



LT700H RTK ANDROID TABLET

User Guide



Mapping & Geospatial | October 2019

Make your work more efficient

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Preface

Copyright

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Trademarks

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

Safety Warnings

The Global Positioning System (GPS) is operated by the U.S. Government, which is solely responsible for the accuracy and maintenance of the GPS network. Accuracy can also be affected by poor satellite geometry and obstructions, like buildings and heavy canopy.

FCC Interference Statement

This equipment has been designed to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules in the Portable Mode. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

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.

CE Interference Statement

Declaration of Conformity: Hereby, Shanghai Huace Navigation Technology Ltd. declares that this LT700H 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 Shanghai Huace Navigation Technology Ltd.



1 Introduction

Thank you for choosing CHCNAV LT700H GNSS RTK Tablet.

This user guide will provide useful information about your receiver. It will also guide you through your first steps of using LT700H in the field.

1.1 Technical Assistance

If you have a problem and cannot find the information you need in the product documentation, contact your local dealer from which you purchased the LT700H. Alternatively, please request technical support using the CHCNAV Website (www.chcnav.com) or CHCNAV technical support email (support@chcnav.com).

1.2 Your Comments

Your feedback about this Getting Started Guide will help us to improve it in a future revision. Please e-mail your comments to support@chcnav.com.

1.3 Safety Information

This manual describes CHCNAV LT700H RTK Tablet. Before using the LT700H, please make sure that you have read and understood this Getting Started Guide, as well as the safety requirements.

1.4 Warning and Cautions

This device complies with Part 15 of the FCC Rules. The 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.

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 misuse 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.

1.5 Use and Care

The LT700H is designed to withstand the rough environment that typically occurs in the field. However, the LT700H is high-precision electronic equipment and should be treated with reasonable care.

2 Overview

2.1 Features

LT700H is a high-end GNSS RTK tablet under Android 8.1 OS. Its dust and waterproof level is IP67 and it can survive 1.5 m fall onto concrete. With 8000 mAh Li-ion battery, it can continuously work up to 12 h. The LT700H tracks GPS + GLONASS + GALILEO + BEIDOU (for details refer to **3.10.2 Select the Constellation Combination.**)

Item	Specification
Operating System	Android 8.1
CPU	8-core 2.2 GHz
RAM	4 GB
Flash Memory	64 GB
Memory Extend	Micro SD, up to 128G
GNSS	Support GPS, GLONASS, BDS and GALILEO
Accuracy	0.05 m HRMS with RTCM 3.2 corrections
Channel	184
Cold Start	30 s
Warm Start	1s
WIFI	802.11 a/b/g/n/ac
Cellular Modem	TDLTE, TDSCDMA, EVDO, GSM, WCDMA
Bluetooth	V4.1
USB	Type C/OTG
Li-ion Battery	8000mAh
Voltage	3.8V
Battery Life	12 h (continuous work)
Charging Time	4.0 h (5V, 2A); 3.0h (9V/12V, 2A)
Front Camera	5 megapixels
Back Camera	16 megapixels
Flashlight	Integrated

2.2 Specifications

Physical specifications

Display

- Size: 8" IPS Glass touch screen
- Resolution: 1920 x 1200
- Brightness: 450 cd/m²
- Touch screen: Capacitive touch, 10 points touch screen, waterproof, gloves-supported
- Point touch pen: Mapping pen with high degree of accuracy
- Screen technology: IPS display panel Corning® Gorilla® Glass 3

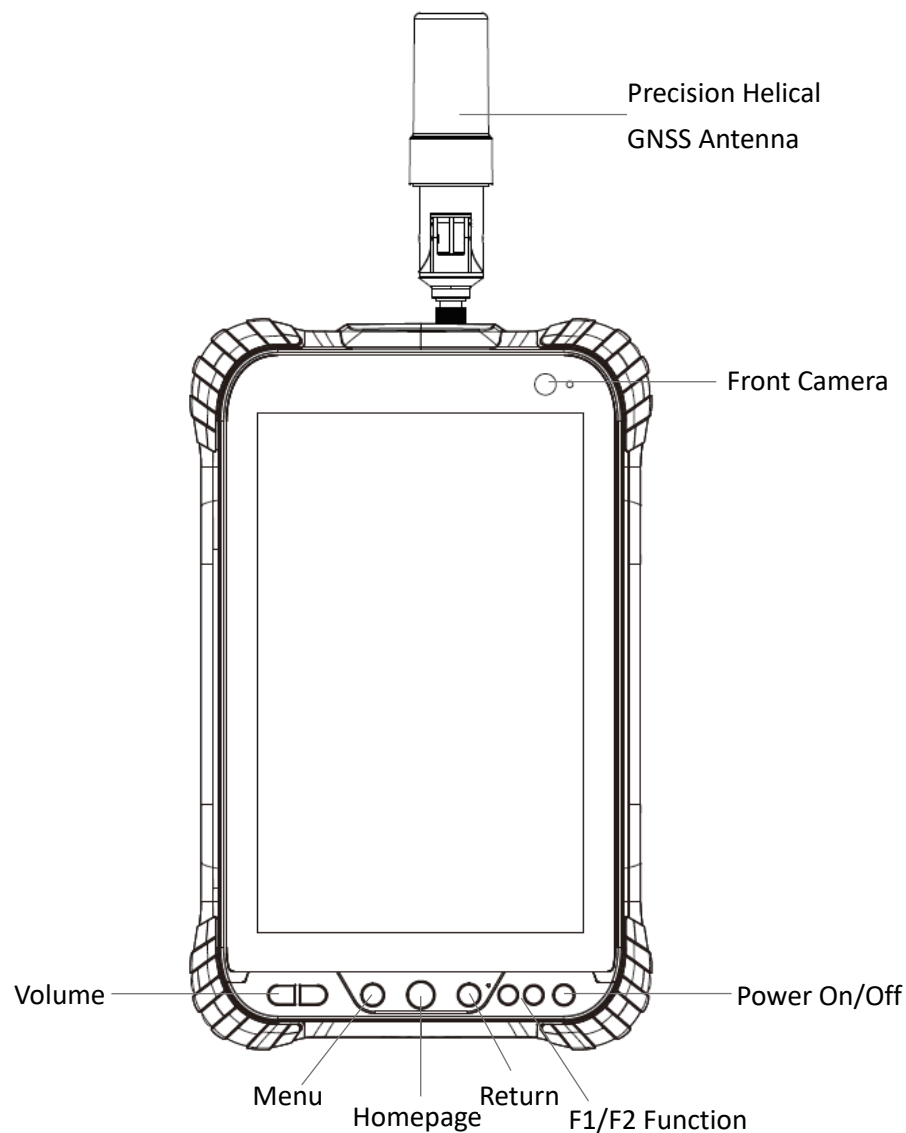
Physical

- Dustproof and waterproof: IP67
- Shock: Survives a 1.5 m drop onto concrete
- Humidity: 5% - 95% RH (without condensation)
- Dimension: 240 mm*151 mm* 32 mm (L*W*H) (including module)
- Weight: 675 g (with battery and module)
- Operating temperature: -20 °C to +60 °C
- Storage temperature: -30 °C to +70 °C

Sensors

- NFC: Support
- G-sensor: Support
- Light sensor: Support
- Distance sensor: Support
- E-compass: Support
- Gyroscope: Support

2.3 Front View



Power Button

Power on: Press the button for 1-2 seconds, the Power Indicator will turn on and the boot screen will appear. The LT700H will enter the operating system after 30 seconds.

Power off: Press the button for 1-2 seconds, the **[SELECT]** dialogue box will pop up, select **[Power off]** to turn off the device.

Return: Press the button to go back to the last menu.

Menu Button

Click this button to bring out the start menu.

Homepage

Use the Homepage button to the main menu.

F1/F2 Function Button

This key is a shortcut key to the preset function or menu.

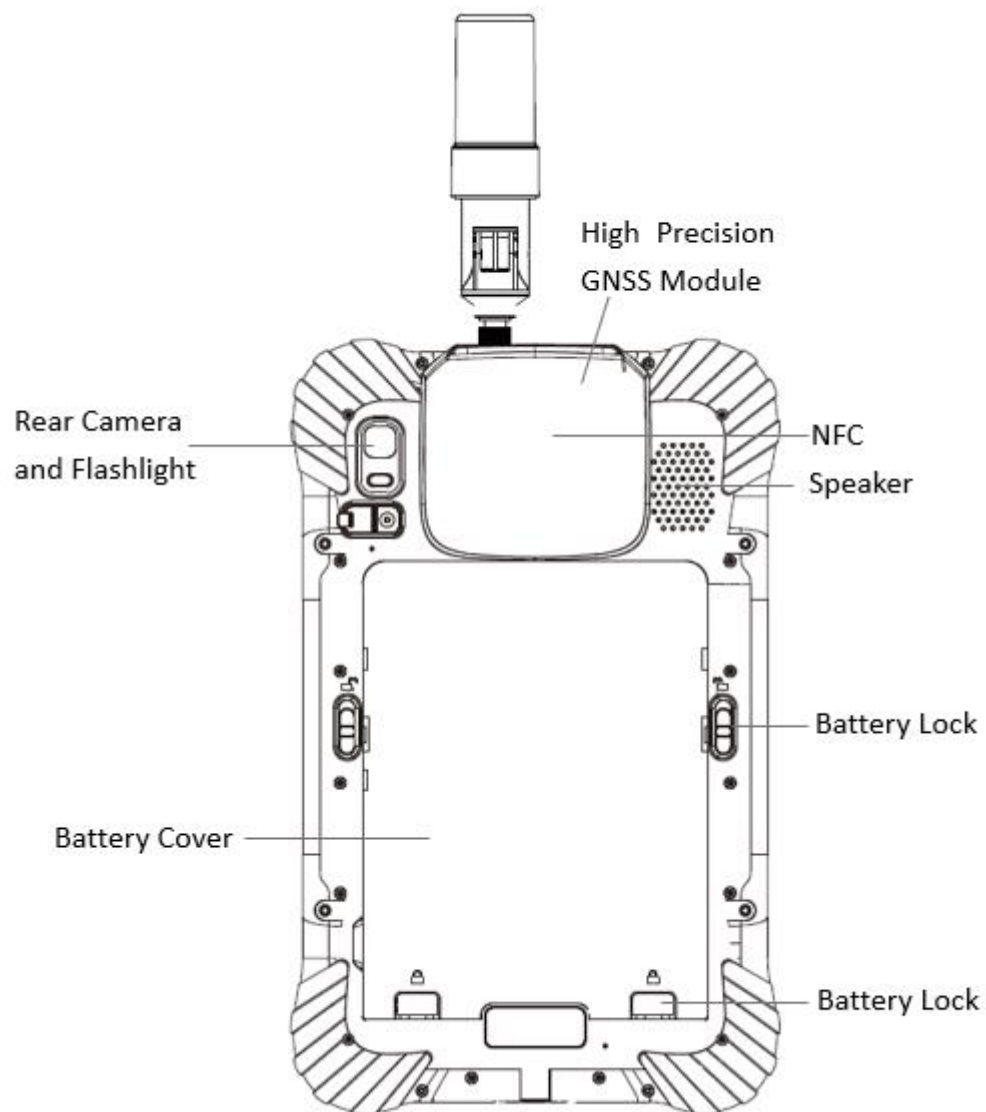
USB Type C

This interface is used for battery charging and data transmission between LT700H and PC by using a USB cable.

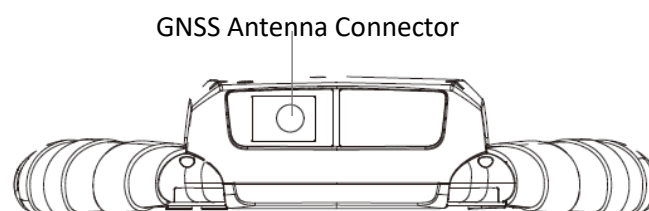
Volume button

These two buttons are used for increasing / decreasing the volume.

2.4 Back View

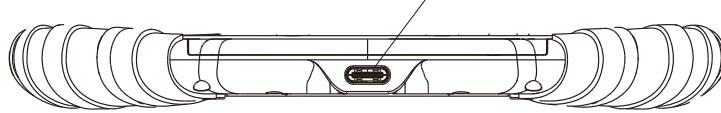


2.5 Top



2.6 Bottom

USB Type-C Charging/Data Interface



The tablet has a internal rechargeable Lithium-ion battery, charge the battery completely before using it for the first time. To charge the battery, please connect to the AC power via the USB cable and power adapter.

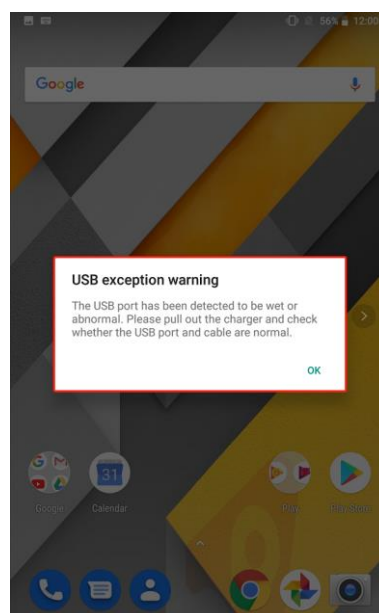


WARNING - Charge the battery only in strict accordance with the instructions. Charging or using the battery in unauthorized equipment or in a wet environment can cause an electric short and damage to the tablet. Do not insert any object into the charging port, it can result in damage to the charging port.

To prevent injury or damage:

- Charge the battery only in CHC authorized equipment. 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.

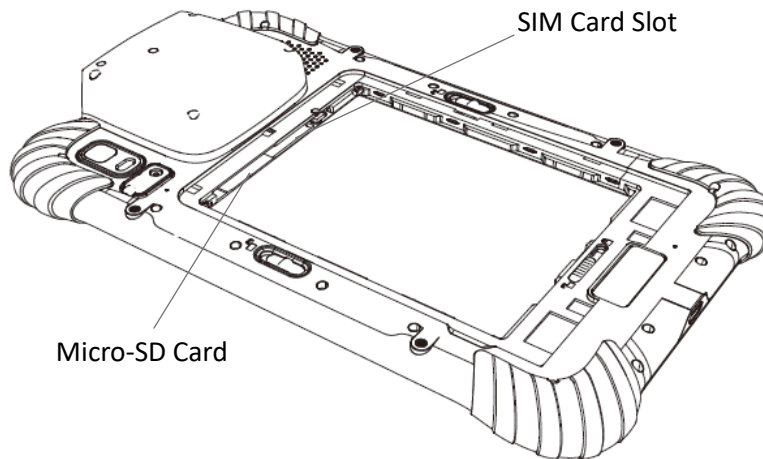
The operation system has short circuit proof design, a pop-up warning will show up if it's short-circuited (as shown below), please unplug the charger and check the charging port, USB cable and power adapter.



Please note: If no action is taken while the warning shows up, this would also result in damage

to the charging port.

2.7 Installation



Please insert the SIM card and the MicroSD card in the direction of the diagram.

3 Basic Operation

3.1 Insert SIM Card and Power On

Refer to **2.7 Installation** to find the SIM card and TF card slot, and then insert the cards into slots correctly.

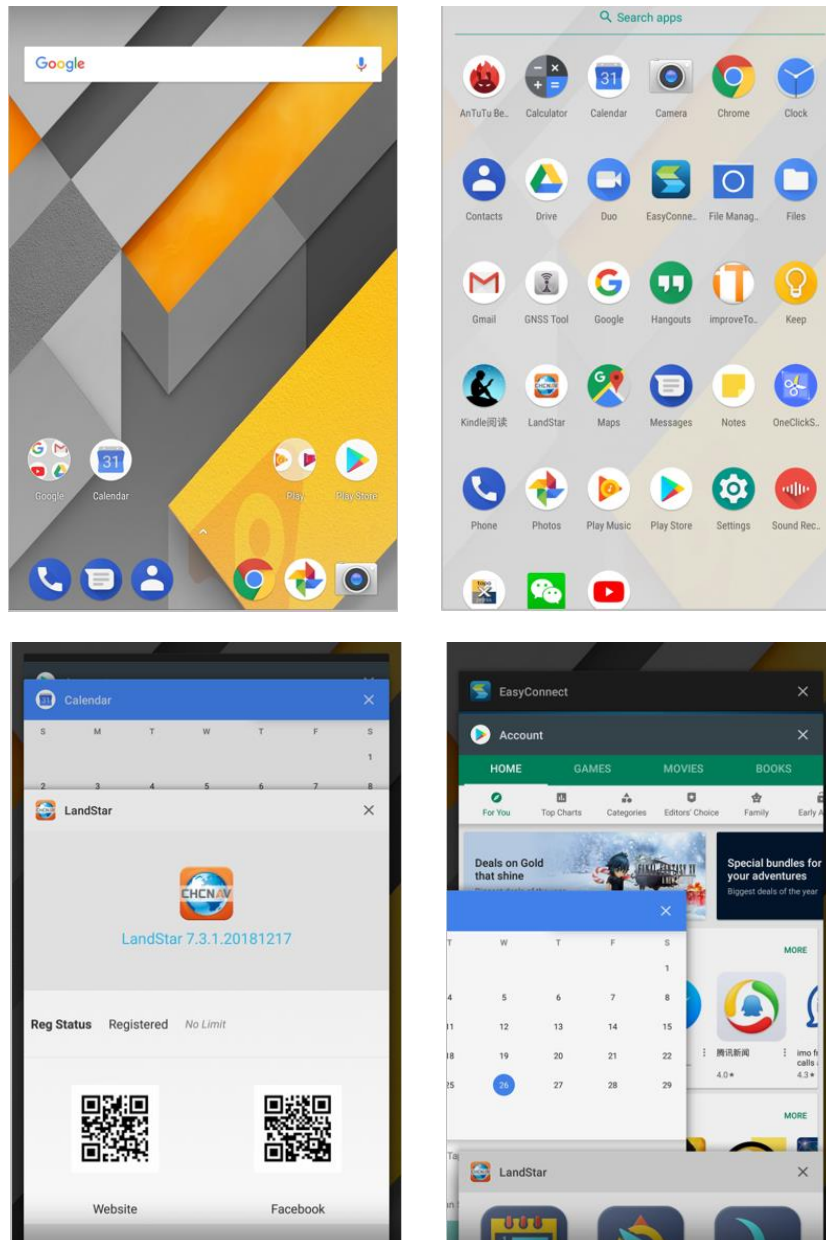
Before powering on LT700H, please make sure to fully charge the battery. Then long press the power button to turn on LT700H and enter its home screen.

Click  to make a phone call.

Click  to access contacts information.

Click  to open a message.

Click  to open a browser.

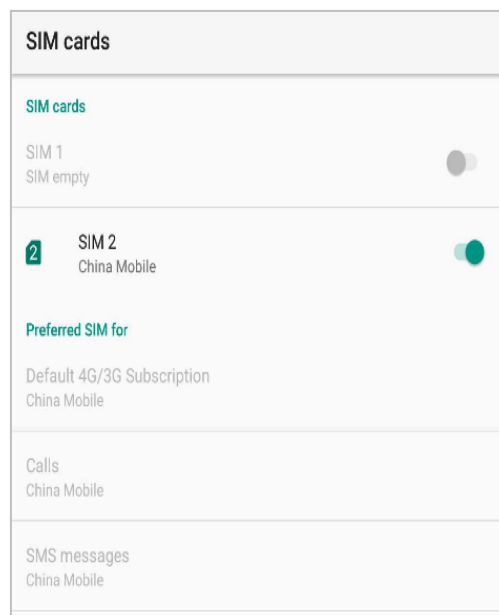


Click  to go back to the previous menu.

Click  to return home screen.

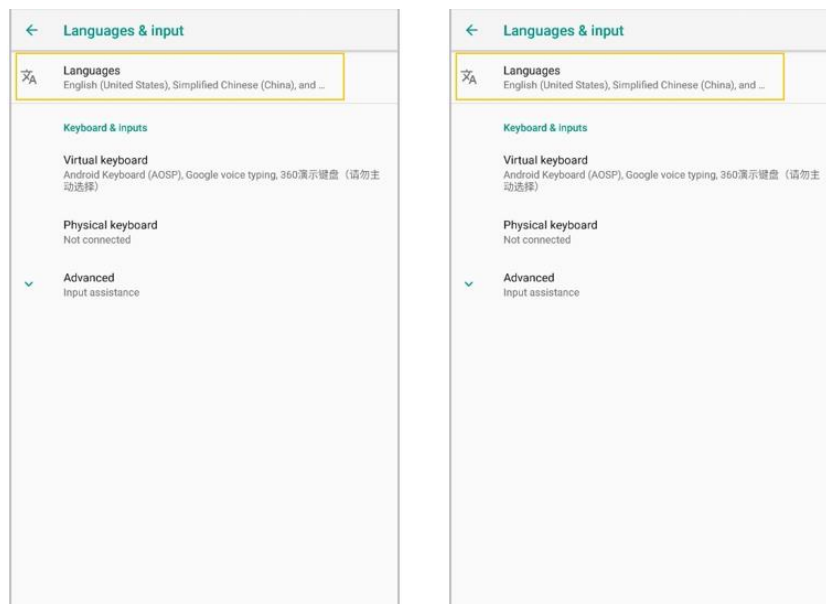
Click  to see all the running apps and then you can close them by sliding them right or left.

After powering on LT700H, click **Settings—Network & Internet—SIM cards** to turn on the SIM cards.



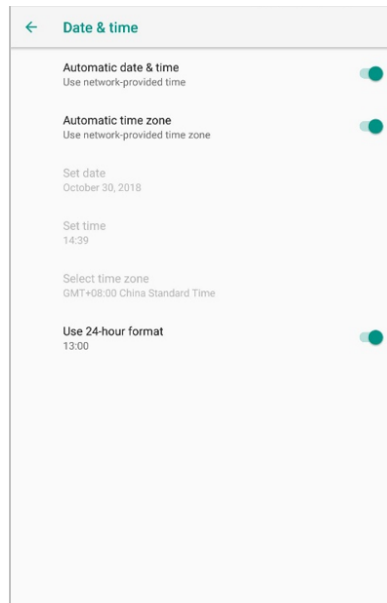
3.2 Language & Input

Click **[Settings]** – **[System]**– **[Language & input]** – **[Language]** to select language. If you have not found the language you want to choose, click **[Add a language]** to find the target language.

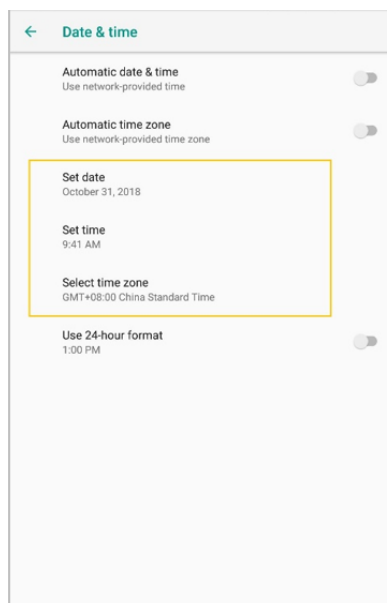


3.3 Set Date & Time

Click **[Settings]** – **[System]**– **[Date & time]** and enter **[Date & time]** interface.



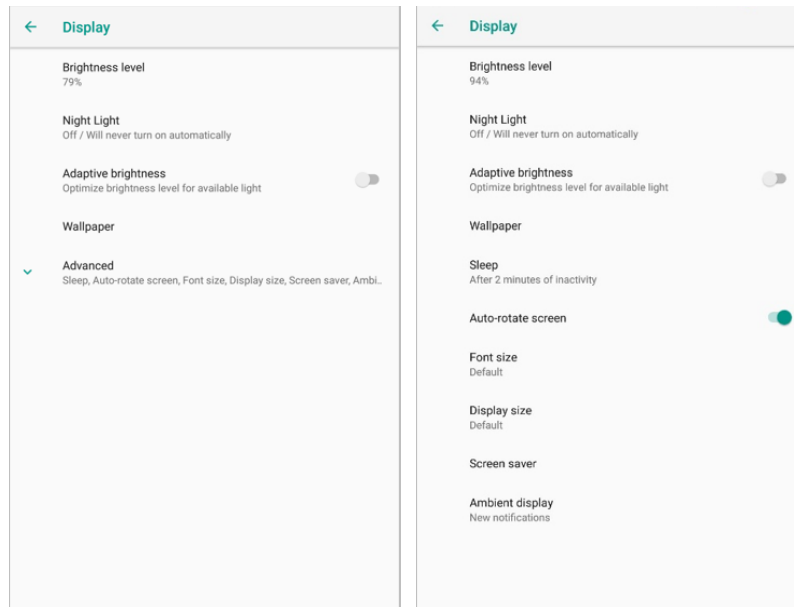
If you want to set date and time by yourself, please turn off the **Automatic date & time** first and then click **Set date** and **Set time** to start your settings.



You can also customize your time zone and choose whether to use the 24-hour format in this interface.

3.4 Display

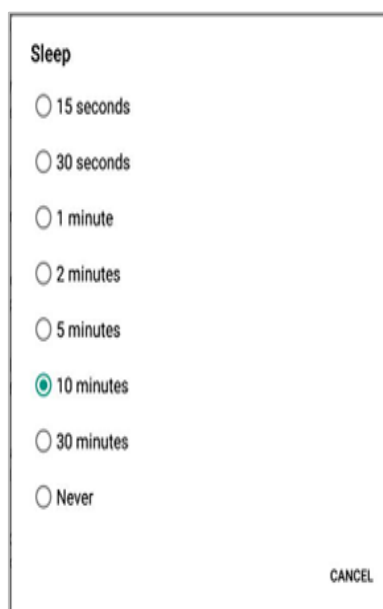
Click **[Settings] – [Display]** to enter **Display** interface. Click **Advanced** to view all the options.



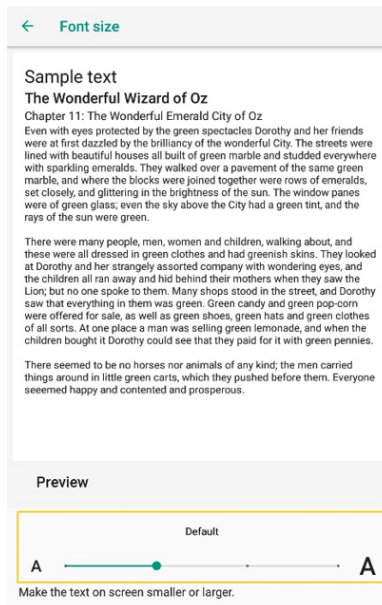
Brightness adjusting: Click **Brightness level** to adjust it according to your preference.



Sleep: Click to optimize the inactivity time LT700H needs to close the screen.

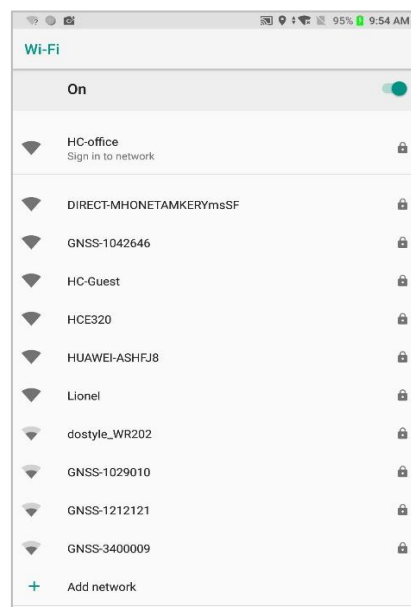


Font size: Click **Font size** to enter Font size interface and then Slide the green dot to change the font size.

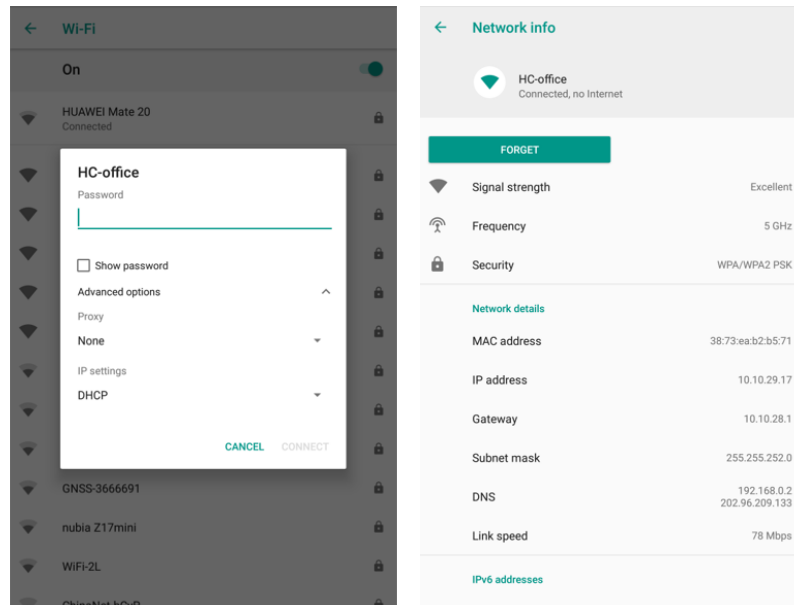


3.5 Wi-Fi

Click **[Settings]** – **[Network & Internet]** – **[Wi-Fi]** to switch on the button.



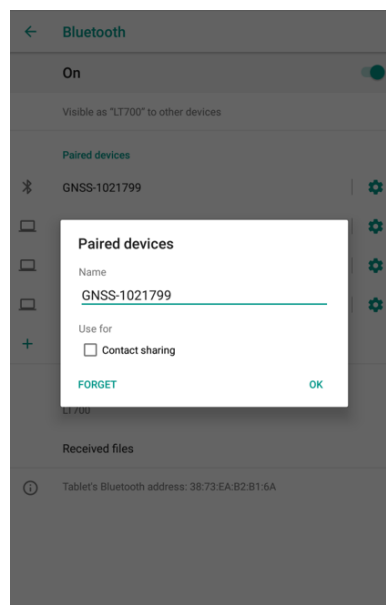
Select **Wi-Fi** and type in its password to connect. After connecting Wi-Fi, the Network info can be checked.



3.6 Bluetooth

Click **[Settings]** – **[Connected device]** – **[Bluetooth]** to turn on the Bluetooth.

Find nearby devices and pair with it.

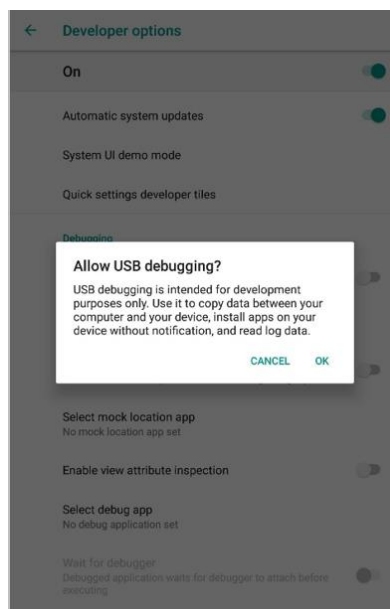


3.7 USB Connection

For connection or data transmission between LT700H and PC, please use the USB data cable as shown below.



Click **[Settings] – [System] – [Developer options] – [USB debugging]** to make sure this function is switched on. After USB data cable connecting with PC, wait until the **Allow USB debugging** dialogue pops up, and then click OK.



You can also use third party software to manage the documents and data stored in LT700H and install software like GNSS Tool into it.

3.8 Use Camera

Make sure that the battery is charged and installed in the receiver.



Click to select recording the video or panorama mode.

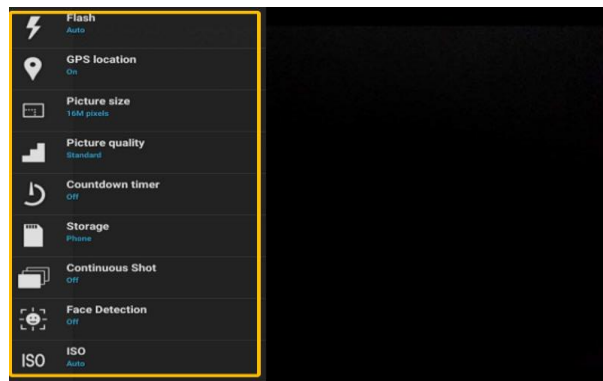


Click to take a photo.



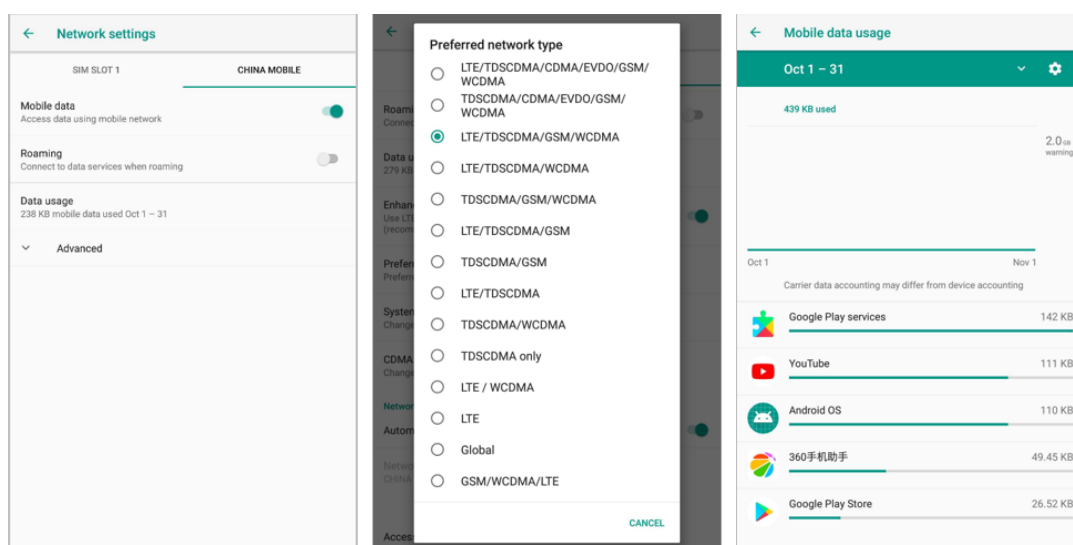
Camera Settings

Click to configure related parameters.



3.9 Log in 4G

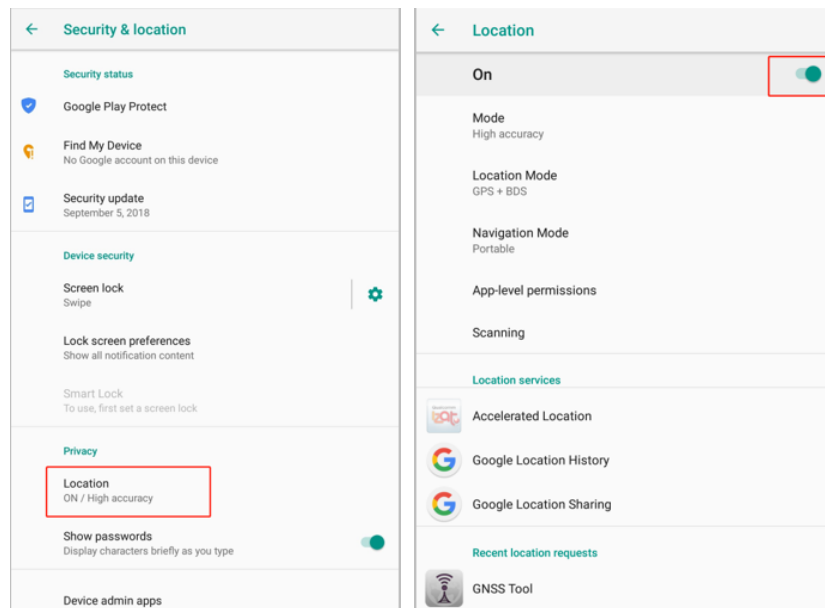
After inserting your SIM card, click **[Settings]** – **[Network & Internet]** – **[Mobile Networks]** – **[Advanced]** – **[Preferred network type]** and select corresponding network type of your SIM card. Then turn on **Mobile data** and click **Data usage** to see data usage.



3.10 Location

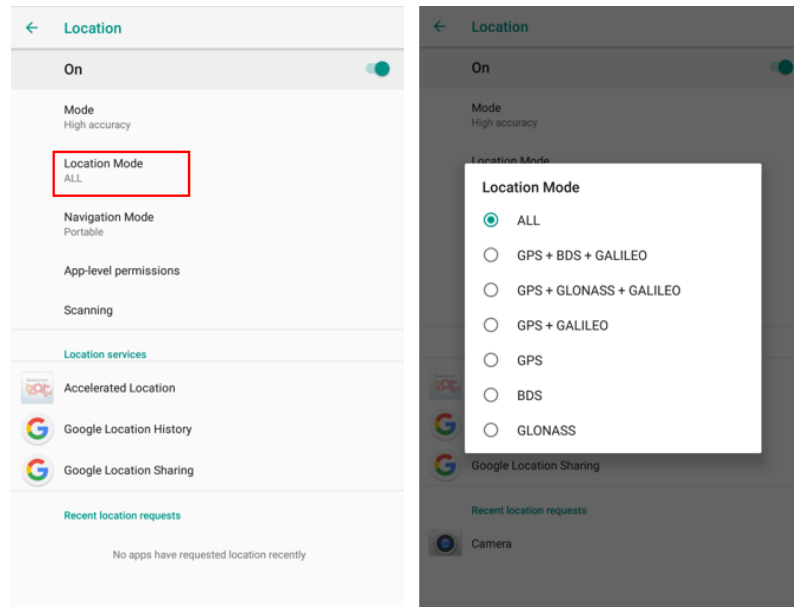
3.10.1 Turn on The Location Service

Click **[Settings]** – **[Security & Location]** – **[Location]** – **[On]** to switch on location service.



3.10.2 Select the Constellation Combination

On the **[Location]** panel, the choose **[Location Mode]**, and the user can choose the constellation/constellations.



For LT700H, there are six options:

ALL: The device will use all data to do the positioning. Note that this is the recommended setting to achieve optimal positioning performances.

GPS+BDS+GALILEO: The device will use GPS, BDS and GALILEO data;

GPS+GLONASS+GALILEO: The device will use GPS, GLONASS and GALILEO data;

GPS+GALILEO: The device will use GPS, GALILEO data;

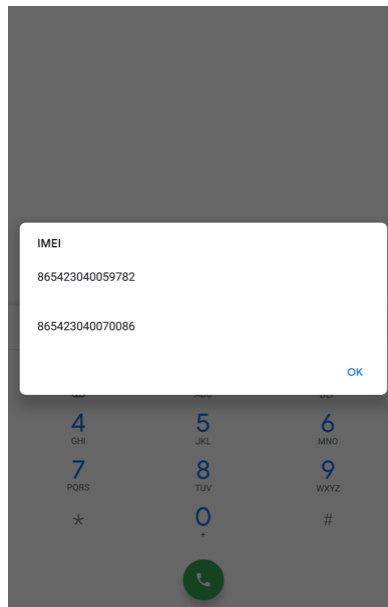
GPS: The device will use GPS data

BDS: The device will use BDS signal only;

GLONASS: The device will use GLONASS signal only;

3.11 Checking the IMEI Number of The Device

Turn the LT700H on and enter the dialing panel, tap ‘*#06#’, the IMEI numbers show up automatically.

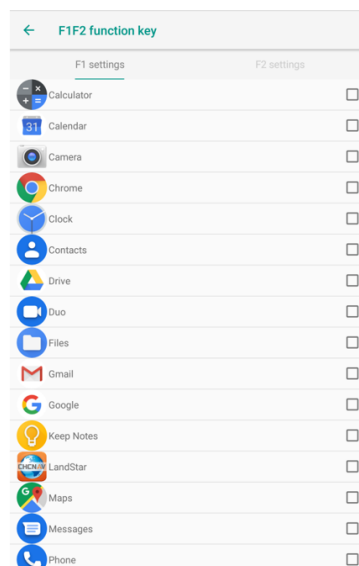


3.12 Edit F1/F2 Function Key

The F1/F2 Function Key can be edited to launch the APPs in the device.

Enter the edit interface via **[Settings] – [System] – [Gestures] – [F1 F2 Function Key]**.

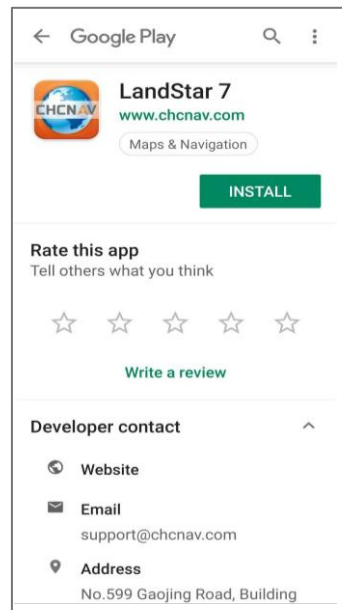
Check the APP for corresponding function key in **[F1 Settings] / [F2 Settings]**.



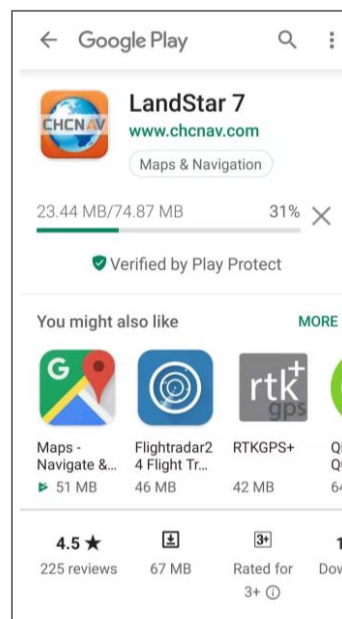
4 Getting Start with LandStar 7

4.1 LandStar7 Installation

1. Open Google Play store and search for LandStar 7



2. Click [Install] and the installation process start;



3. Wait for the installing, and the 'APP installed' shows up when the installation finished.



4.2 Connect the LT700H to internet

Please select Wi-Fi or mobile network to enable Internet to allow a connection to your GNSS RTK Corrections Service provider.

4.3 Create a project

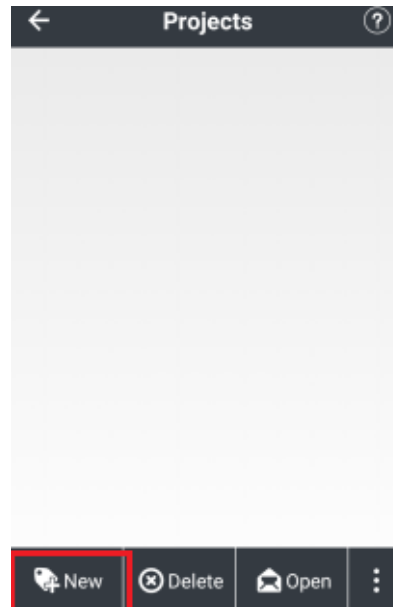
- (1) Power on the LT700H: Long press the power button for 3-5 seconds.
- (2) Launch the LandStar 7 software.



(3) Tap **[Projects]** - **[Project]** to create or open a project.

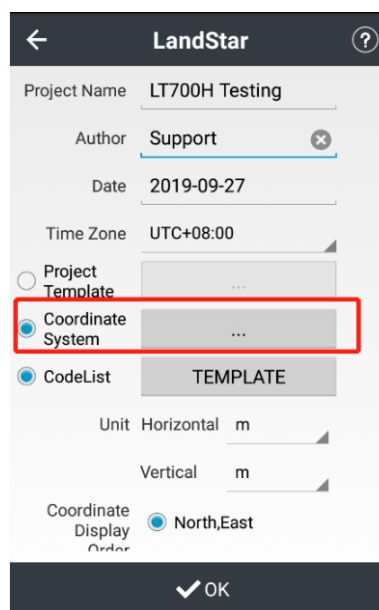


(4) Tap **[New]** to create a new project.

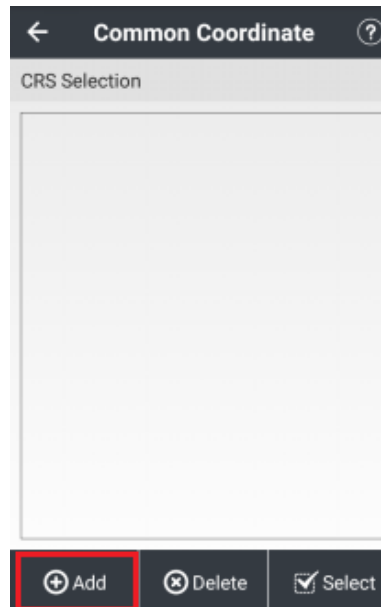


(5) Input the project name, author and the time zone of working region.

(6) Tap **[Coordinate System]** to choose the coordinate system of the project.



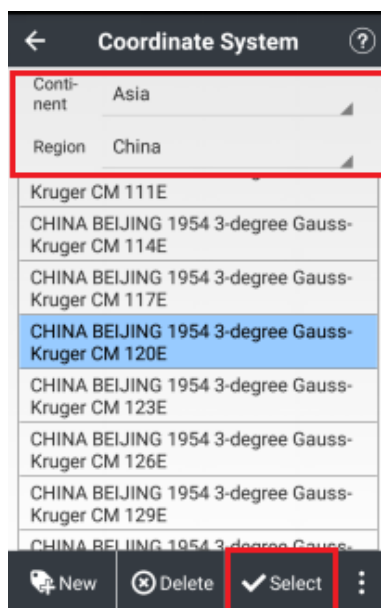
(7) Tap **[Add]** to add pre-define coordinate system in the list.



(8) Select the continent and region according to your working area.

(9) Select the proper coordinate system to use.

(10) Tap **[Select]** to confirm.



(11) Selected coordinate system is available in the pre-define list, tap **[Select]** to confirm.



(12) Check the parameters of the coordinate system and tap **[Accept]** to confirm.

← CRS ?

Name CHINA BEIJING 1954 3-degree
Crassowsky 1940

Ellipsoid Projection Datum

Ellipsoid Name: Krassowsky 1940

a 6378245.000000

1/f 298.3000000000

Positive Direction NorthEast

South Azimuth No

Logout ☒ Accept Edit

(13) Tap [OK] to finish the project setting.

← LandStar ?

Project Name LT700H Testing

Author Support

Date 2019-09-27

Time Zone UTC+08:00

Project Template

☒ Coordinate System CHINA BEIJING

☒ CodeList TEMPLATE

Unit Horizontal m

Vertical m

Coordinate Display North,East

Order

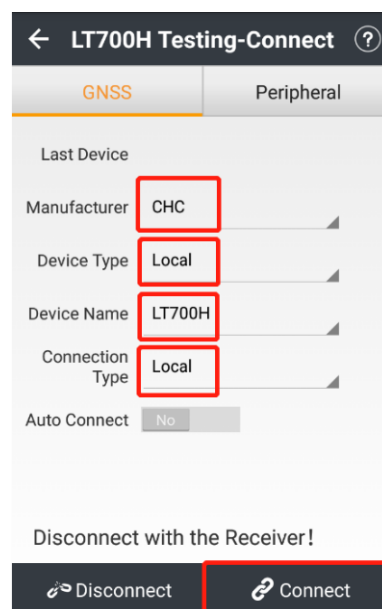
✓ OK

4.4 Connect to the LT700H GNSS Module

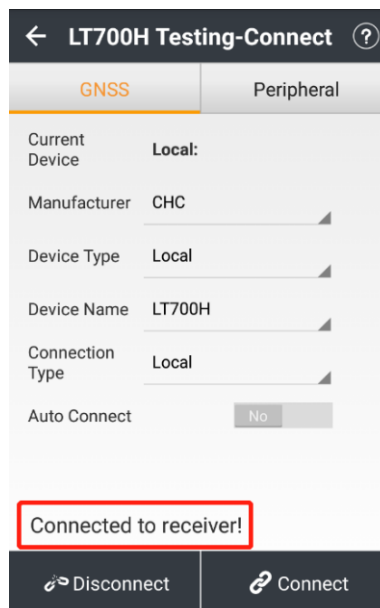
(1) Tap [Config] - [Connect].



(2) Select Manufacturer as **[CHC]**, Device Type as **[Local]**, Device Name as **[LT700H]**, Connection Type as **[Local]**.

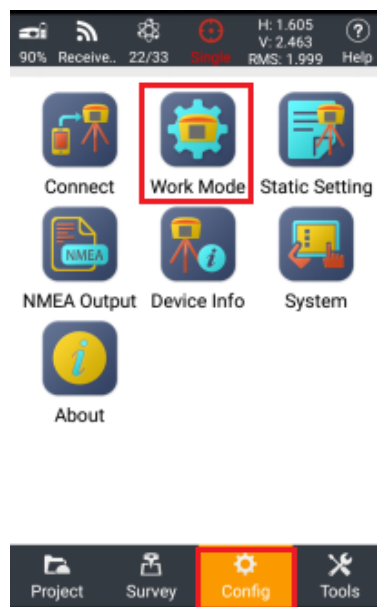


(3) When connected to the LT700H GNSS, the message “Connected to receiver!” appears.



4.5 CORS / RTK Network Correction Login

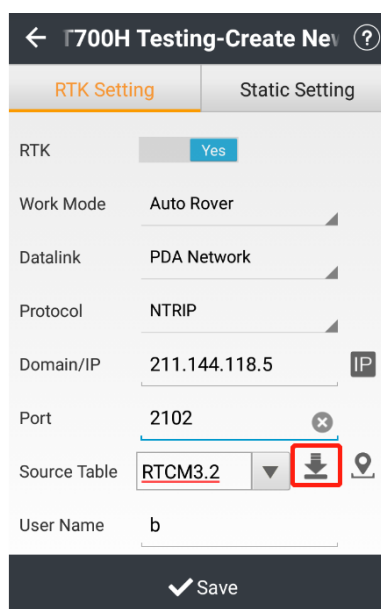
(1) Tap [Config] - [Work Mode] to create or accept a work mode.



(2) Tap **[New]** to create a new work mode.



(3) Select the work mode as **[Auto Rover]**, datalink as **[PDA Network]**, protocol as **[Ntrip]**, type in the corresponding Ntrip **[IP]** and **[Port]**. Tap **[Download]** button to load the mountpoints source table.



(4) Input the username and password of your NTRIP account.

Note: If the selected mountpoint does not contain the RTCM 1021 - 1027 messages, leave the related RTCM message setting buttons set to "NO".

(5) Tap **[Save]**.

← LT700H Testing-Create New ?

RTK Setting Static Setting

Password •

☐ Correct, don't remind me next time

1021-1022 No

1023-1024 No

1025-1027 No

Save Password Yes

Auto Login Yes

Use VRS Yes

✓ Save

(6) Input the name of the new work mode and tap **[OK]**.

← Testing-Create New Work ?

RTK Setting Static Setting

Port 2102

Source Table RTCM3.2

Input a name for the new mode!

Rover PDA

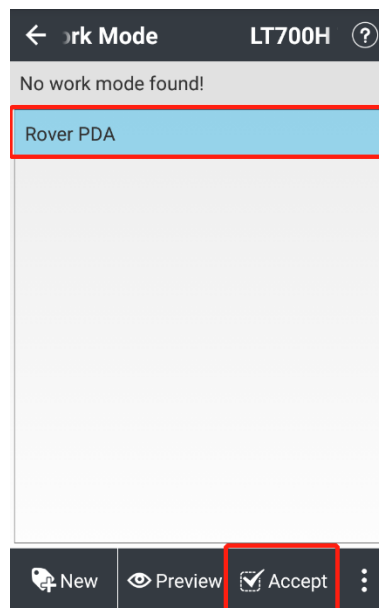
Cancel OK

1023-1024 No

1025-1027 No

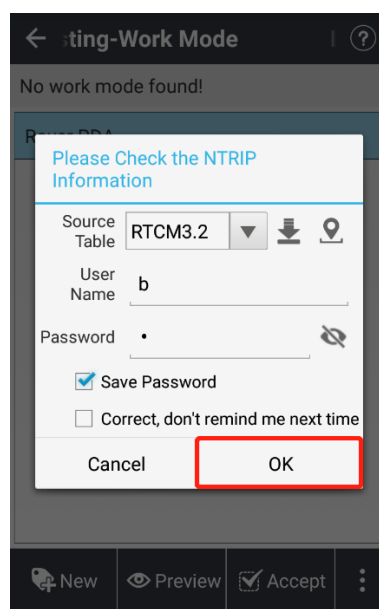
✓ Save

(7) Select the new work mode in the **[Work Mode List]** and tap **[Accept]**.



(8) Check the information of NTRIP account and change it as need. Tick on **Correct**, **[Don't remind me next time]** when there is nothing need to change.

(9) Click **[Ok]**.

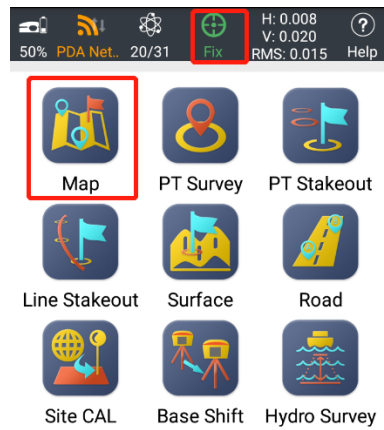


4.6 Survey

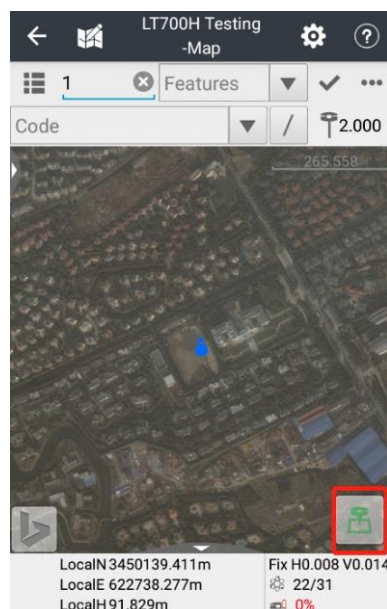
(1) Wait until the software shows **[RTD]**, **[Float]** or **[Fix]**, which means the LT700H is using the

GNSS correction data from RTK Network.

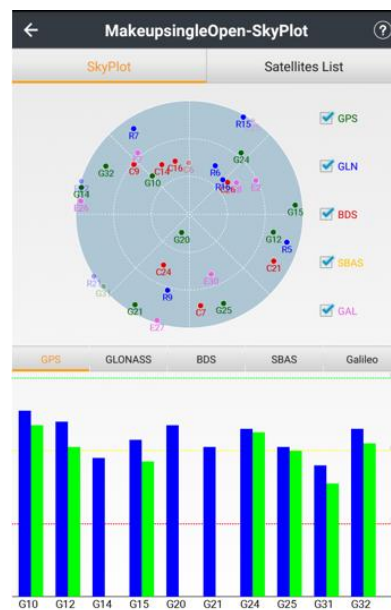
(2) Tap the **[Survey]** - **[Map]** to start your work.



(3) Tap **[Survey]** icon to collect the points.



Click **Sky Plot** and see how many satellites (including GPS, GLONASS, BDS, GALILEO and SBAS) the device is currently tracking.





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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

Make your work more efficient

1) FCC 15.19

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.

2) FCC 15.21

Warning: Changes or modifications to this unit not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

3) FCC 15.105

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: 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.

Specific Absorption Rate (SAR) information:

This Smart Phone meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health.

FCC RF Exposure Information and Statement The SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. Device types: Smart handheld printer (FCC ID: SY4-B01014) has also been tested against this SAR limit. The highest SAR

value reported under this standard during product certification is 1.28W/kg when properly worn on the body. This device was tested for typical body-worn operations with the back of the Smart Phone kept 00mm from the body. To maintain compliance with FCC RF exposure requirements, use accessories that maintain a 00cm separation distance between the user's body and the back of the Tablet PC. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided. very high volume, prolonged listening to a mobile phone can damage your hearing.