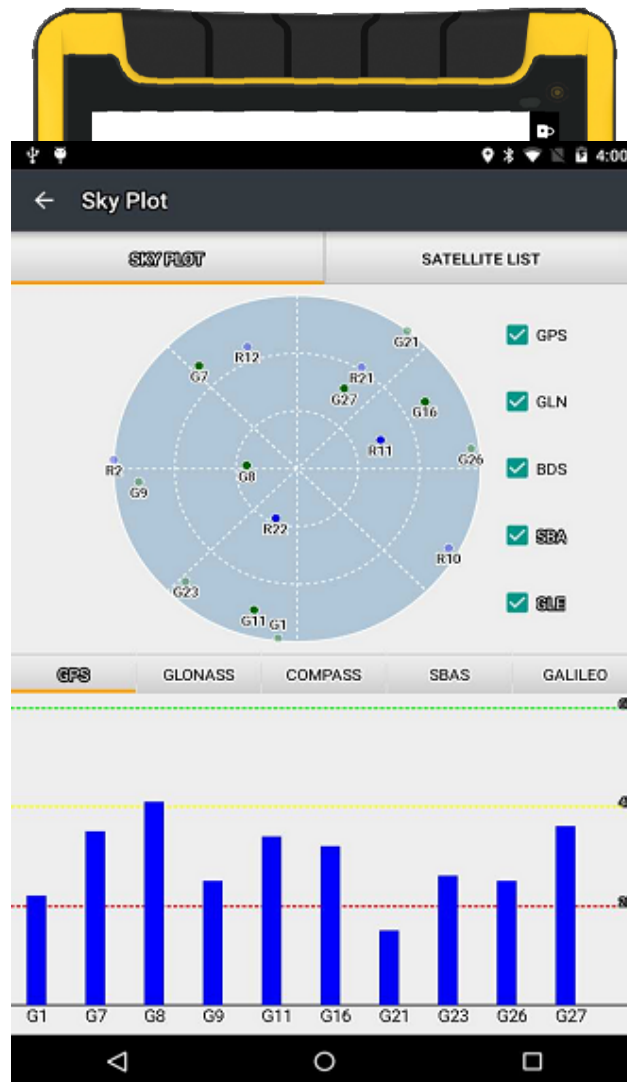


LT600 SERIES | GETTING STARTED GUIDE

GNSS DATA COLLECTING TERMINAL



CONTENTS

1.	Introduction.....	3
1.1.	Technical Assistance.....	3
1.2.	Your Comments.....	3
1.3.	Safety Information	3
1.4.	Warning and Cautions.....	3
1.5.	Use and Care	3
2.	Overview.....	5
2.1.	Features.....	5
2.2.	Specifications	5
3.	LT600 Overview	7
3.1.	Front View.....	7
3.2.	Back View.....	9
3.3.	Side View	10
4.	Basic Operation	11
4.1.	Insert SIM Card and power on	11
4.2.	Language & input	13
4.3.	Set Date/Time	13
4.4.	Display	14
4.5.	WIFI	16
4.6.	Bluetooth	16
4.7.	USB Connection	17
4.8.	Use Camera	18
4.9.	Scheduled power on & off	19
4.10.	Location.....	20
5.	Getting Started With Map Cloud 3.0.....	21
5.1.	Build New Project.....	21
5.2.	Coordinate System Settings	22
5.3.	Import Base Map.....	23
5.4.	Data Collection	24
5.5.	Export Data	25
5.6.	Software Registration.....	26
6.	Getting Started With GNSSTool.....	27
6.1.	Connection	27
6.2.	CORS Login	29
6.3.	Sky Plot.....	30
6.4.	Debugging Data.....	31

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 steps 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. WARNING AND CAUTIONS

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.

1.5. 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 code scanning, RFTD, Infrared and MIC 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	LTE, EDGE, GSM,GPRS
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
MIC	Support
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 degree of accuracy

Physical

- Dust proof and waterproof: IP65
- Shock: Survives a 1.5meter 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)
- G-sensor: Support
- Light sensor: Support
- Distance sensor: Support
- E-compass: Support
- Gyroscope: Support
- MIC :Support

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 using USB cable.

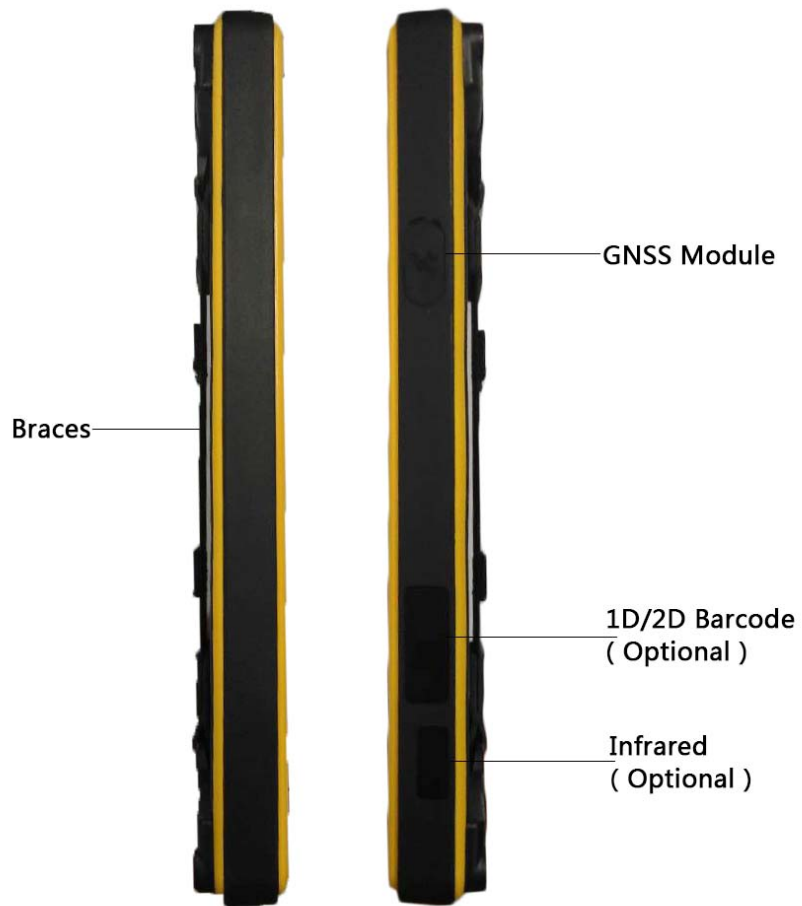
- **Headset Jack**

Insert your headset into this socket.

3.2. BACK VIEW



3.3. SIDE VIEW



4. BASIC OPERATION

4.1. INSERT SIM CARD AND POWER ON

- Refer **3.3 Front View** to find the SIM card and TF card slot, and then insert the cards into slots correctly.
- Before powering on LT600, please make sure the battery has plenty of power. Then long press the power button to turn on LT600 and enter its home screen.

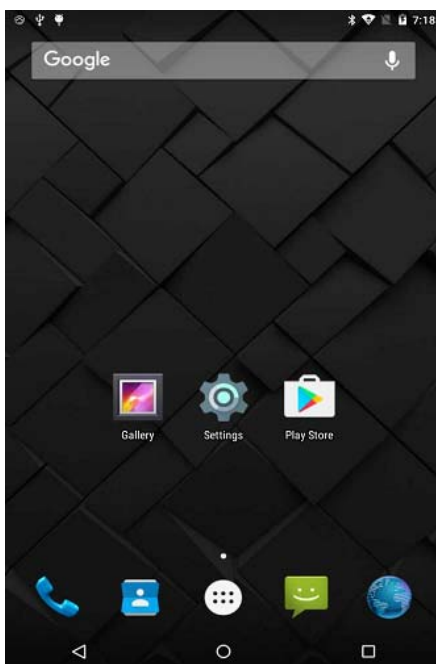


Figure 1

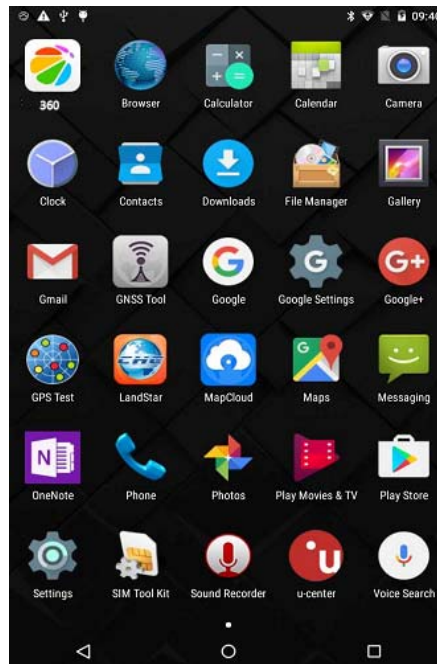


Figure 2

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**).

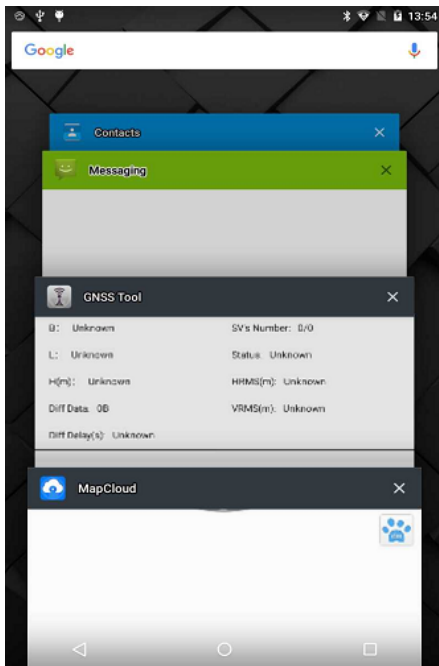


Figure 3

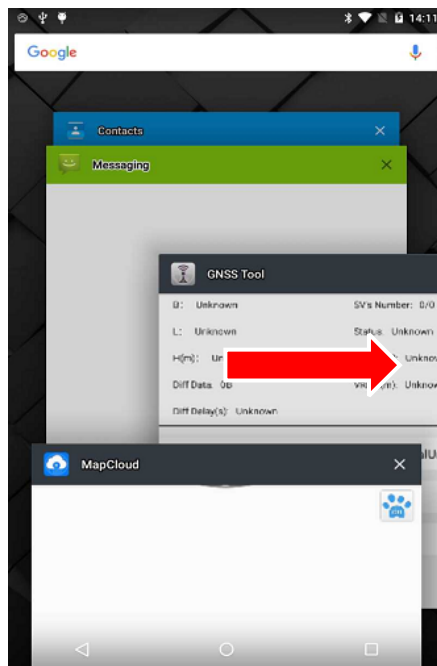


Figure 4

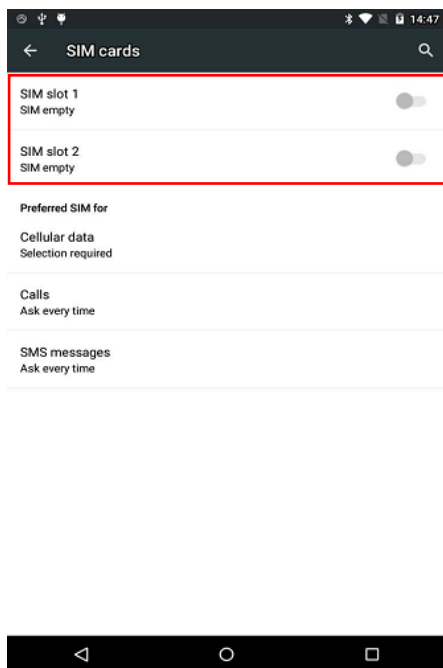
Use virtual button key to facilitate your operation with LT600.

Click  to go back to previous menu.

Click  to return home screen.

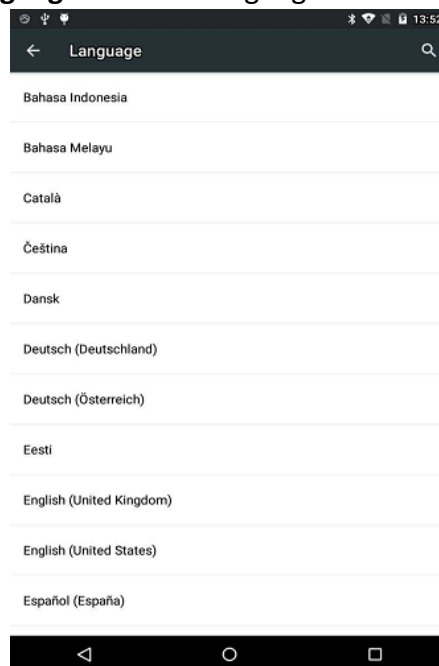
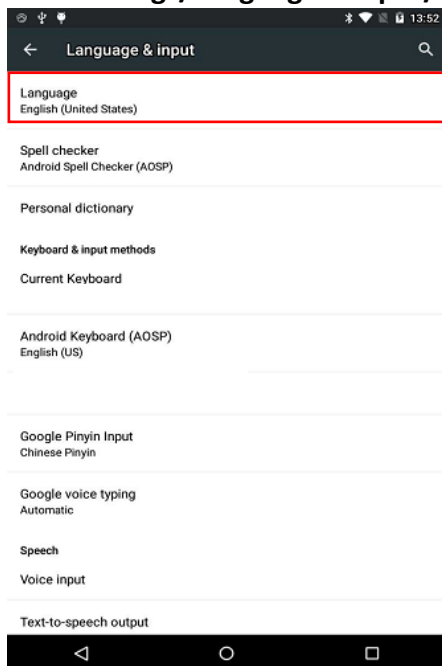
Click  to see all the running apps (**Fig. 3**) and then you can remove apps by sliding them towards left or right side(**Fig. 4**).

- After powering on LT 600 (refer to **4.2 Power on**), Click Settings/SIM card to turn on the SIM cards.



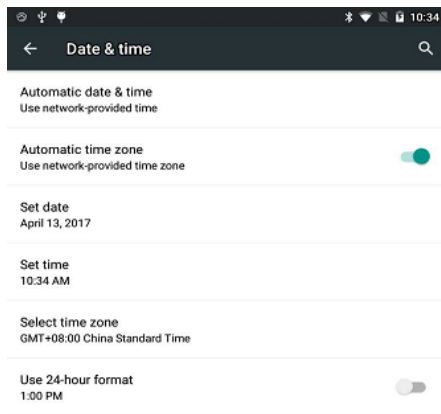
4.2. LANGUAGE & INPUT

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

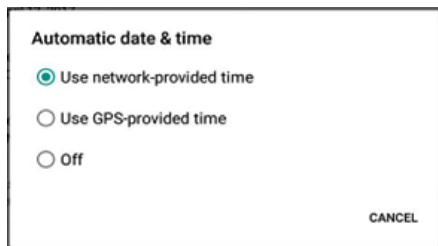


4.3. SET DATE/TIME

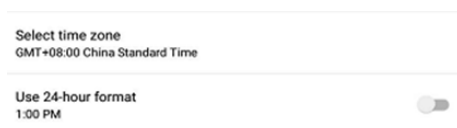
Click **Settings/Date & time** and enter **Date & time** interface.



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**:



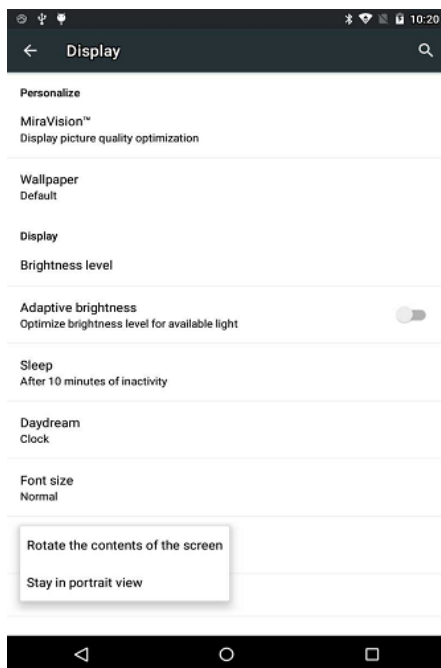
If you want to set date and time by yourself, please turn off the **Automatic date & time** first and then click **Set date** and **Set time** to start your own settings.



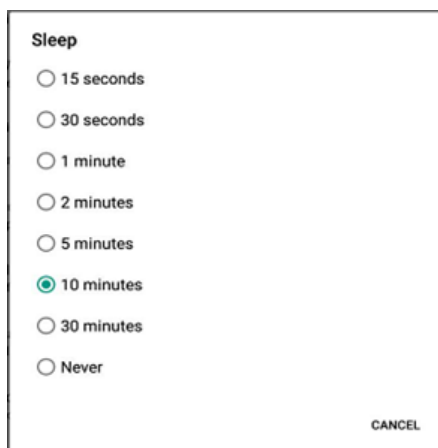
YOU CAN ALSO CUSTOMIZE YOUR TIME ZONE AND CHOOSE WHETHER TO USE 24-HOUR FORMAT IN THIS INTERFACE.

4.4. DISPLAY

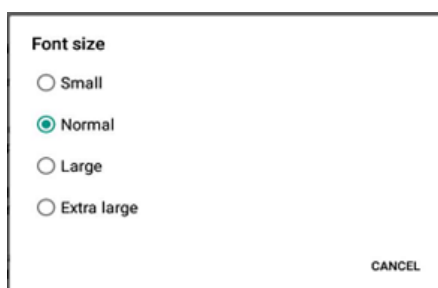
Click **Settings/Display** to enter **Display** interface.



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



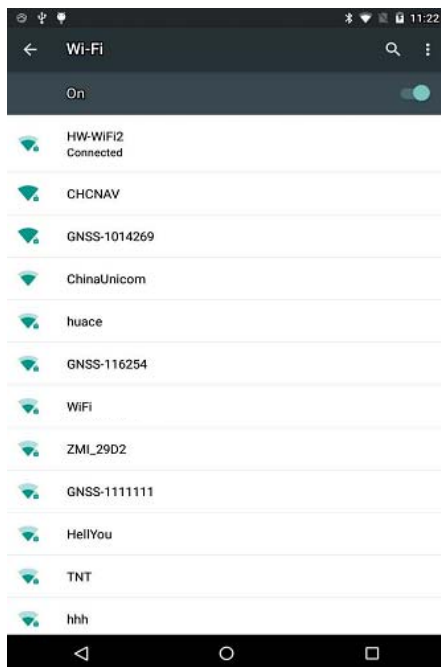
Sleep: Click to optimize the inactivity time LT600 needs to close screen.



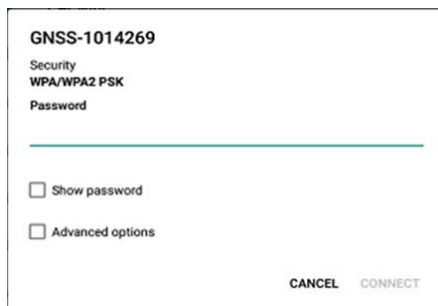
Font size: Click to change the font size.

4.5. WIFI

Click **Settings/WIFI** to switch on the button.

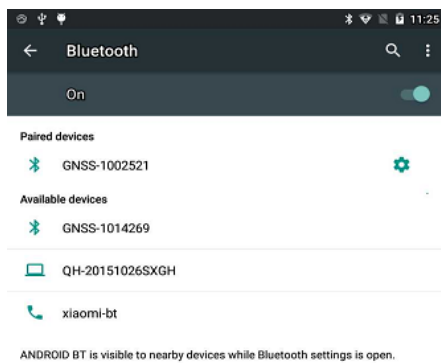


Select WIFI and type in its password to connect.

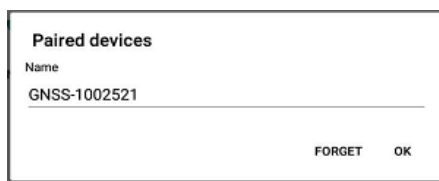


4.6. BLUETOOTH

Click Settings/Bluetooth to turn on the Bluetooth.



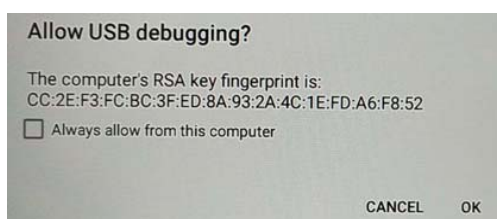
Find nearby devices and pair with it.



4.7. USB CONNECTION

For connection or data transmission between LT600 and office computer, please use the USB data cable as shown below.

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.

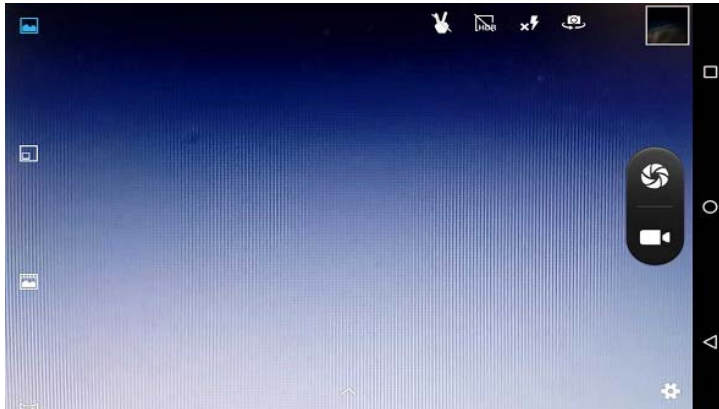


You can also use third party software to manage the documents and data stored in

LT600 and install software like MapCloud3.0, GNSSTool into it.

4.8. USE CAMERA

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



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 mo:



Panarama mode

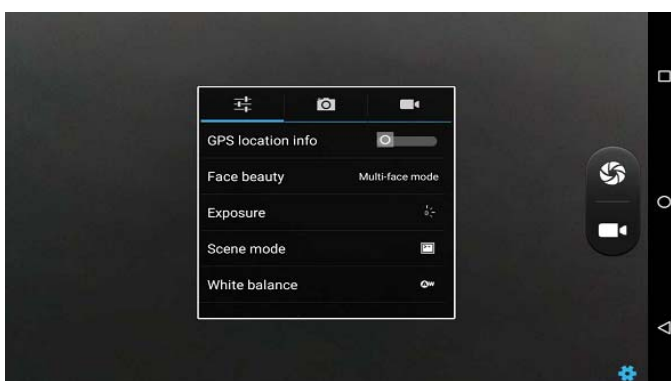


Multi angle view mode



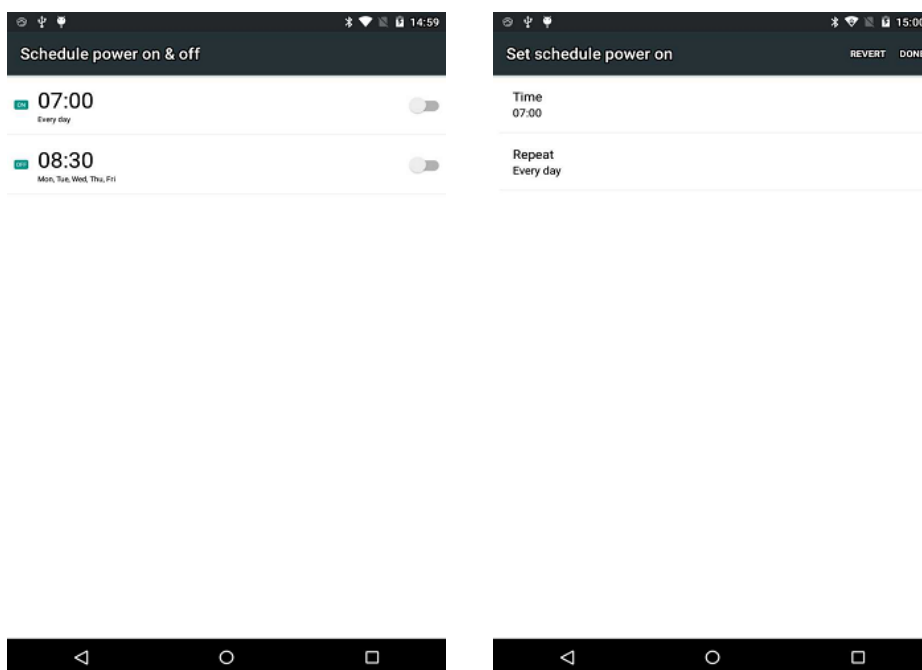
Camera Settings

Click to configure related parameters



4.9. SCHEDULED POWER ON & OFF

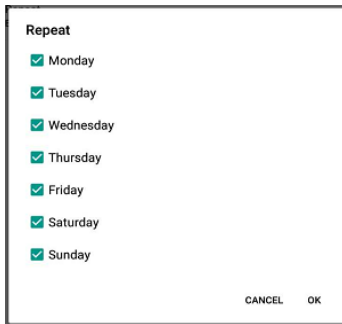
LT600 allows users to achieve scheduled power on and off by setting the power up & off time and repeat time beforehand.



Set the Scheduled power on time and click OK.



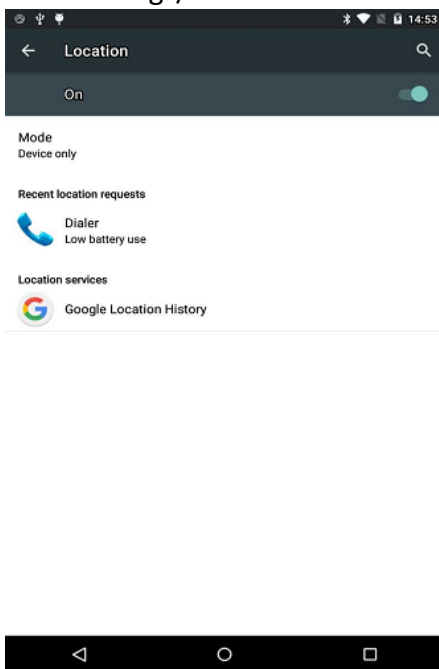
Set scheduled power on repeat time and click OK.



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

4.10. LOCATION

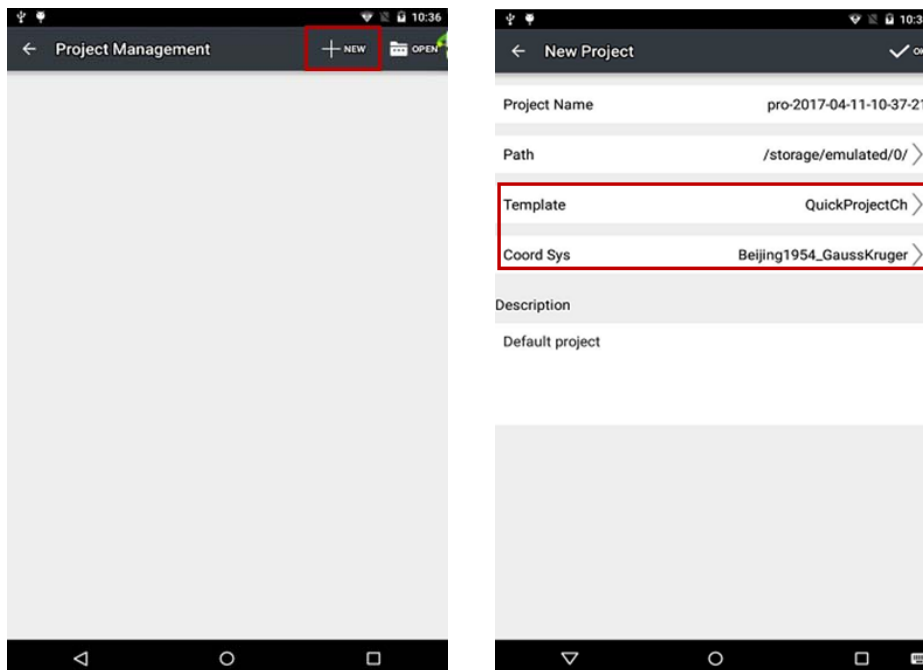
Click Settings/Location to switch on location service.



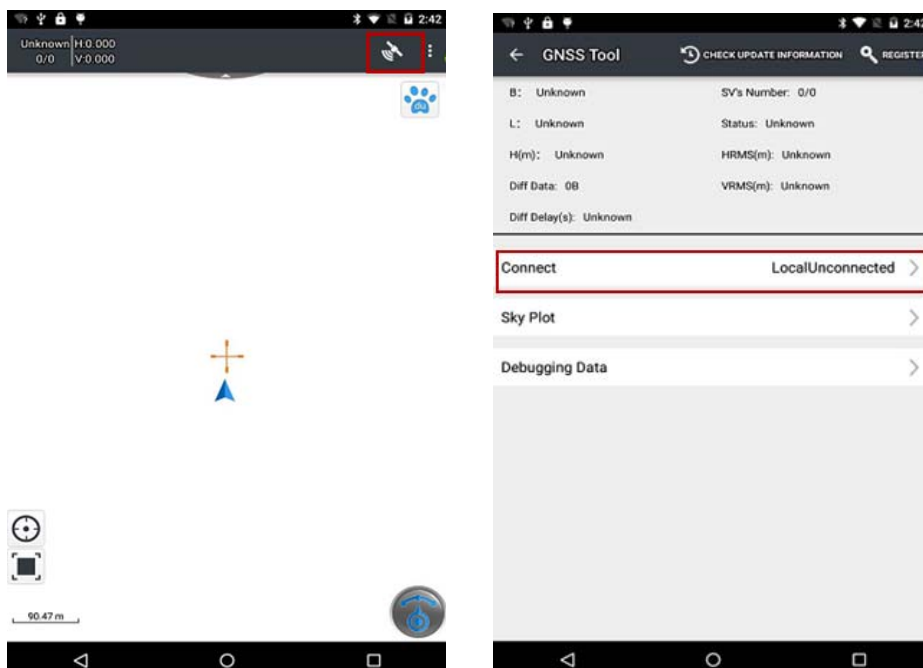
5. GETTING STARTED WITH MAP CLOUD 3.0

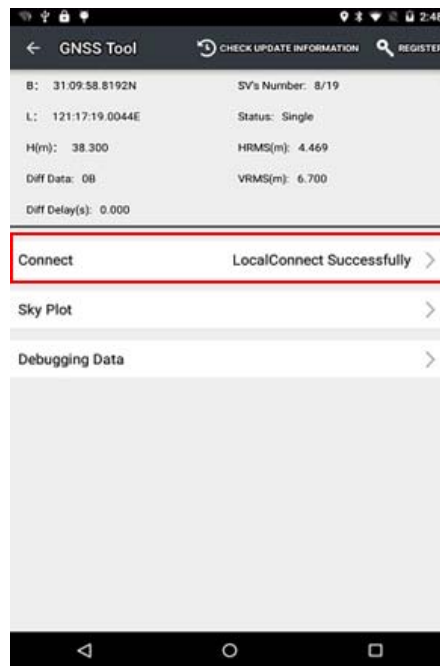
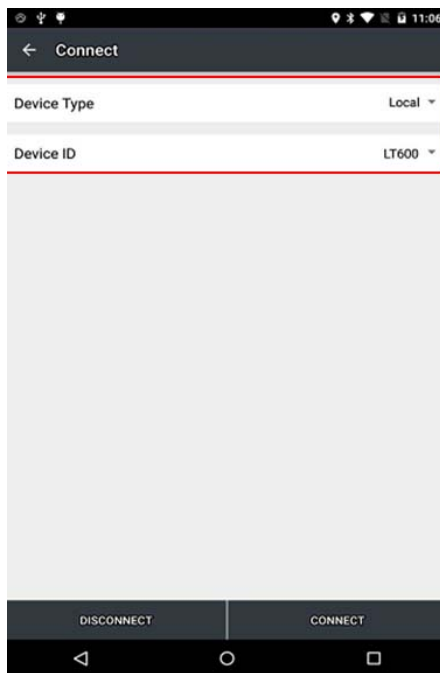
5.1. BUILD NEW PROJECT

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



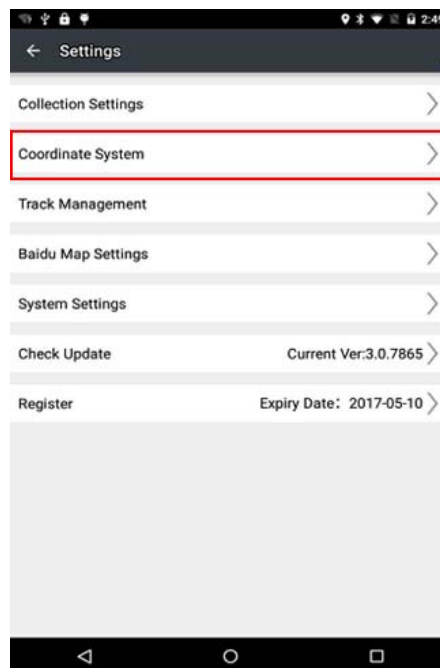
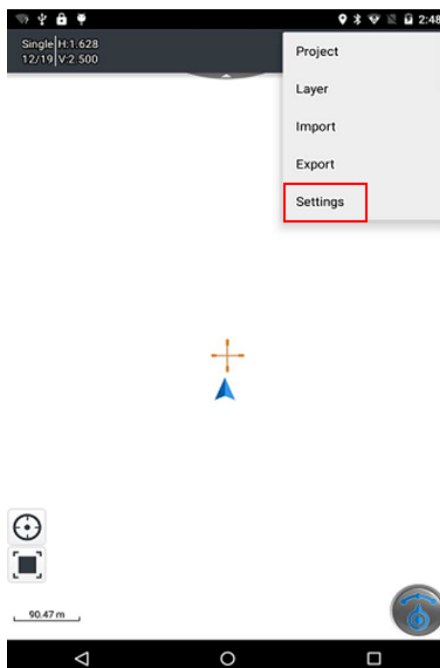
Click satellite icon in the upper right corner >click "Connect" >choose "Connect Method, Device Type" >Local Connection Successful >Return.

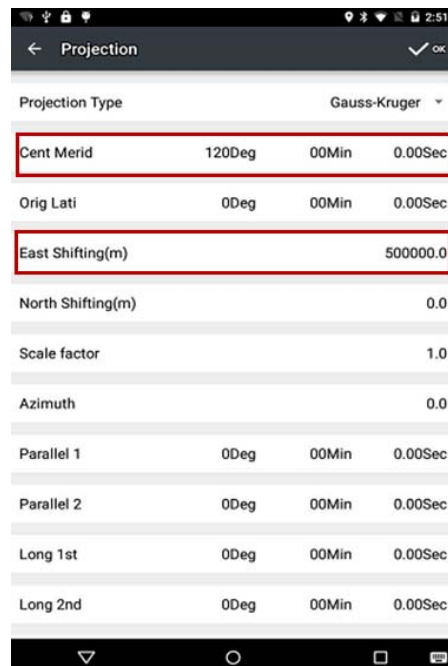
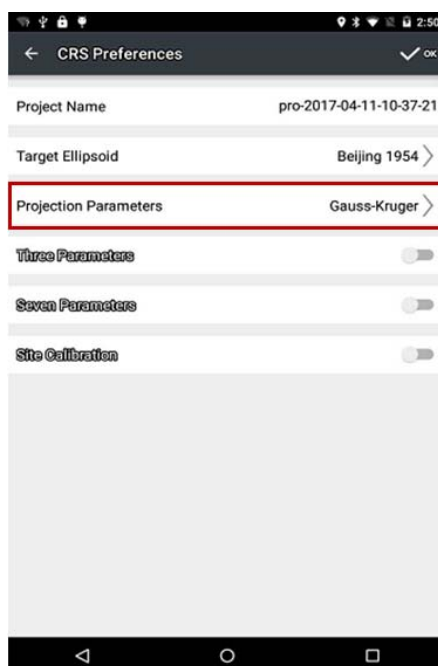




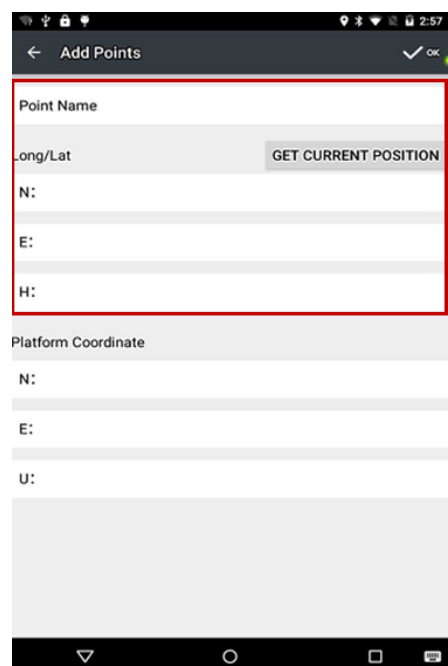
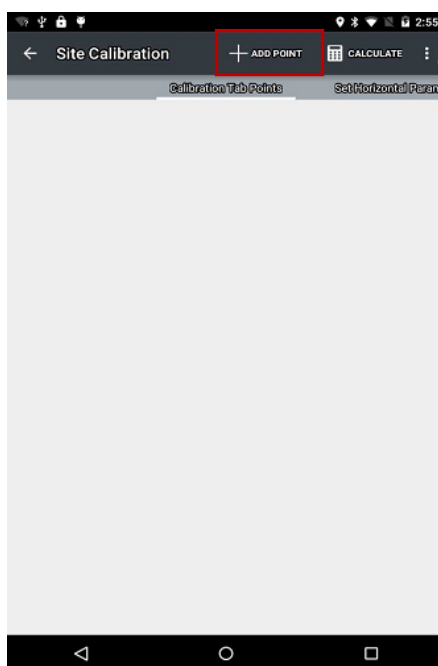
5.2. COORDINATE SYSTEM SETTINGS

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



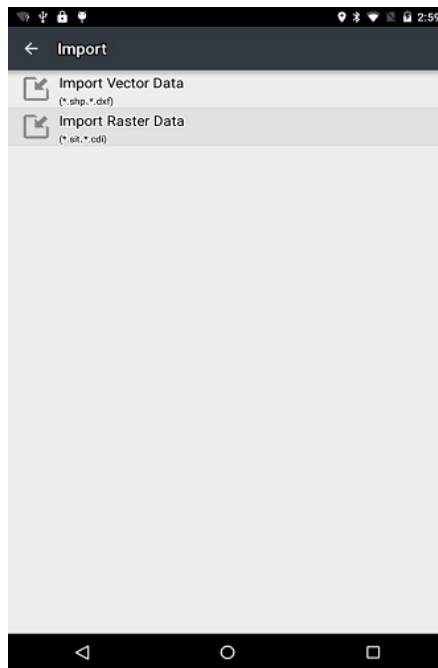
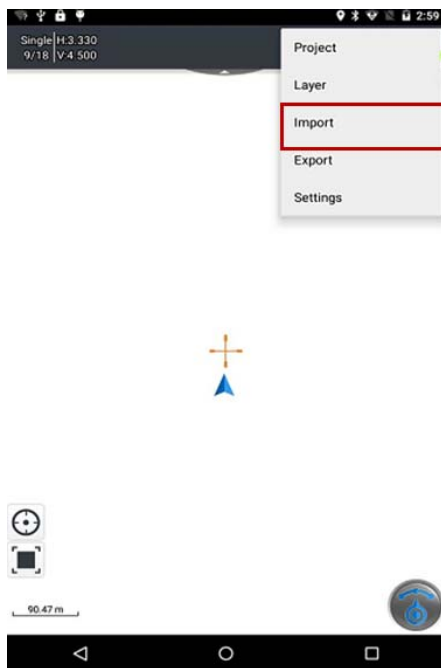


Type in 3 or 7 parameters, or open “Site Calibration” >click "+" to add known point >click “Calculate” > click "√" to save and then starts collecting.



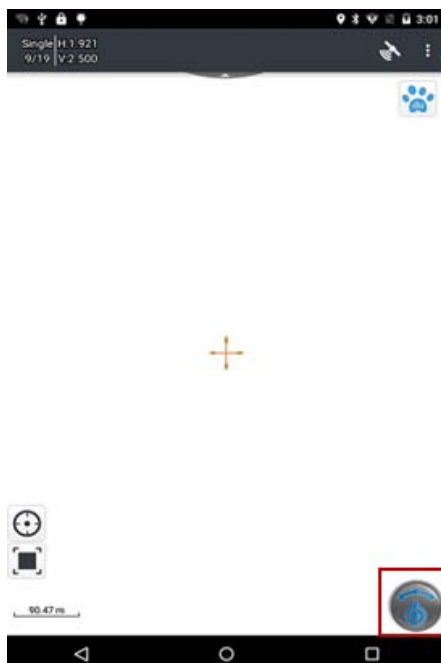
5.3. IMPORT BASE MAP

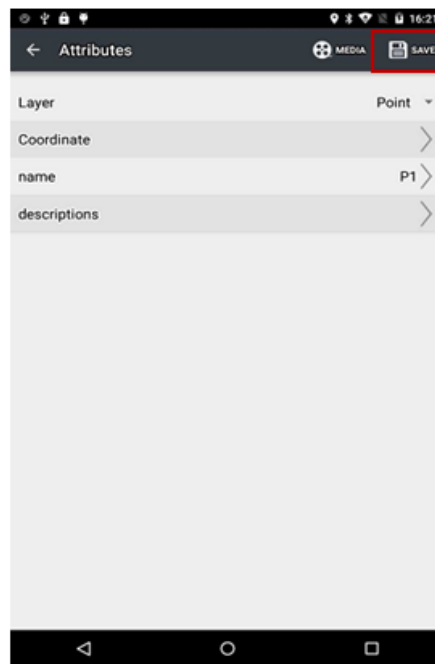
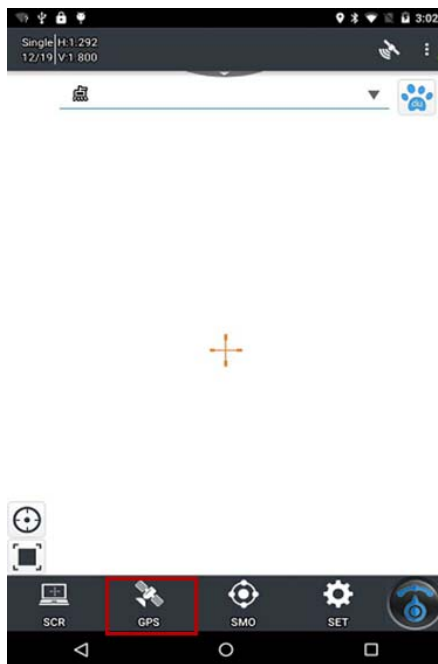
Click menu button of hand-held receiver >”Import” >”Import Vector Data” or “Import Map” > choose the file to be imported.



5.4. DATA COLLECTION

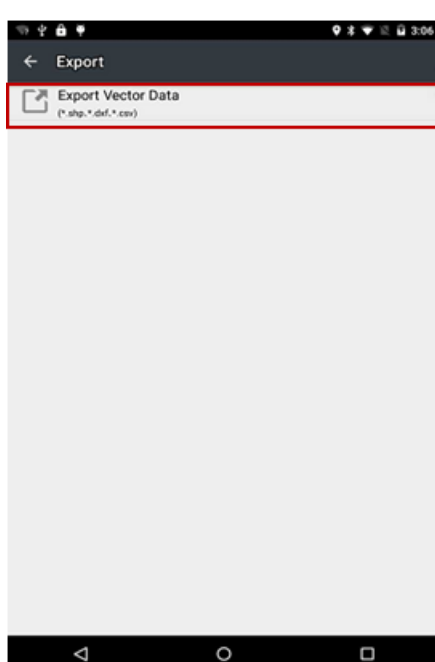
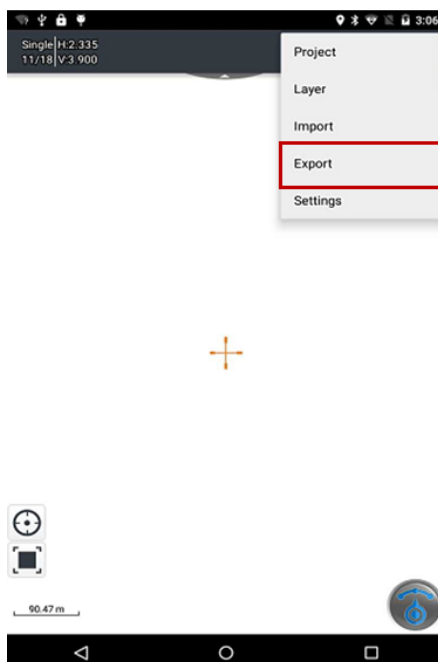
Click the button in the lower right corner >"Point" >"GPS" >click save to finish collecting (the same for line or area collecting)

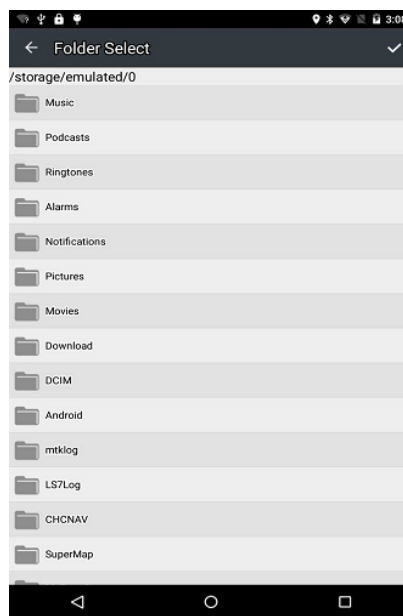
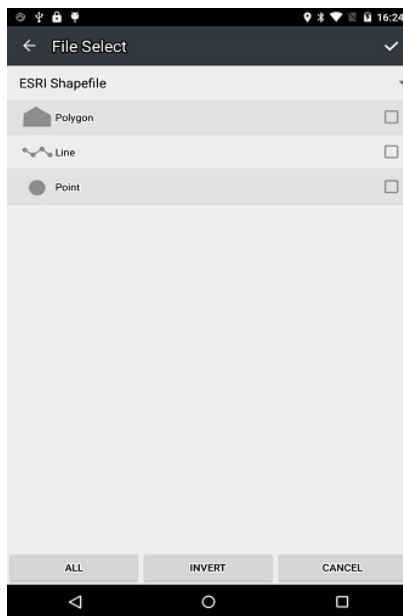




5.5. EXPORT DATA

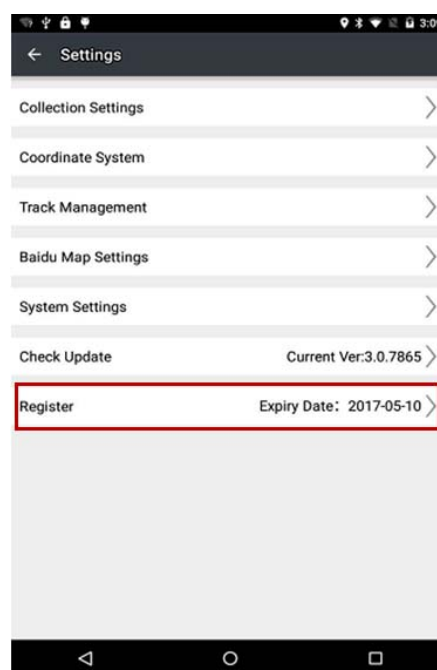
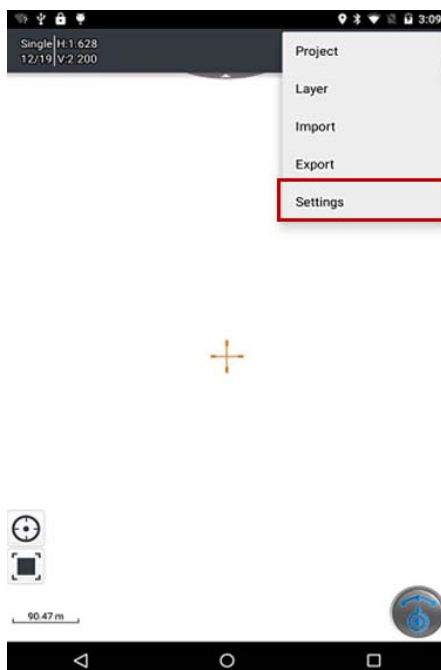
Click menu button of the hand-held receiver >"Export" >click "Export Vector Data" >choose the point/line/area layer and its format you want to export >click "√" to export.





5.6. SOFTWARE REGISTRATION

Register in the upper right corner of GNSS Server contains GNSS Server version, device ID and so on; Software registration set by MapCloud3.0 include the version of MapCloud3.0, device ID etc. Users can register by applying for registration code from CHC.



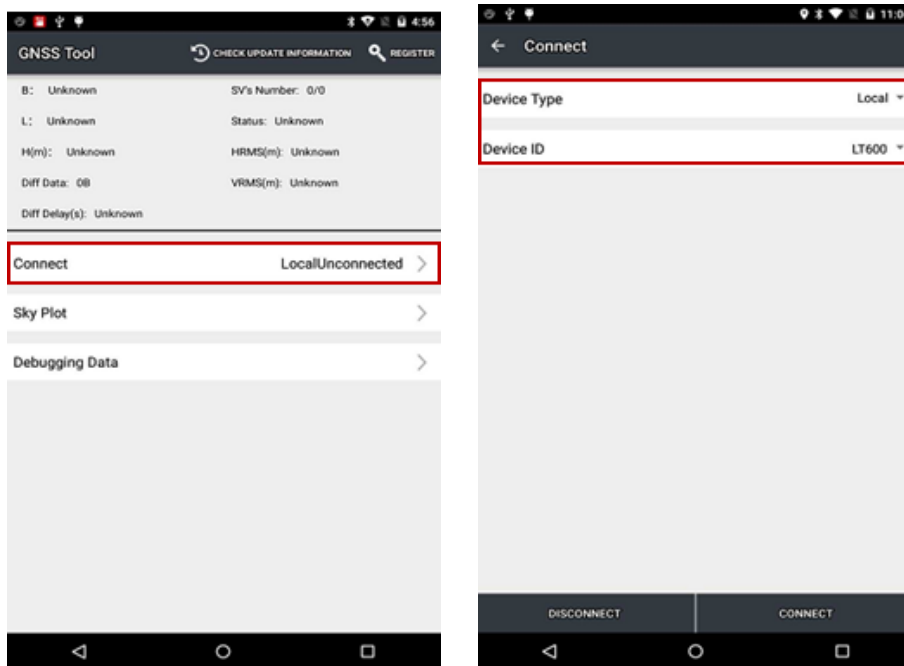
6. GETTING STARTED WITH GNSSTOOL

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 broadcast. GNSSTool can call CHC SDK to send command to receiver. Users only need to connect with GNSSTool to communicate with the receiver. It will be running in the background once connected and users don't need to start it.

Before using GNSSTool, users need to register first. Unregistered GNSSTool only allow for 30 minutes tryout.

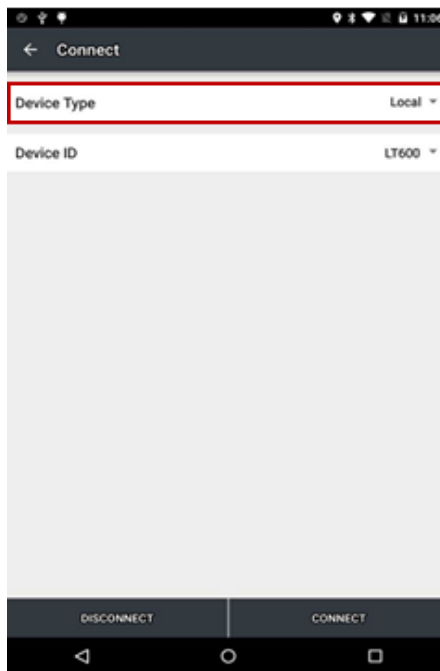
6.1. CONNECTION

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

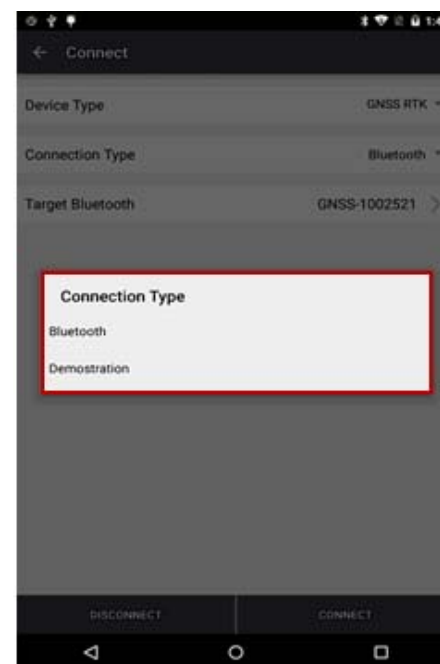
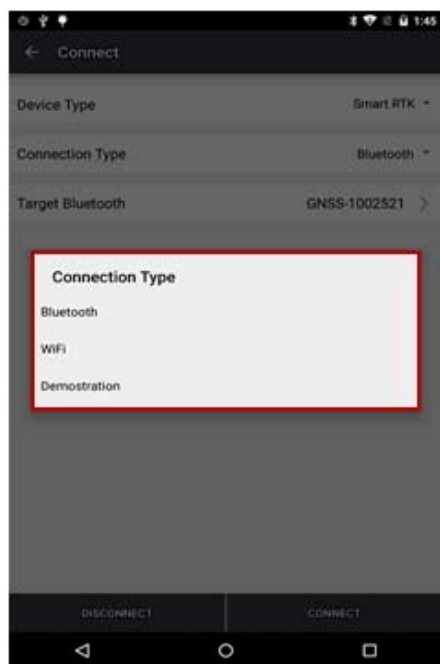


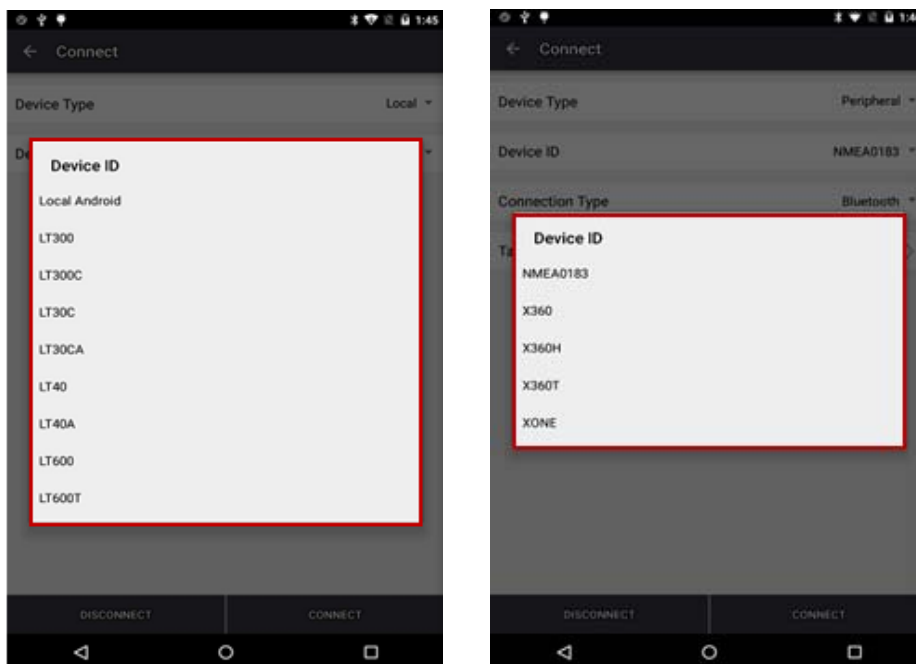
2. **Device Type:** GNSSTool currently supports 4 types of Device: **Smart RTK**, **GNSS RTK**, **Local** and **Peripheral**. **Local** supports typical mobile phone and CHC customized handheld controller like LT40 and LT600. **Peripheral** supports NMEA0183, X360 Series and other devices.

Here for LT600, we choose **Local**.

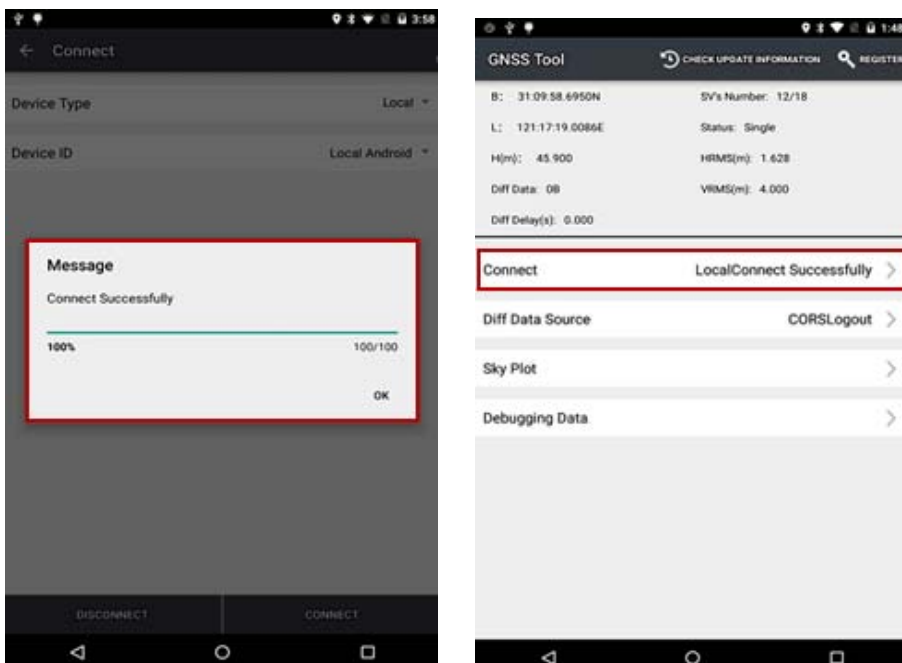


3. **Connection Type:** For smart RTK (like i80), we select **Bluetooth**, **WIFI** or **Demonstration**. For GNSS RTK (like X91), we select **Bluetooth**, and **Demonstration**. For Local and Peripheral, we select the specific device type that we use. Here we select **LT600** for **Connection Type**.





4. Click [Connect] to connect with the receiver successfully and go back to the previous interface.

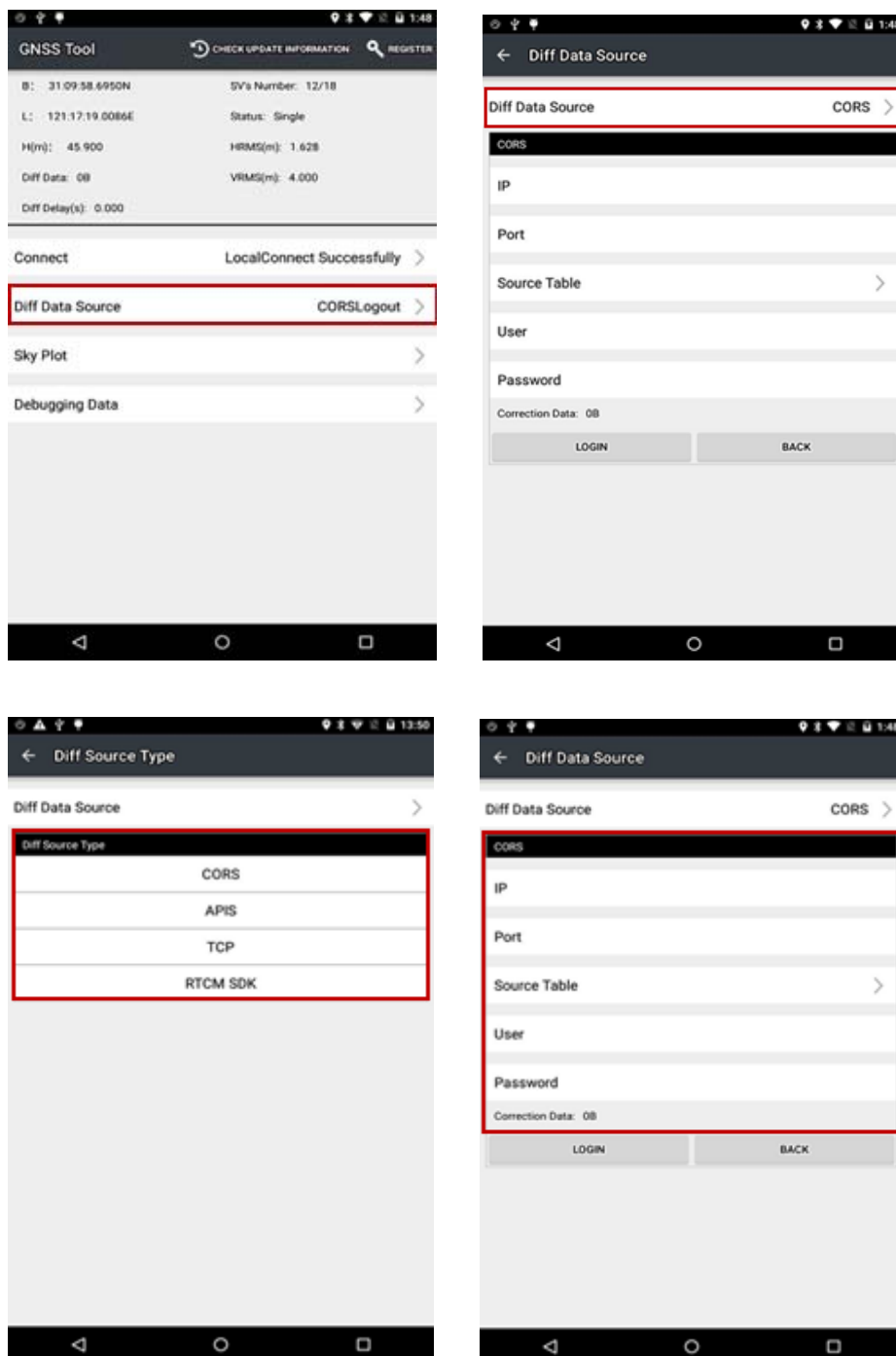


6.2. CORS LOGIN

After finishing connection successfully, 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 handheld is connected to the

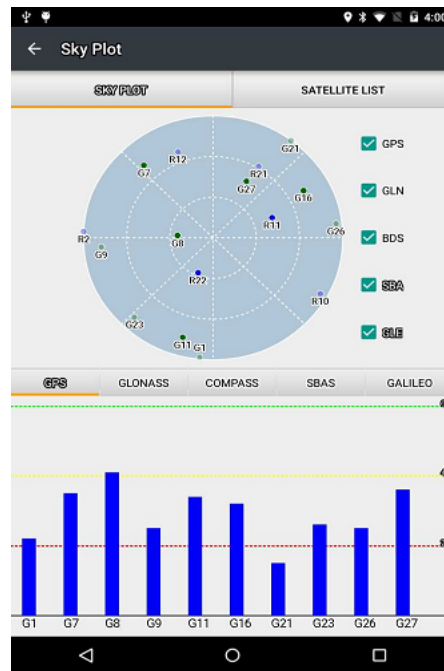
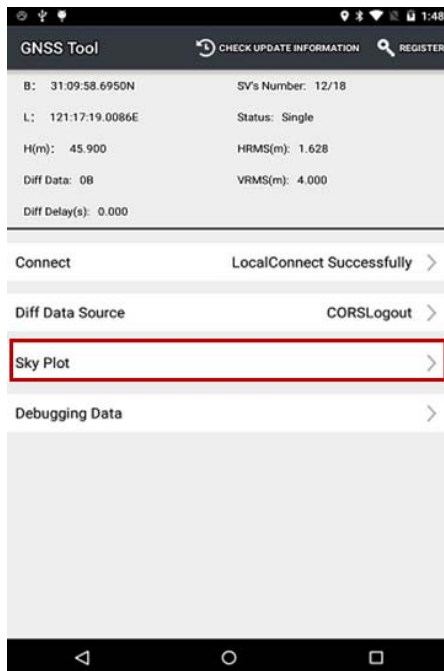
Internet. GNSSTool will automatically disconnect CORS if the device is disconnected.

1. Click **Diff Data Source** in the main interface, type in IP, Port, Source Table and other parameters and then click **LOGIN**.



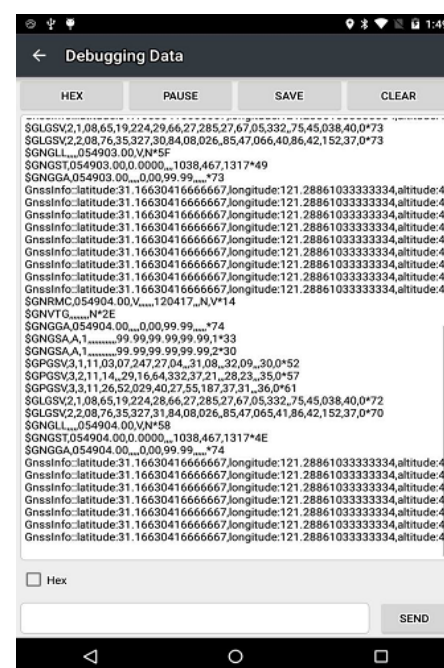
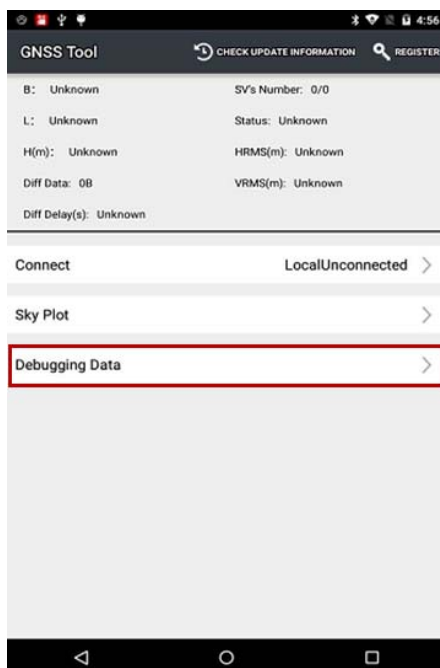
6.3. Sky PLOT

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



6.4. DEBUGGING DATA

Click **Debugging Data** to enter data debugging interface. Click **HEX** to change the data into txt format, or pause, save and clear the data using button in the upper side.



RF Exposure Information (SAR) :

The SAR limit of USA (FCC) is 1.6W/Kg averaged over one gram of tissue. Product, model number: LT-600; (FCC ID: SY4-B01008) has also been tested against this SAR limit. The highest SAR value reported under this standard during product certification for use on the body is 1.15 W/Kg. The device was tested for body-worn operations & hotspot operations. compliance with FCC RF exposure requirements

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. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

CHC - Shanghai HuaCe Navigation Technology Ltd.

Building C, 599 Gaojing Road, Qingpu

District, Shanghai, China

Tel: +86-21-51508100-1241

Fax: +86-21-64851208

Email: sales@chcnave.com | support@chcnave.com

Website: www.chcnave.com