

LT600 SERIES | GETTING STARTED GUIDE

GNSS DATA COLLECTING TERMINAL



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1. INTRODUCTION

Thank you for choosing CHC LT600 Series GNSS Hand-held Receiver.

This Getting Started Guide will provide useful information about your receiver. It will also guide you through your first step of using LT600 Series 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 LT600 Series. Alternatively, please request technical support using the CHC Website (www.chcnav.com) or CHC technical support email (support@chcnav.com).

1.2. YOUR COMMENTS

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

1.3. SAFETY INFORMATION

This manual describes CHC LT600 Series GNSS Data Collecting Terminal. Before using the LT600 Series, please make sure that you have read and understood this Getting Started Guide, as well as the safety requirements.

1.4. USE AND CARE

The LT600 Series is designed to withstand the rough environment that typically occurs in the field. However, the LT600 Series is high-precision electronic equipment and should be treated with reasonable care.

2. OVERVIEW

2.1. FEATURES

LT600 is a high accuracy GNSS data collecting terminal independently developed by CHC, which adopts industrial third level design, IP65 protection level. Positioning accuracy of the LT600 could reach decimeter, with alternative configuration of 1D/2D bar code scanning, RFTD, Infrared, NFC and so on. Equipped with high sensitive point touch pen, LT600 makes it more convenient to collect data and map ground. 4G cellular modem with Dual-SIM-Dual-Standby offers more choices of experiencing high speed data transmitting. With 8 inch screen and 16:9 scale, LT600 provides you more open vision and more convenience.

2.2. SPECIFICATIONS

	LT600
Operating System	Android 5.1
CPU	Quad-core 1GHz
RAM	2GB
Flash Memory	32GB
Memory Extend	Micro SD, up to 128G
GNSS	Support GPS+GLONASS or GPS+BDS
Accuracy	Stand alone:2-5m; SBAS: 2m
Channel	72
Cold Start	30s
Warm Start	1s
WIFI	802.11 b/g/n
Cellular Modem	TDLTE, TDSCDMA, EDGE, GSM, WCDMA
Bluetooth	V4.1
USB	Micro USB, OTG(support hot plug)
Bar Code	1D/2D bar code scanner(optional)
Li-ion Battery	9000mAh
Voltage	3.8V
Battery Life	>12h(continuous work)
Charging Time	<4h
Front Camera	2.0 megapixel
Back Camera	8.0 megapixel
Flash Light	Support

Physical specifications

Display

- Size: 8inch Corning Gorilla Glass touch screen
- Resolution: 1280*800
- Brightness: 450cd/m²
- Touch screen: Capacitance touch, 5 points touch screen
- Point touch pen: Mapping pen with high accuracy

Physical

- Dust proof and waterproof: IP65
- Shock: Survives 1.5 meter drop onto concrete
- Humidity: 5%RH - 95%RH (without condensation)
- Dimension: 235mm*138mm* 30mm (L*W*H)
- Weight: 660g (with battery)
- Operating temperature:-20 °C to + 60 °C
- Storage temperature: -30 °C to + 70 °C

Physical Properties

- Bar code: 1D/2D scanning mode (optional)
- NFC: Optional
- G-sensor: Support
- Light sensor: Support
- Distance sensor: Support
- E-compass: Support
- Gyroscope: Support

Geodesical

3. LT600 OVERVIEW

3.1. FRONT VIEW



- **Power Button**

- Turn ON: Press the button for 1-2 seconds, the Power Indicator will turn on and the boot screen will appear, and then the LT600 will enter the operation system after 30 seconds.
- Turn OFF: Press the button for 1-2 seconds, the SELECT dialogue box will pop up, select Power off to turn off the device.
- Restart: Press the button for 1-2 seconds, the SELECT dialogue box will pop up, select Restart to restart the device.

- **Menu Button**

Click this button to bring out the start menu.

- **Home Button**

Use the home button to return main menu.

- **Return Button**

Press this button to go back to previous menu.

- **SIM**

Insert SIM card into this card slot.

- **TF**

Insert TF card into this card slot.

- **Charging/Data Interface**

This interface is used for battery charging and data transmission between LT600 and PC through USB cable.

- **Headset Jack**

Insert your headset into this socket.

Geodesical

3.2. BACK VIEW



3.3. SIDE VIEW



4. BASIC OPERATION

4.1. POWER ON

Before powering on LT600, please make sure the battery has plenty of power. Then long press the power button for 1-2 seconds to turn on LT600 and enter its home screen (**Figure 1**).

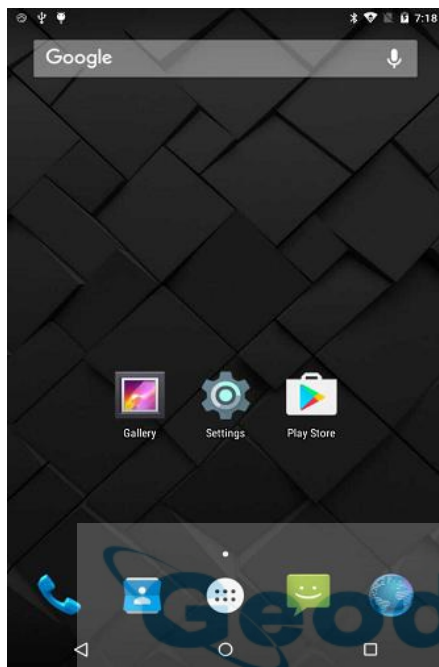


Figure 1

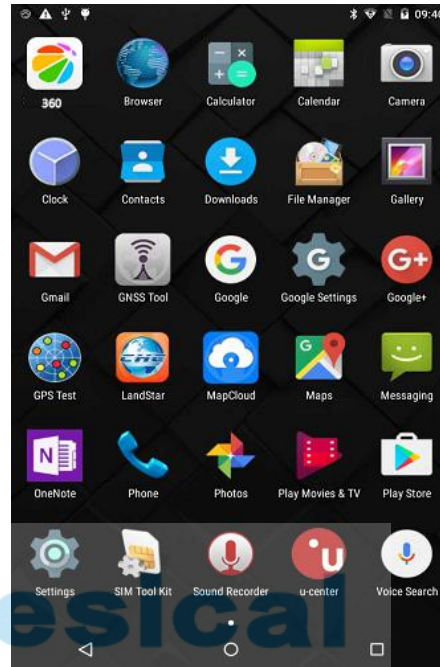






Figure 2

Click  to make a phone call.

Click  to access contacts information.

Click  to open messaging.

Click  to open browser.

Click  to open the drawer to see all the apps that have been installed (**Figure 2**).

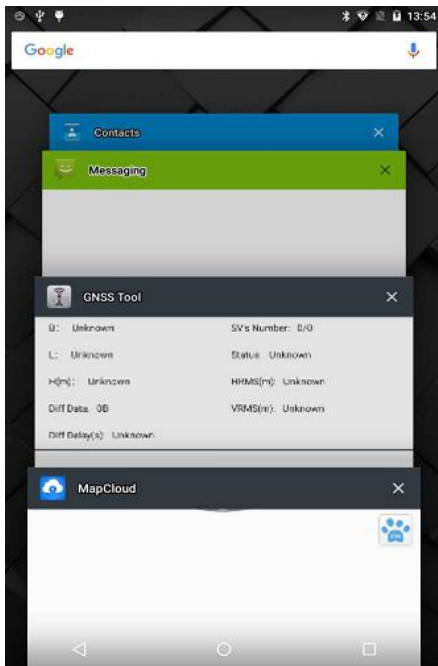


Figure 3

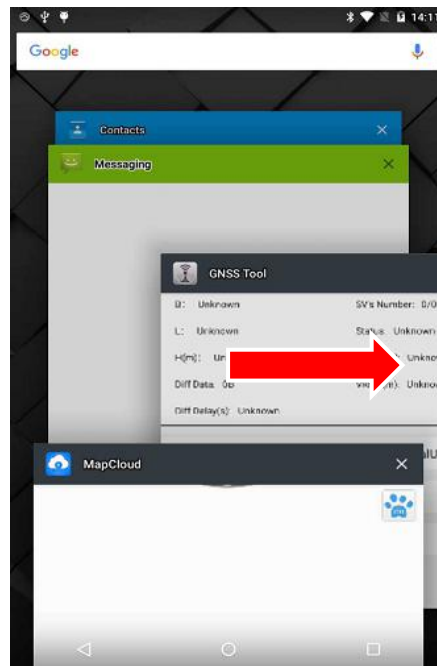




Figure 4

Use virtual button key to facilitate your operation with LT600.

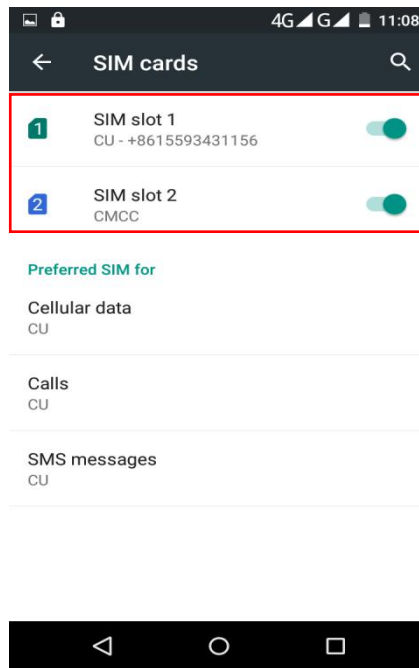
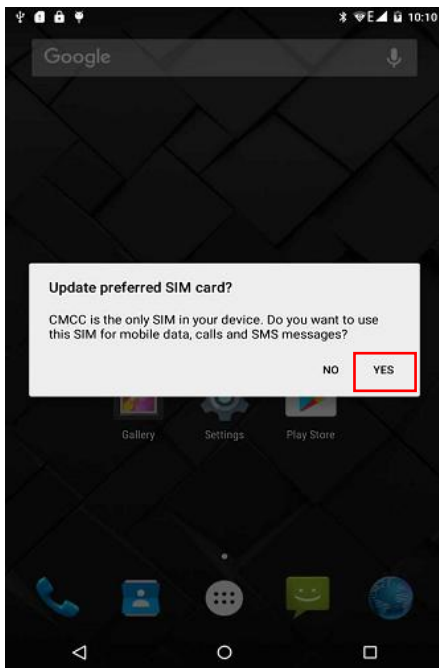
Click  to go back to previous menu.

Click  to return home screen.

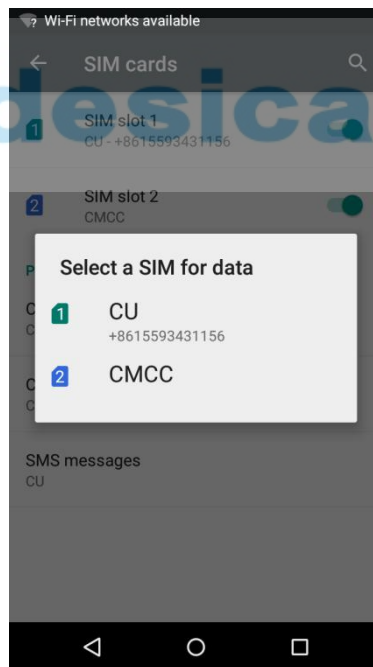
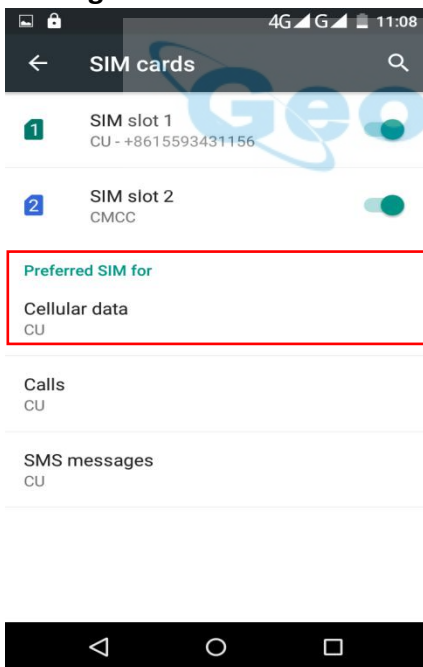
Click  to see all the running apps (**Fig. 3**) and then you can remove apps by sliding them towards left or right side (**Fig. 4**).

4.2. INSERT SIM CARD

Please power off the LT600 first and refer **3.3 dFront View** to insert the cards into slots correctly. Then power on LT600 (refer to **4.2 Power on**), Click **OK** in the pop up dialogue to turn on the SIM card.

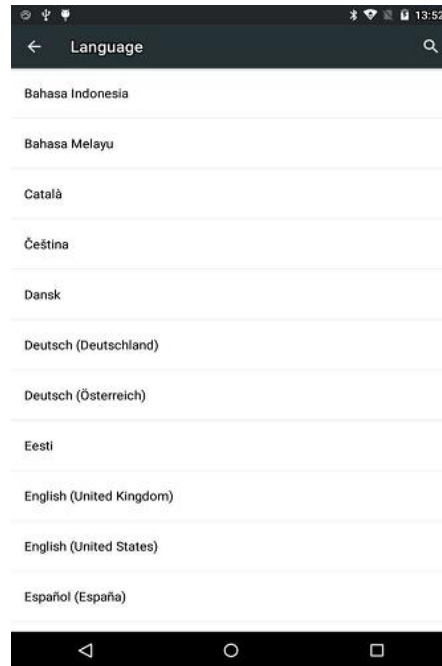
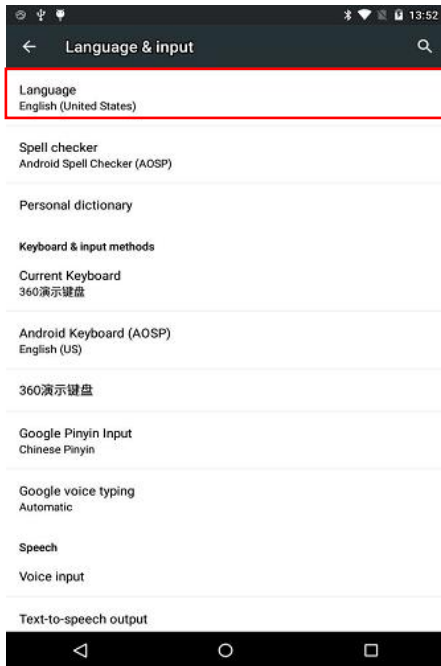


Two SIM cards can be inserted into LT600 together, but they can't be used at the same time. Users have to switch between two cards while using **Mobile data, Calls or SMS messages**.



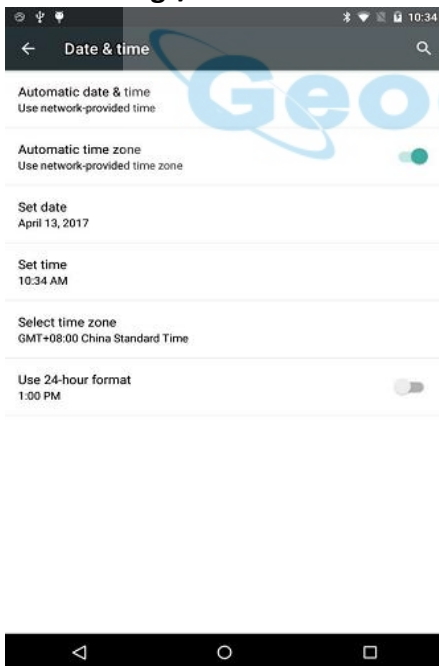
4.3. LANGUAGE & INPUT

Click **Settings/Language & input/Language** to select language.

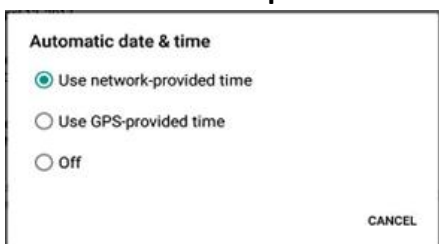


4.4. DATE & TIME

Click **Settings/Date & time** and enter **Date & time** interface.



If you want to use date and time from network or GPS, click **Automatic date & time** to select **Use network-provided time** or **Use GPS-provided time**:



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



4.5. DISPLAY

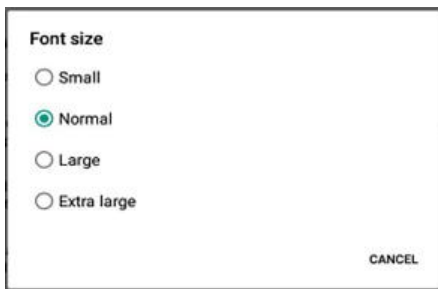
Click **Settings/Display** to enter **Display** interface.



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



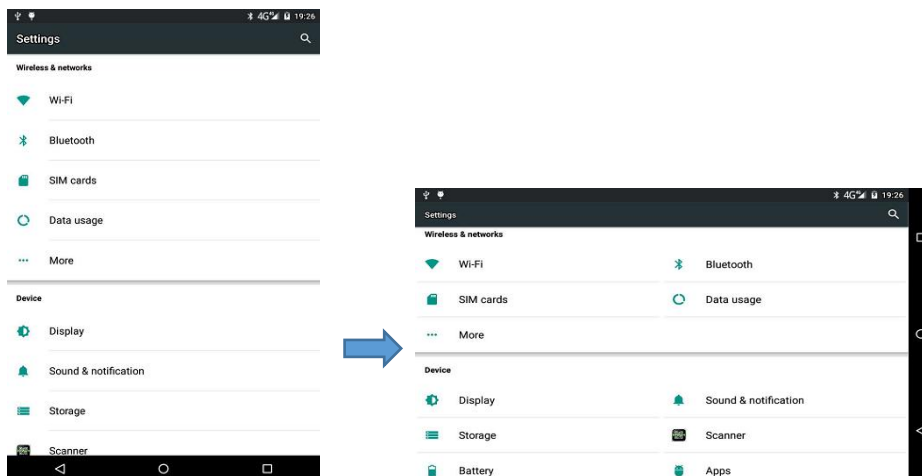
Sleep: Click to optimize the inactivity time.



Font size: Click to change the font size.

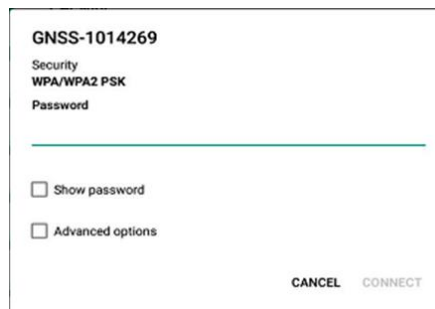
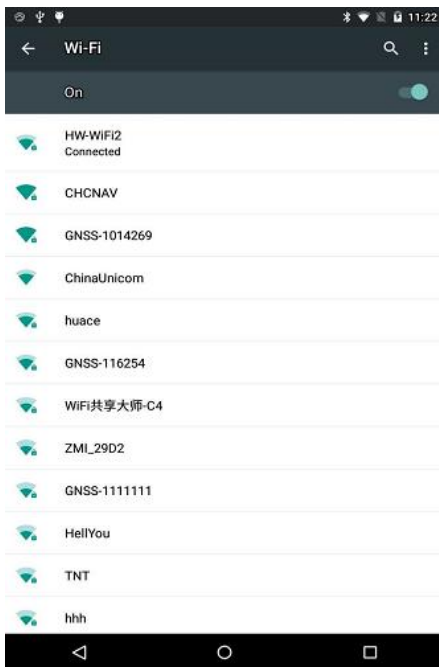
4.6. PORTRAIT & LANDSCAPE

Click **Settings/Accessibility/Auto-rotate** screen to switch between **Portrait** and **Landscape** mode.



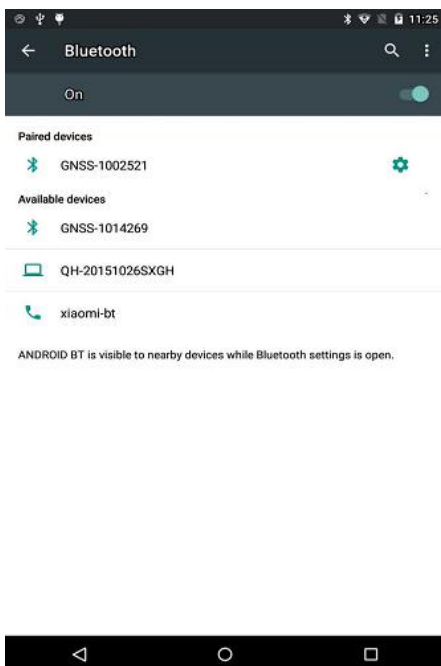
4.7. WIFI

Click **Settings/WIFI** to switch on WIFI. Select WIFI and type in its password to connect.



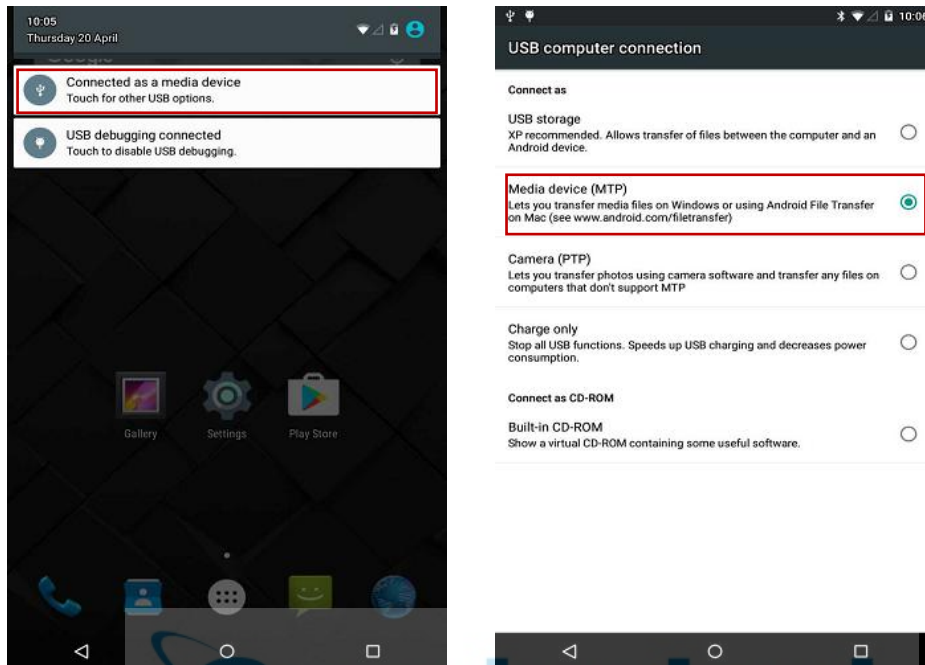
4.8. BLUETOOTH

Click **Settings/Bluetooth** to turn on the Bluetooth. Find nearby devices and pair with it.



4.9. USB CONNECTION

For connection or data transmission between LT600 and the office computer, please use the USB data cable. Select connection type as **Media device (MTP)** in notification center as shown below.

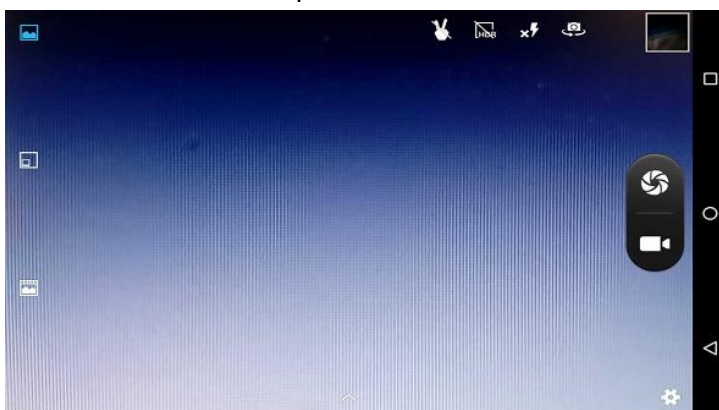


Before connection, please click **Settings/Developer options/USB debugging** to make sure this function is switched on. After USB data cable is connected with PC, wait until the **Allow USB debugging** dialogue pops up, click OK.

You can also use Android mobile phone assistant to manage the documents and data stored in LT600 and install software like MapCloud3.0, GNSSTool.

4.10. USE CAMERA

Click **Camera** icon to open it.





Click to start recording the video, click again to finish.



Click to take a photo.

Slide fingers in the left column to switch between 5 different modes:



Normal mode



PIP mode



Live photo mode



Panorama mode

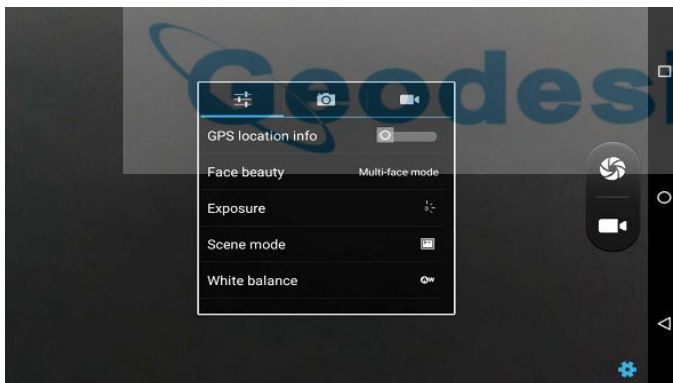


Multi angle view mode



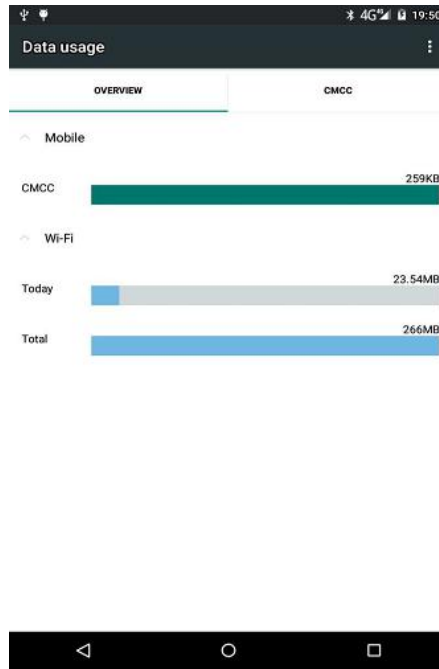
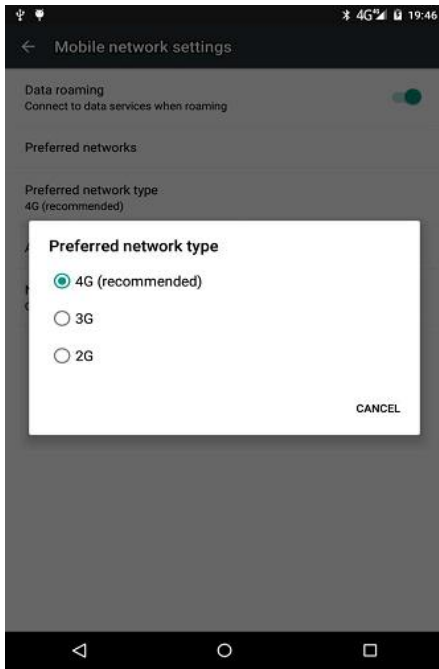
Camera Settings

Click to configure related parameters



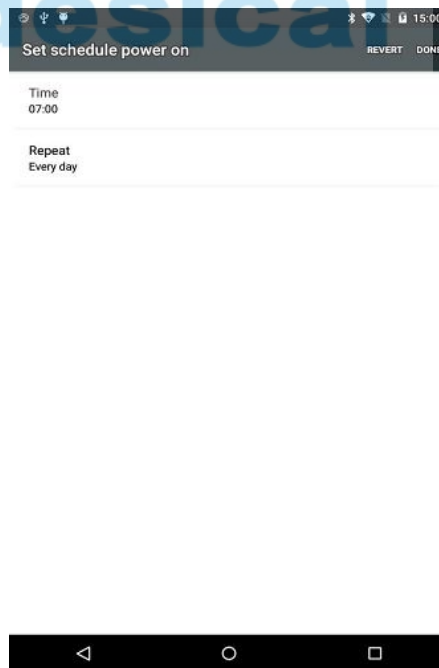
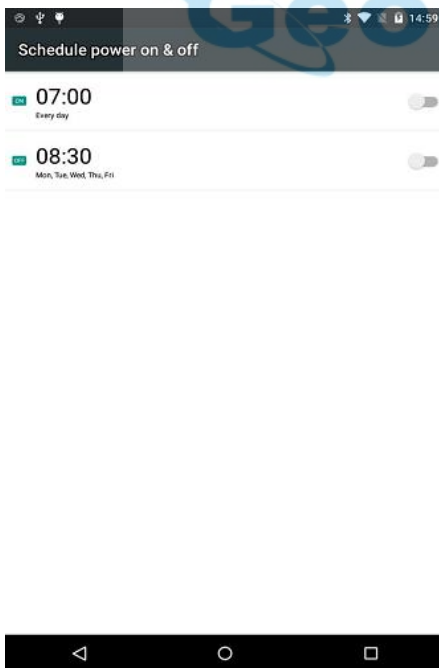
4.11. LOG IN 4G

After inserting your SIM card, click **Settings/More/Mobile Networks/Preferred network type** and select corresponding network type of your SIM card. Then Click SIM card icon in the pull down menu and turn on **Mobile data** and click **More Settings** to see data usage.



4.12. SCHEDULED POWER ON & OFF

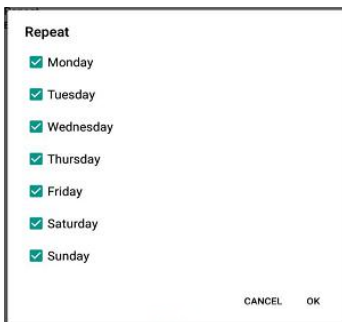
LT600 allows users to achieve scheduled power on and off by setting the power up & off time and repeat time.



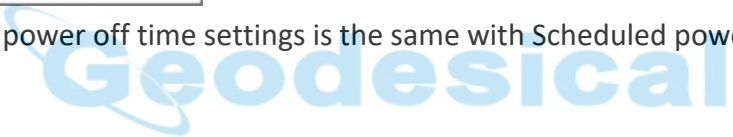
Set Scheduled power on time and click OK.



Set scheduled power on repeat time and click OK.

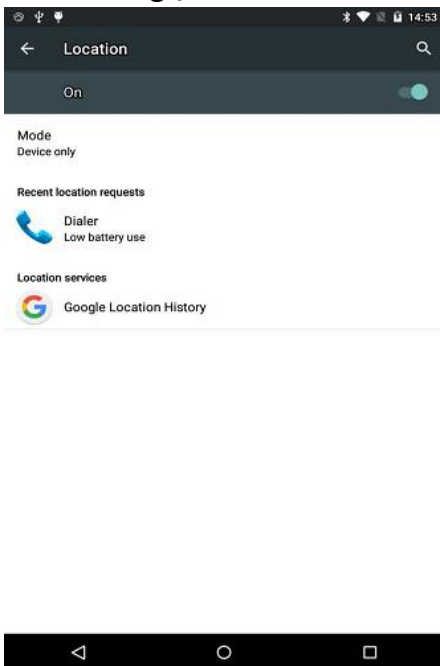


Scheduled power off time settings is the same with Scheduled power on.



4.13. LOCATION

Click **Settings/Location** to switch on location service.



5. GETTING STARTED WITH MAP CLOUD 3.0

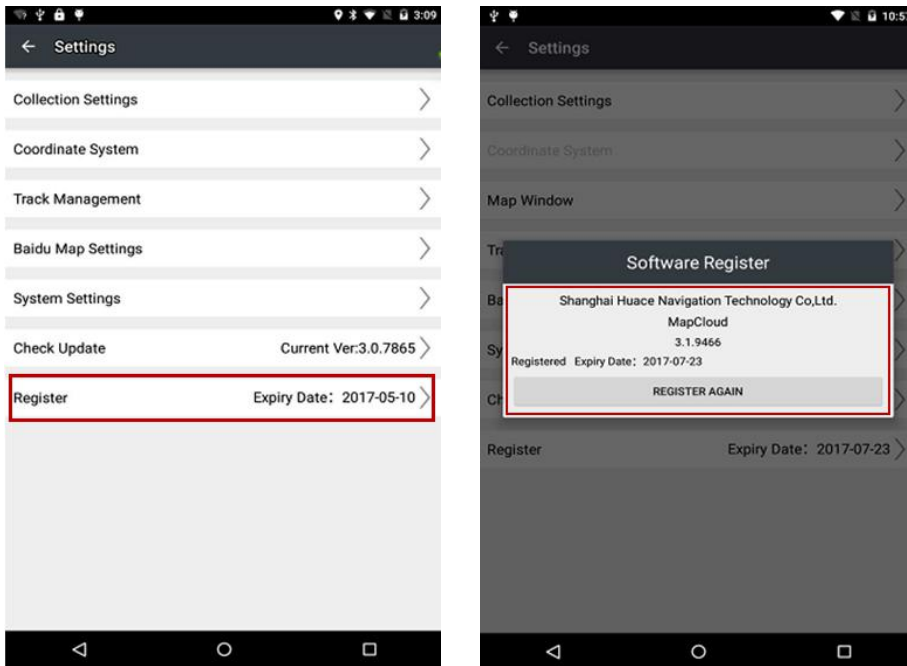
Map Cloud 3.0 is a type of mobile GIS data collecting software developed independently by CHC. Combining map display, GPS data collecting, edit, attribute input, this software provides a perfect GIS solution for users. Let's get started from the registration part.

5.1. REGISTER

1. Click Settings > Register in the upper right corner to find your Device ID and send it to support@chcnv.com. We will provide the License you need for registration.



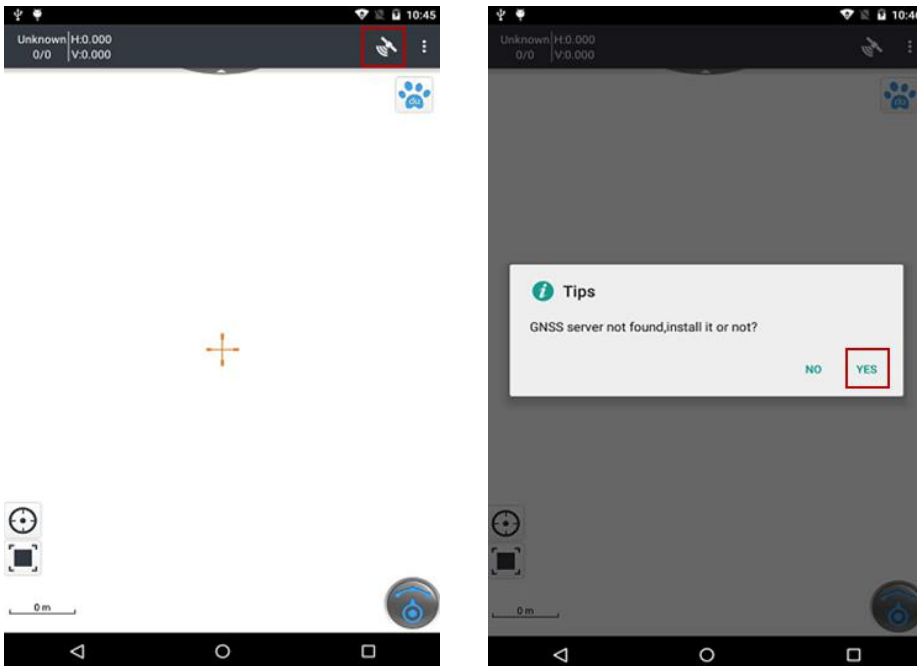
2. After applying license successfully, users can check registration information like expire date as shown below.

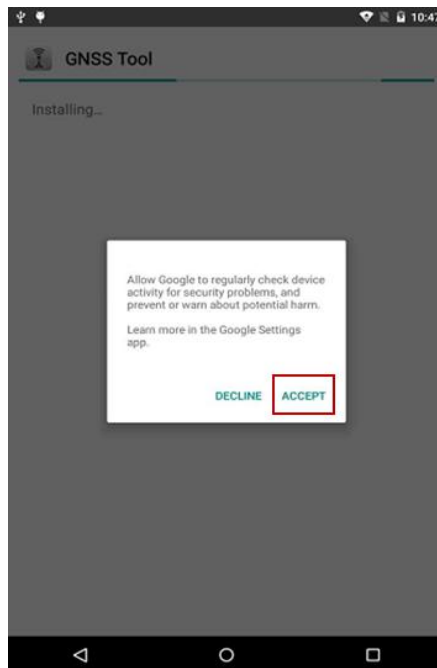
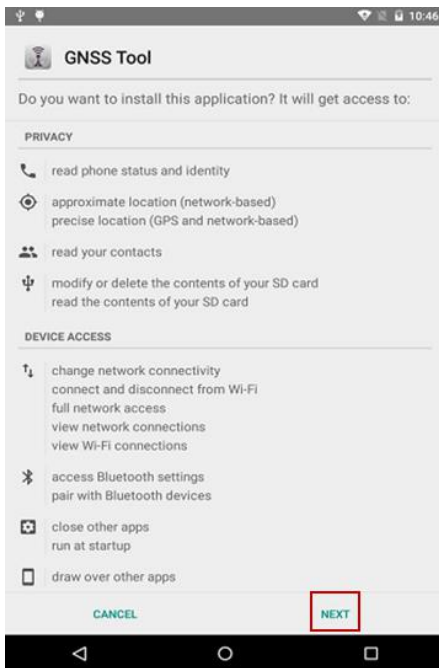


5.2. INSTALL & UPDATE GNSSTOOL



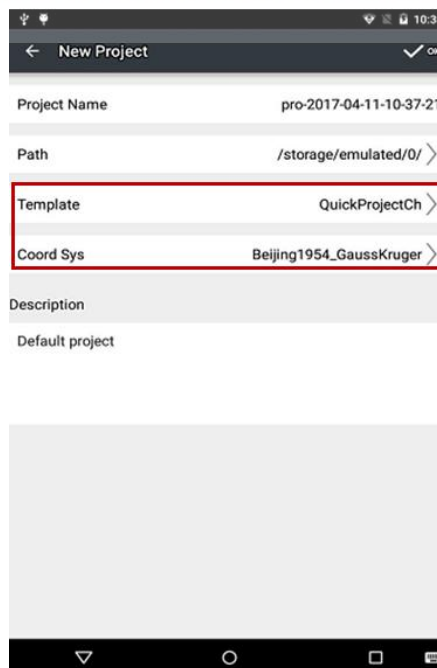
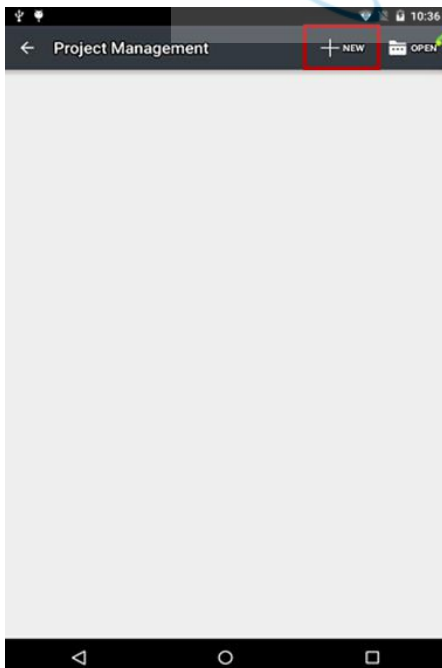
Click GNSSTool icon in the upper right corner to install or update the GNSSTool software.



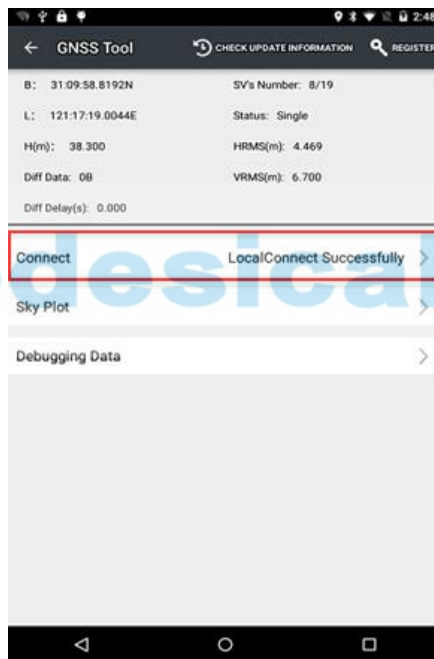
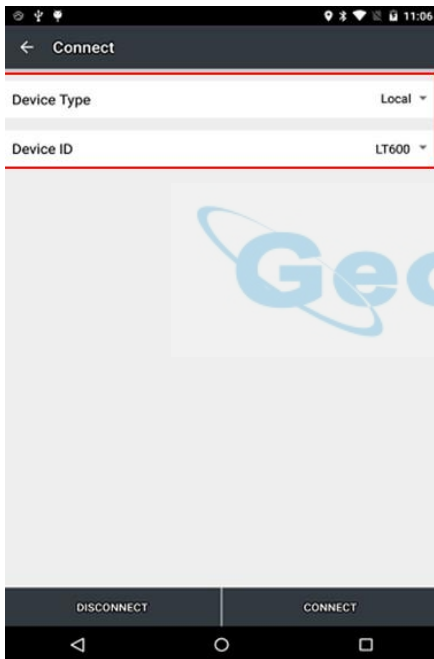
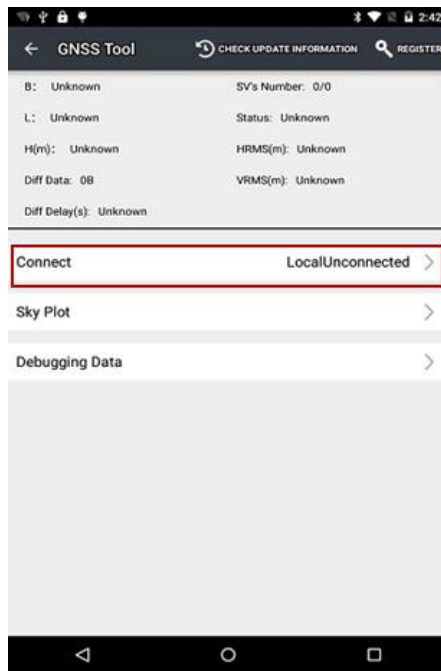


5.3. BUILD NEW PROJECT

1. Open MapCloud3.0 and click "+" to build new project > choose "Project Template" and "Coordinate System" >click "√" to finish;

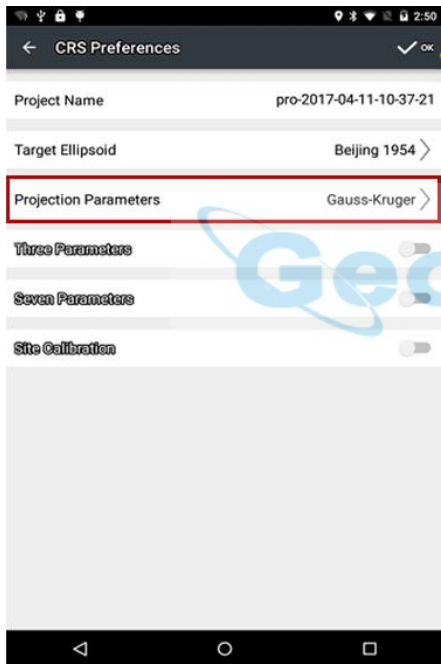
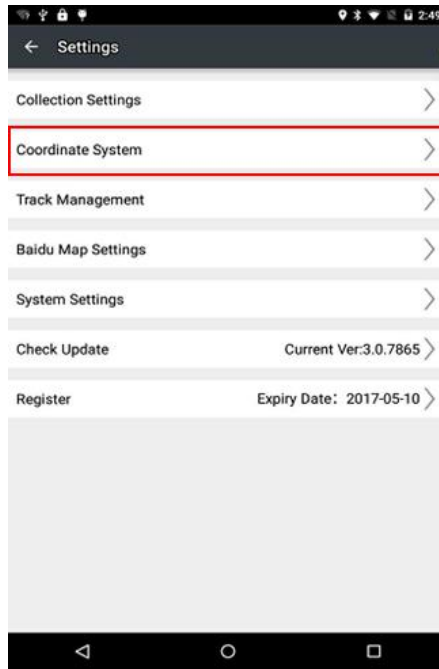
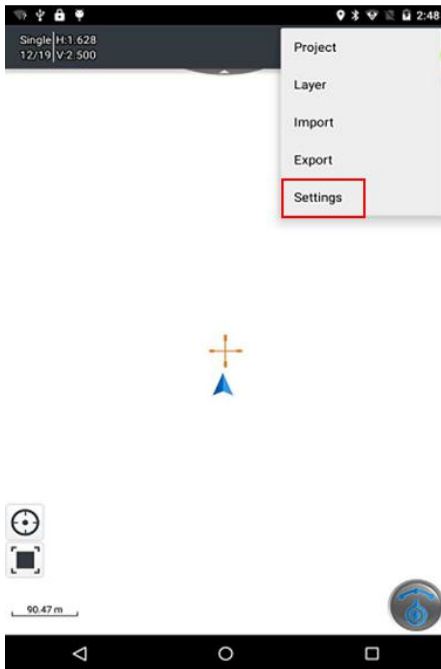


2. Click satellite icon in the upper right corner >click "Connect" >choose "Connect Method, Device Type" >Local Connection Successful >Return.

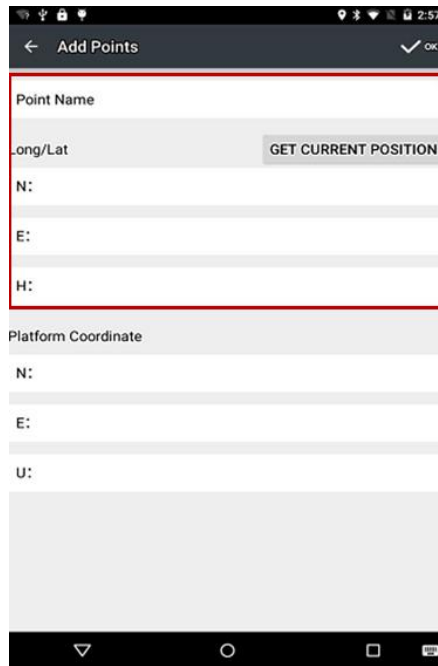
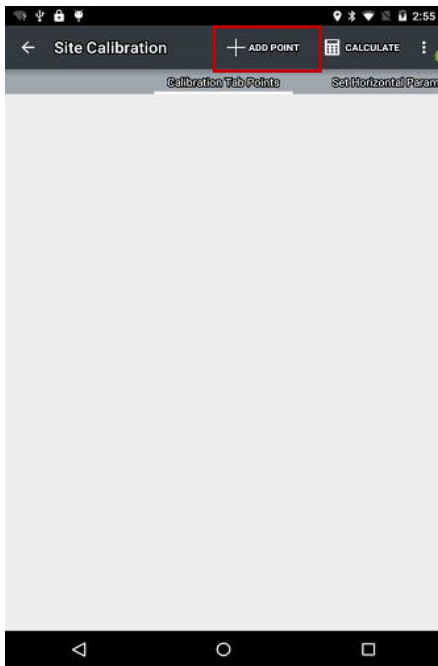


5.4. COORDINATE SYSTEM SETTINGS

1. Click Menu >"Settings" >"Coordinate System" >"Projection Parameters" >Set "Central Meridian" and "East Shifting" >click "√" to save;

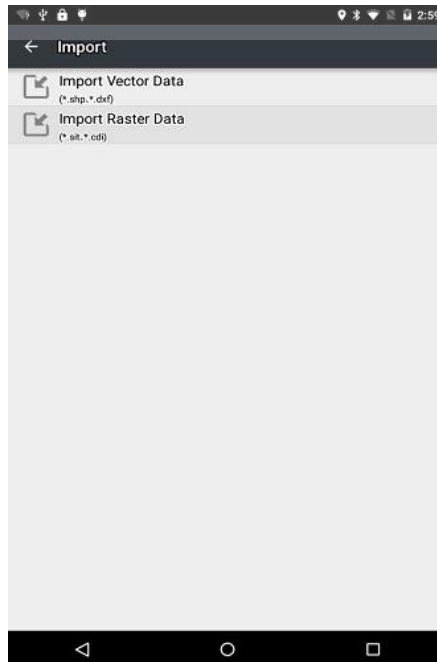
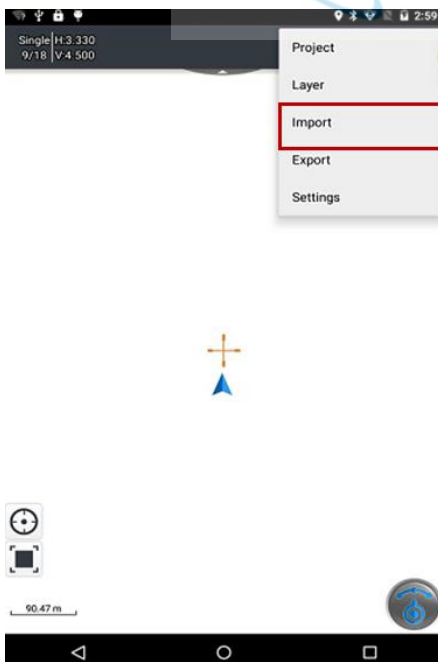


2. Type in 3 or 7 parameters, or open "Site Calibration" >click "+" to add known point >click "Calculate" > click "✓" to save and then starts collecting.



5.5. IMPORT BASE MAP

1. Click menu button of hand-held receiver >"Import" >"Import Vector Data" or "Import Map" > choose the file to be imported.



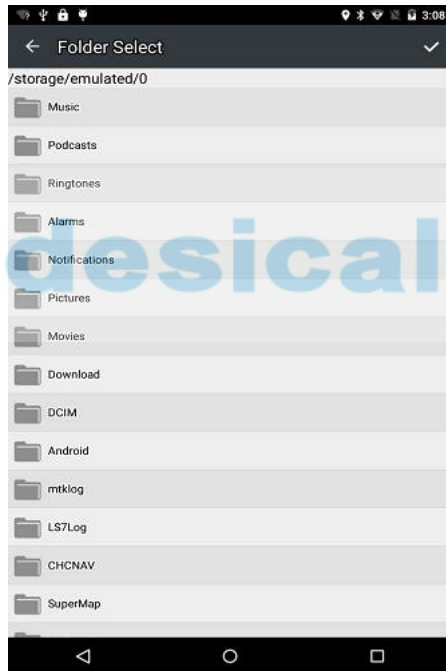
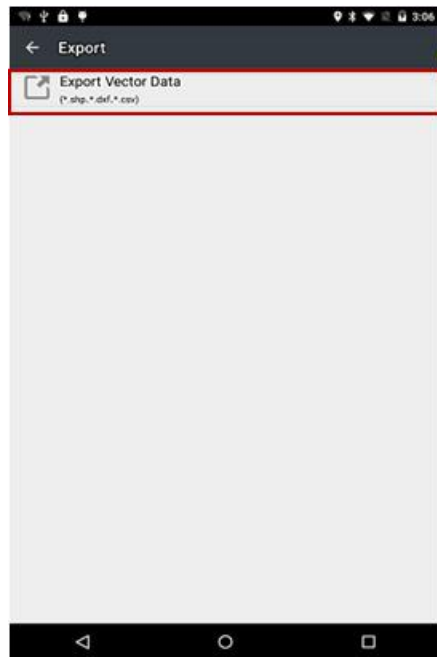
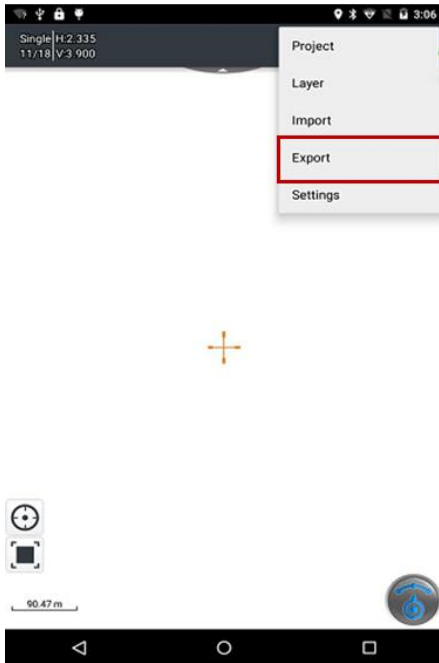
5.6. DATA COLLECTION

1. Click the button in the lower right corner >"Point" >"GPS" >click save to finish collecting (the same for line or area collecting)



5.7. EXPORT DATA

1. Click menu button of the hand-held receiver >"Export" >click "Export Vector Data" >choose the point/line/area layer and its format you want to export >click " ✓ " to export.



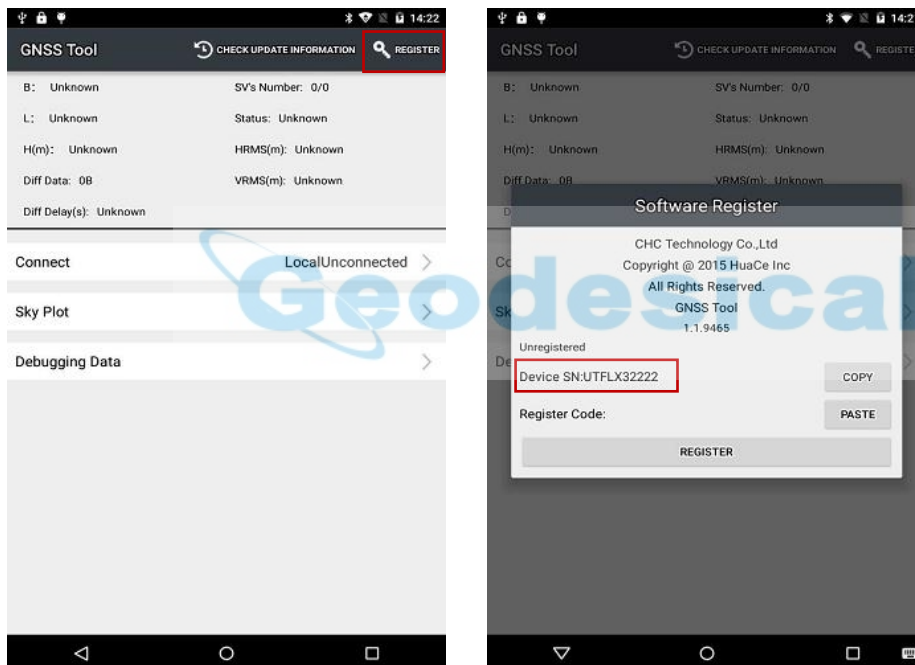
6. GETTING STARTED WITH GNSSTOOL

GNSSTool is a kind of service mainly used for access to data and Local, Bluetooth and WIFI connection. External App can send command to receiver by using GNSSTool through broadcasts. Thus users only need to connect with GNSSTool to achieve communication with the receiver. It will be running in the background once connected and there is no need to start it again.

6.1. REGISTER

1. Before using GNSSTool, users need to register first. Please find your **Device SN** in register interface and send it to support@chcnv.com, CHC will provide **Register Code** for you.

Unregistered GNSSTool only allow for 30 minutes tryout.

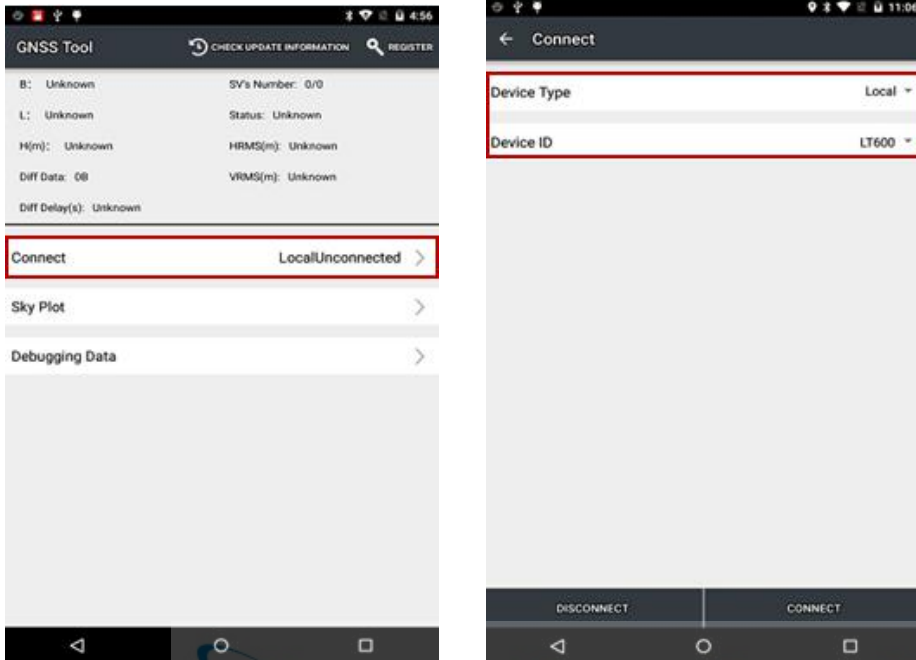


2. After registration, users can see the software version and expire date in register interface.

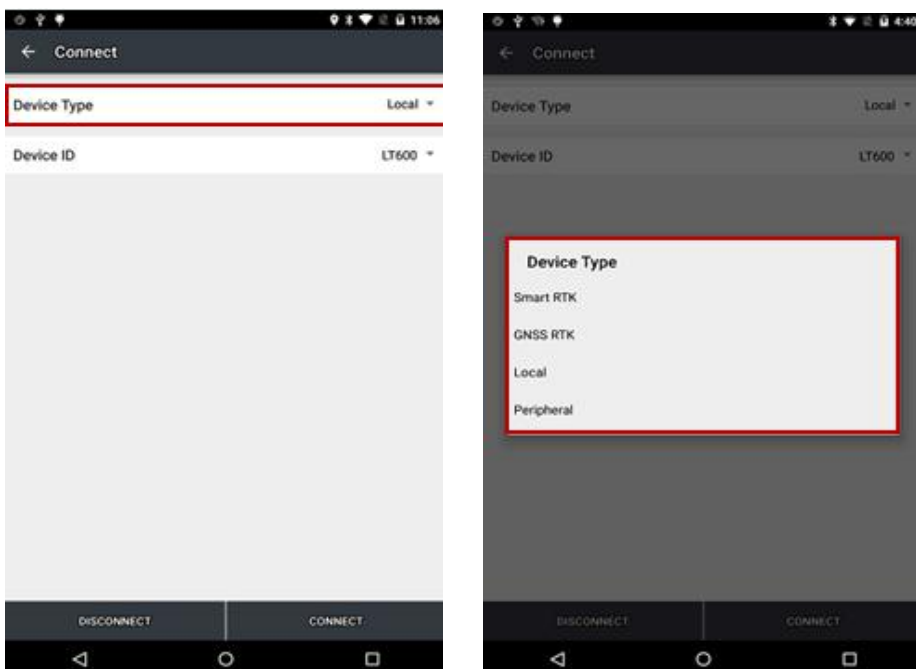


6.2. CONNECTION

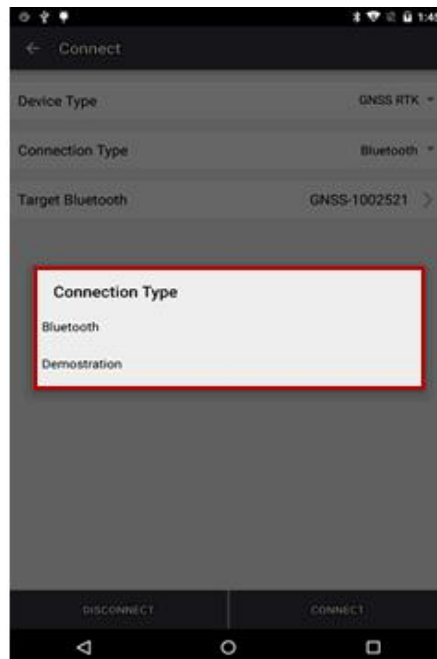
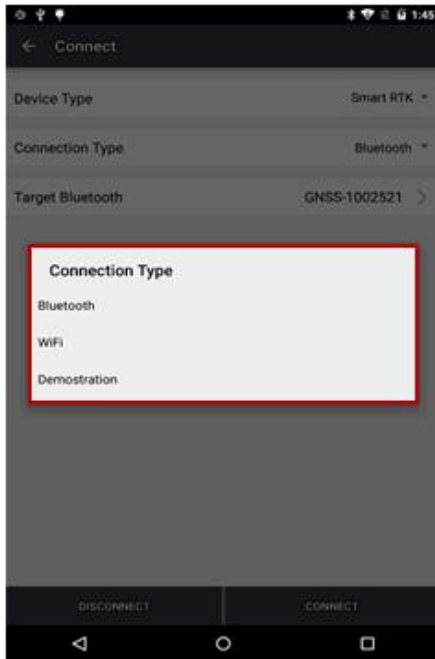
1. Open GNSSTool, click **Connect** and select **Device Type** and **Connection Type/Device ID** in connect interface.



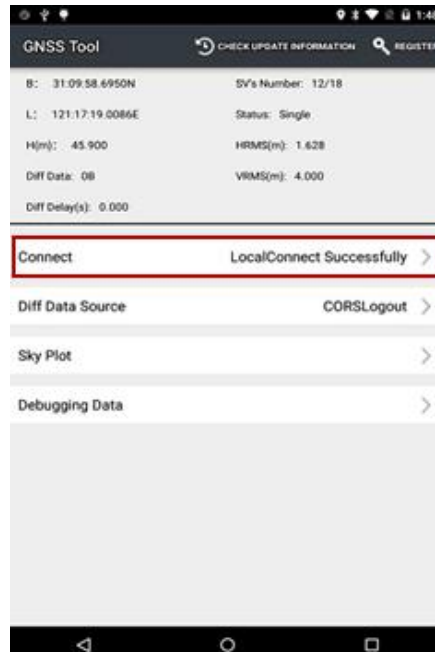
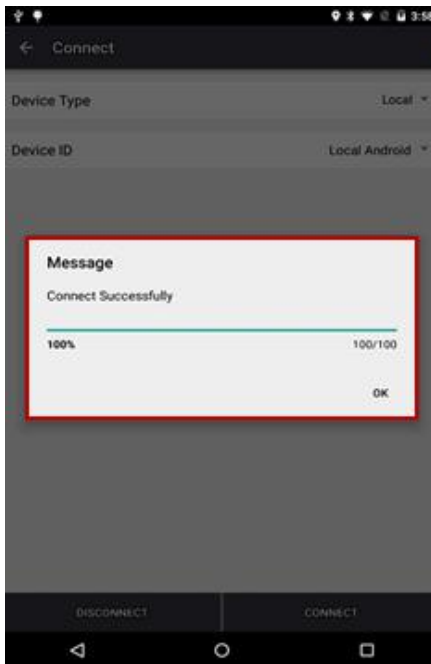
2. **Device Type:** GNSSTool currently supports 4 types of device: **Smart RTK**, **GNSS RTK**, **Local** and **Peripheral**. **Local** supports typical mobile phone and CHC customized hand-held controller like LT40 and LT600. **Peripheral** supports NMEA0183, X360 Series and other devices. Here for LT600, we choose **Local**.



3. **Connection Type:** For smart RTK (like i80), we select **Bluetooth**, **WiFi** or **Demonstration**. For GNSS RTK (like X91), we select **Bluetooth**, and **Demonstration**. For Local and Peripheral, we select the specific device type that we use. Here we select **LT600** for **Connection Type**.



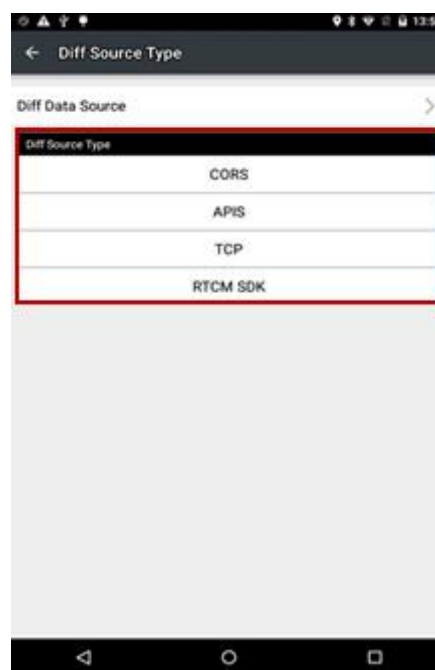
4. Click **Connect** to connect with the receiver, then go back to the previous interface.



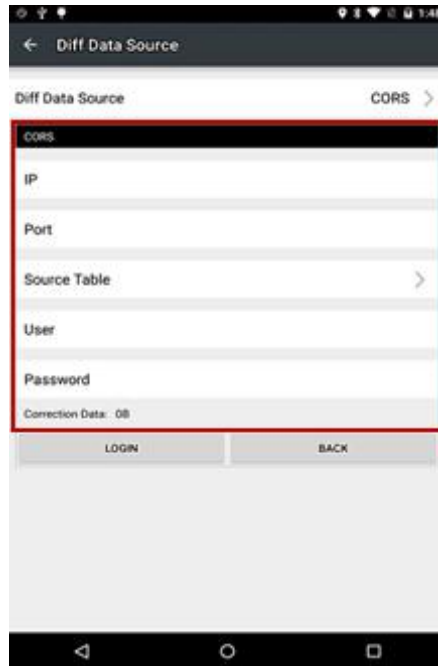
6.3. CORS LOGIN

After connection successful, we can log in CORS to receive differential data. Users can log in CORS in 4 different ways: **CORS, APIS, TCP and RTCM SDK**. Before log in CORS, please make sure the device has been connected and the hand-held is connected to the Internet. GNSSTool will automatically disconnect CORS if the device is disconnected.

1. Click **Diff Data Source** in the main interface, select Diff Data Source as CORS.

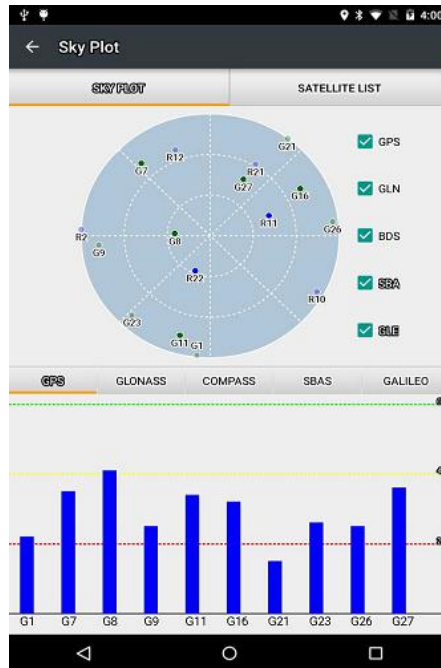
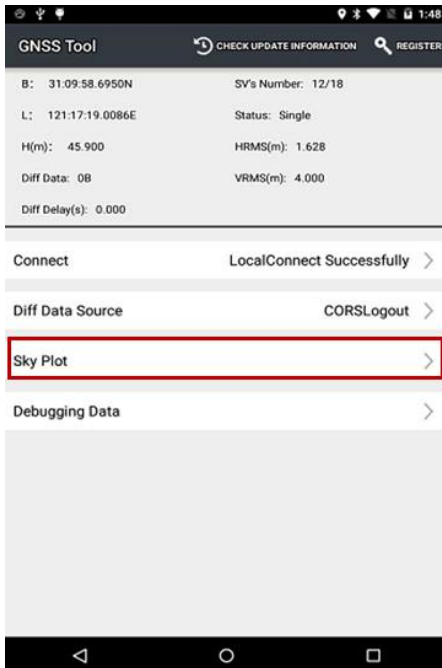


2. Type in IP, Port, Source Table and other parameters and then click **LOGIN**.



6.4. SKY PLOT

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





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