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

(1) RTK Client

After configuring the settings of RTK client, users can log on CORS or APIS. Tap the Connect button to the right  $\rightarrow$  the IO Settings screen will appear  $\rightarrow$  choose one of the connection protocols among the NTRIP, APIS\_BASE and APIS\_ROVER  $\rightarrow$  configure the related parameters  $\rightarrow$  click  $\bigcirc$  confirm to log on CORS or APIS.

Connection Protocol: NTRIP

onnection Protocol:	NTRIP
Server IP:	211.144.118.5
Port:	2102
Mount Point:	asd 🗸 🎸 Get
User Name:	zc
Password:	zc

Connection Protocol: APIS\_BASE

connection Protocol:	APIS_BASE 🗸
Server IP:	111.111.111.1
Port:	9901
Differential Data:	OFF 🗸

Connection Protocol: APIS\_ROVER



Connection Protocol:	APIS_ROVER 🗸
Server IP:	210.14.66.58
Port:	9902
Base ID:	1019923

#### Connection Protocol: TCP

Connection Protocol:	TCP
Server IP:	201.255.122.215
Port:	9902
C Co	nfirm 🛞 Back

## (2)TCP/UDP\_Client/NTRIP Server

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

Connection Protocol: TCP

Auto connect:				Connection Protocol:	TCP	~
Server IP:	192.168.3.1	8				
Port:	9901					
Differential Data:	OFF		~			
Raw Data:	OFF	$\sim$		HCPPP Data:	OFF	~
GPGGA:	OFF		~	GPGSV:	OFF	~
GPRMC:	OFF		~	GPZDA:	OFF	~
GPGST:	OFF		~	GPVTG:	OFF	~
GPGSA:	OFF		~	GPPOS:	OFF	~
Retransmit:	RTK	V OFF	~			

Connection Protocol: UDP

Auto connect:				Connection Protocol:	TCP	~
Server IP:	192.168.3	3.18				
Port:	9901					
ifferential Data:	OFF		$\sim$			
Raw Data:	OFF	$\sim$		HCPPP Data:	OFF	~
GPGGA:	OFF		~	GPGSV:	OFF	~
GPRMC:	OFF		~	GPZDA:	OFF	~
GPGST:	OFF		~	GPVTG:	OFF	~
GPGSA:	OFF		$\sim$	GPPOS:	OFF	~
Retransmit:	RTK	✓ OFF	~			

Connection Protocol: NTRIP1.0



Auto connect:					Connection Protocol:	TCP	~
Server IP:	192.168.	3.18					
Port:	9901						
ifferential Data:	OFF			~			
Raw Data:	OFF	~			HCPPP Data:	OFF	~
GPGGA:	OFF			~	GPGSV:	OFF	~
GPRMC:	OFF			~	GPZDA:	OFF	~
GPGST:	OFF			~	GPVTG:	OFF	~
GPGSA:	OFF			~	GPPOS:	OFF	~
Retransmit:	RTK	~	OFF	~			

#### Connection Protocol: NTRIP2.0

Auto connect:		Connection Protoco	d: TCP	~
Server IP:	192.168.3.18			
Port:	9901			
Differential Data:	OFF	~		
Raw Data:	OFF 🗸	HCPPP Dat	a: OFF	~
GPGGA:	OFF	GPGS\	/: OFF	~
GPRMC:	OFF	✓ GPZD/	A: OFF	~
GPGST:	OFF	GPVTC	GFF	~
GPGSA:	OFF	GPPOS	S: OFF	~
Retransmit:	RTK V OFF	~		

#### (3)TCP Server/NTRIP Caster

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

Connection Protocol: TCP

Auto connect:					Connection F	Protocol:	TCP	~
Server IP:	192.168	3.18						
Port:	9901							
ifferential Data:	OFF			$\sim$				
Raw Data:	OFF	~			HCPF	PP Data:	OFF	~
GPGGA:	OFF			~	c	SPGSV:	OFF	~
GPRMC:	OFF			~	0	GPZDA:	OFF	~
GPGST:	OFF			$\sim$	c	SPVTG:	OFF	~
GPGSA:	OFF			~	C	SPPOS:	OFF	~
Retransmit:	RTK	~	OFF	~				

#### Connection Protocol: NTRIP

Auto connect:				Connection Proto	col: TCP	~
Server IP:	192.168.3.18					
Port:	9901					
Differential Data:	OFF		$\sim$			
Raw Data:	OFF 🗸 🗸			HCPPP D	ata: OFF	~
GPGGA:	OFF		~	GPGS	SV: OFF	~
GPRMC:	OFF		~	GPZ	DA: OFF	~
GPGST:	OFF		$\sim$	GPV1	IG: OFF	~
GPGSA:	OFF		~	GPPC	OS: OFF	~
Retransmit:	RTK 🗸	OFF	~			

#### (4)Serial Port

Tap the **Settings** button on the right of Serial Port  $\rightarrow$  the *Serial Port Setup* screen will



appear  $\rightarrow$  select Baud Rate used to transmit data  $\rightarrow$  configure the messages that you want to output through the serial port  $\rightarrow$  click  $\bigcirc$  confirm to save the settings and start to transmit.

~	TCP	Connection Protocol:				Auto connect:
				18	192.168.3.	Server IP:
					9901	Port:
			~		DFF	Differential Data:
~	OFF	HCPPP Data:		~	DFF	Raw Data:
~	OFF	GPGSV:	~		DFF	GPGGA:
~	OFF	GPZDA:	~		DFF	GPRMC:
~	OFF	GPVTG:	~		DFF	GPGST:
~	OFF	GPPOS:	~		DFF	GPGSA:
			~	✓ OFF	RTK	Retransmit:

(5)Bluetooth

Tap the Settings button to the right of Bluetooth  $\rightarrow$  the Bluetooth Set screen will appear  $\rightarrow$  configure the messages that you want to transmit through Bluetooth  $\rightarrow$  click  $\bigcirc$  confirm to save the settings and start to transmit.

~	TCP	Connection Protocol:		Auto connect:
			192.168.3.18	Server IP:
			9901	Port:
			OFF 🗸	Differential Data:
~	OFF	HCPPP Data:	OFF 🗸	Raw Data:
~	OFF	GPGSV:	OFF 🗸	GPGGA:
~	OFF	GPZDA:	OFF 🗸 🗸	GPRMC:
~	OFF	GPVTG:	OFF 🗸 🗸	GPGST:
~	OFF	GPPOS:	OFF 🗸 🗸	GPGSA:
			RTK V OFF V	Retransmit:

(6)Radio

Tap the Settings button to the right of Radio  $\rightarrow$  the Radio Settings screen will appear  $\rightarrow$  select the format of differential data that you want to transmit through radio from the dropdown list  $\rightarrow$  click  $\square$  Confirm to save the settings and start to transmit.

## 4.6 Network Setting Menu

Use this menu to set email alert for specific situation, configure HTTP or HTTPS port, and the username and password of internal FTP site:





#### 4.6.1 Email Alarm Submenu

Use this submenu to choose which situation of receiver will be alerted and input the email address.

_	
то	
Email Address 1:	test@huacenav.com
Email Address 2:	test1@huacenav.com
Email Address 3:	test2@huacenav.com
	Save
From	
Account	
Account.	
Password:	
Server Address:	
	Save
(	
Email Alert	
	Developing the second sec
	Receiver is powered on
	External power is on
	Dattery level is low
	rtp pusit is talled
	Designed(linespee) will be surplised in 7 days

#### 4.6.2 HTTP Submenu

Use this submenu to configure HTTP port.

HTTP ×			
	HTTP Port:	80	🛄 Save

#### 4.6.3 HTTPS Submenu

Use this submenu to configure HTTPS port.



HTTPS ×		
HTTPS		]
	Enable HTTPS:	● Yes ◯ No
	HTTPS Port:	443
		Save

#### 4.6.4 FTP Service Submenu

Use this submenu to configure the user name and password of internal FTP site.

FTP Service			
	User Name:	ftp	
	Password:	•••	

## 4.7 Module Setting Menu

Use this menu to check module information, configure WiFi, Bluetooth, radio related settings, turn on/off static voice of buzzer, and setting IMU:



#### 4.7.1 Description Submenu

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



escription ×			
WI-FI Information		Radio Information	
Power Status:	ON	Radio Type:	Integ
Wifi Mode:	Access Point	Radio Power:	1W
MAC:	82:5b:10:07:ec:2b	OTA Baud Rate:	9600
Access Point Details		Radio Frequency:	443.000000MHz
SSID:	GNSS-9999690	Radio Protocol:	Transparent
		Radio Frequency Channel:	Full Range
		Frequency Range:	410MHz470MHz

#### 4.7.2 WiFi Submenu

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

WiFi ×	
WiFi Power Status:	ON CFF
SSID:	GNSS-9999690
Encryption Type:	NONE
Network frequency bands:	5_8G
🖳 s	tart

## 4.7.3 Bluetooth Settings Submenu

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

Bluetooth Settings ×	
Local Name: MAC Address: PIN:	GNSS-9999990 81:5B:10:07:EC:2B 1234
	ave

#### 4.7.4 Radio Settings Submenu

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



ilo settings			
Radio Status: O			F
Auto Start:	Yes No		
Radio Protocol:	Transparent	~	
Channel Bandwidth :	12.5	~	(kHz)
OTA Baud Rate:	4800	~	
Radio Power:	1W	~	
Radio Frequency:	1 ¥ 456.050	000	(410MHz470MHz)
FEC			

## 4.7.5 IMU Setting

Use this submenu to turn on/off IMU function and set antenna height.

U Setting ×		
IMU Setting		
IMU Status:	● ON ○ OFF	
Antenna Height:	2.0	
🖾 s	ave	
IMU Init Status:	IMU init fail, please shake the center bar	
Lat:	31°9'34.56599718"(North)	
Lon:	121°10'42.49304187"(East)	
Alt:	48.354	
Vertical dip:	0°28'3.82295453"	
disc allow of disc	227°0'57 51882360"	

#### 4.8 Firmware Menu

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





#### 4.8.1 Firmware Info Submenu

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

Firmware Info. ×	
Firmware Version:	1.0.6
Firmware Release Time:	20211115_364c74b

#### 4.8.2 Hardware Version Submenu

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

Hardware Version ×	
Main Board:	1.0.1
Core Board:	1.0.1
PN:	A11356980005070507
Board Firmware Version Number:	14259

#### 4.8.3 Config File Submenu

Use this submenu to update Configuration File.





#### 4.8.4 System Log Download Submenu

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

System Log Type:	Firmware Log	~

#### 4.8.5 User Log Submenu

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

User	Log settings		
<ul> <li>Image: A start of the start of</li></ul>	System Starting Time	Wi-Fi Status	
<ul> <li>Image: A second s</li></ul>	External Power Removed	Bluetooth status	
	Satellites Tracking Status Changed	CORS and APIS states	
✓	TCP Client Connection	3g Connection status	
	TCP Client Disconnect		
	Observation Recording Start and End		
	FTP file pushed		
	Email alert time		

#### 4.8.6 Firmware Update Submenu

Use this submenu to load new firmware to the receiver across the network. Tap the Browse button to locate the upgrade file  $\rightarrow$  tap Confirm button to confirm the selected



upgrading file and start upgrading.

Firmware Update ×		
	Upgrade File:	Browse
		🖾 Confirm

Notes-

It may take about 3 or 4 minutes to complete the firmware upgrading. Do not touch the power button or unplug the power until the upgrading process finishes, or damage will be caused to the receiver.

The receiver will restart after the firmware upgrading is done, so users need to reconnect the receiver with your computer via Wi-Fi, and then log-in the receiver through a web browser to continue the configuration.

#### 4.8.7 GNSS Board Upgrade Submenu

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

GNSS Board Upgrade ×	
Upgrade File:	🖳 Browse
	Confirm

#### 4.8.8 GNSS Registration Submenu

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

	Serial Number:	9999690	
	Registration Limit:	2024-6-21	
	Registration Code:	TDnSRvavY6y	
Registration dea	dline for external account	Unregistered	



## **CHC** Navigation

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This document is intended for general information purposes only. It does not consider the reader's specific circumstances and environmental constraints of use of GNSS.

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