

SOUTH GISStar V1.0 (4/3/2015)

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Chapter 1 General

1.1. Introduction

GISStar for Android system was designed for GIS application, which adopts GIS (Geographic Information System) technology to collect and manage geographic data. It applies to resource management and configuration, urban planning and management, environment assessment and modeling, land information system and cadastral application, facilities management and maintenance, agriculture and transportation.

GISStar takes advantage of the Android touch screen capability by allowing you to tap the points and lines in your drawing to open toolbars with all the function you need instantly. It also supports various data format import and export, such as shp file, dxf file, kml file and gpx file, which fully meet the demands of different of users.

1.2. Hardware Requirement

GISStar software may be installed on all kinds of Android system devices running version 4.0 or higher version, tablet PC or mobile phone is recommended to install this application.

1.3. Installing GISStar

Before you install GISStar, the first thing is to confirm that your hardware is supported by GISStar installation, please refer to the hardware requirement topic or call our technical for the support.

Download:

Search GISStar on your app search application with your Android device and then download GISStar installation APP. Or scan the QR code as below to download the installation APP.



Figure 1.01

You can also take following link to download it onto your computer and then copy the installation APP to your Android device.

http://58.248.35.130:2011/p4/index.php?s=/home/BLink/down/app_name/android_gistar

Installing steps:

When you finish downloading the app or tap on the app you copy into your Android device, then

a installation dialog will appear, you will see the access information, tap on **Next** and **Install** to continue.

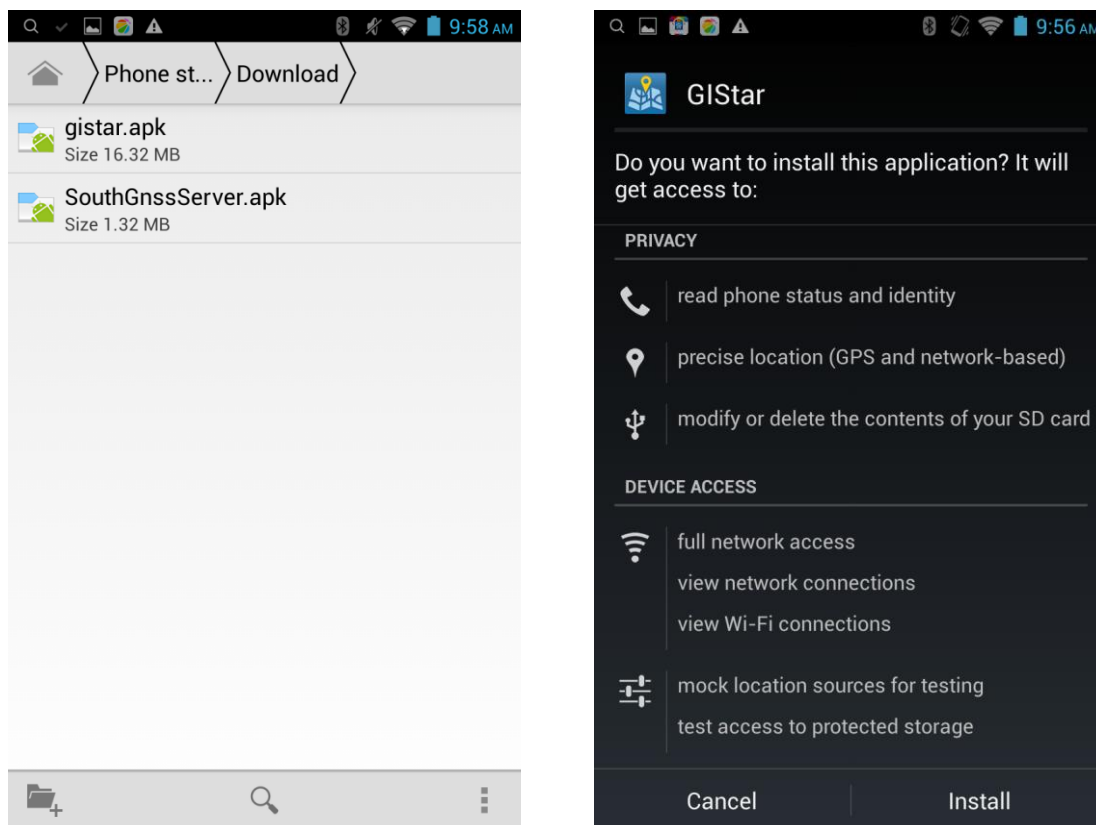


Figure 1.02

After the app is successfully installed, tap on **Done** or **Open** to finish.

Note: LBS Manage (SouthGnssServer) is installed at the same time, this program is used to control the connection with receiver.

Chapter 2 Main Interface

The GISar main interface contains a base map, general information and various tools which users will use most often, see the screenshot as below.

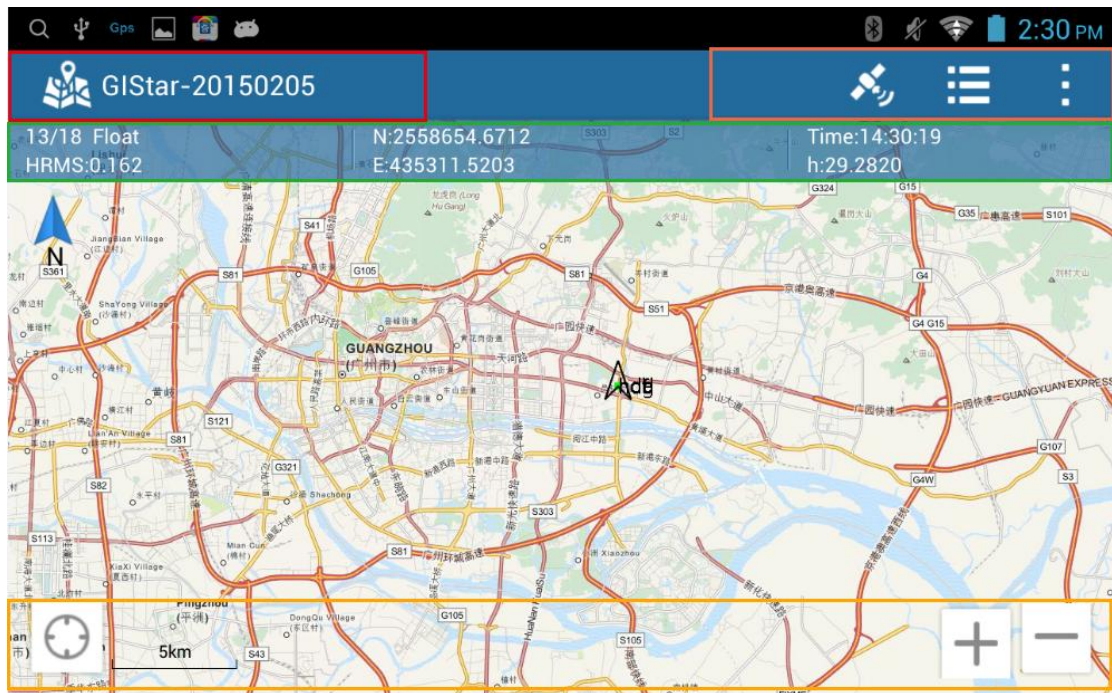


Figure 2.01

2.1. Current Project

This will display your current project name, you will know which project you are doing on.

2.2. Location Information

Go into this interface you will get some information about your location including satellite information, positioning information, base information and data output in port debug interface.

This one is the same interface of **LBS Manage** program, you can also go into LBS Manage program to view all information.

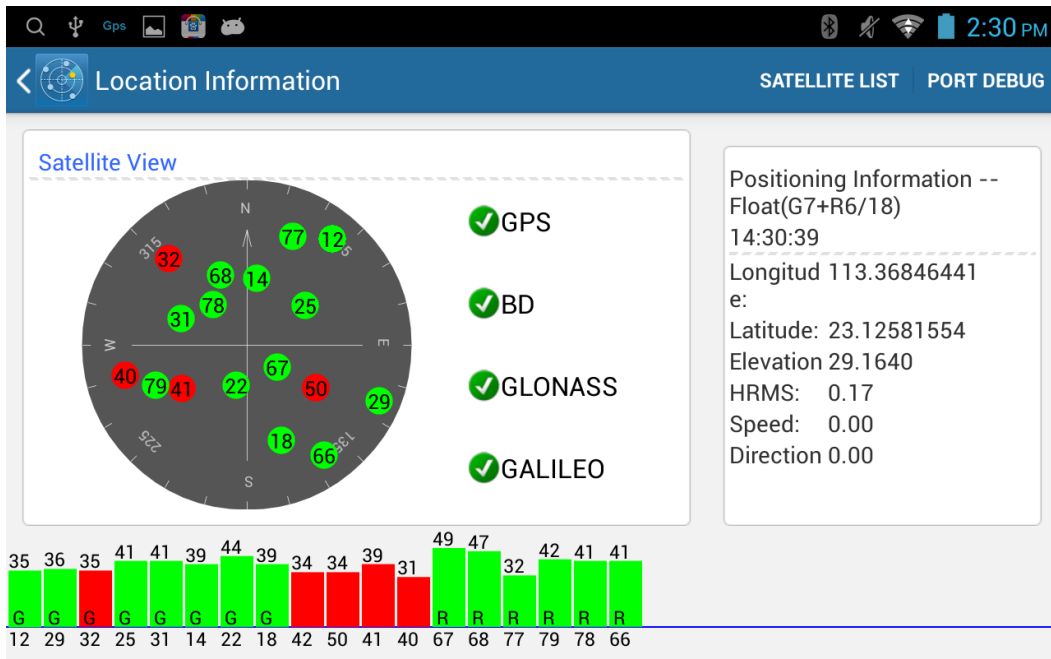


Figure 2.02

2.2.1. Satellite Status

In this section you will see the spatial orientation of satellite constellation, so you can see if the satellite is rising or falling in the sky.

Click on the toggle before satellite constellation, you can define to turn on or off the satellite. If the toggle is shown in green, it means that the satellite is on, otherwise, the satellite will turn off if the toggle is in black.

Under the satellite skyplot, that is the Signal Noise Ratio graphs for each satellite.

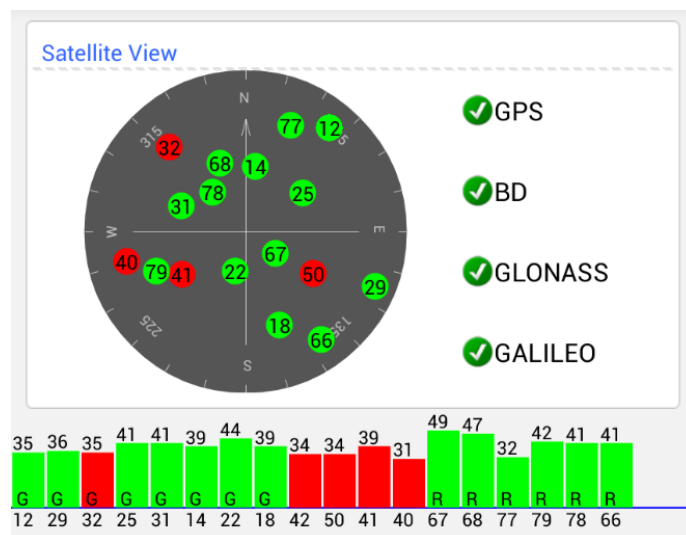


Figure 2.03

2.2.2. Position Information

At the position information section, you will see the current position given in Latitude, Longitude, ellipsoid elevation, HRMS, speed and direction, as well as your local time above.


```
Positioning Information --  
Float(G7+R6/18)  
14:30:39  
-----  
Longitude: 113.36846441  
Latitude: 23.12581554  
Elevation: 29.1640  
HRMS: 0.17  
Speed: 0.00  
Direction: 0.00
```

Figure 2.04

2.2.3. Base Info

In this section, you can view the base information includes the coordinate and message type.

```
Base Info  
14:56:04  
-----  
Longitude: 113.44207026  
Latitude: 23.10923045  
Ellipsoidal Height: 0.4421  
Spatial Distance: 8240.80  
Azimuth:  
Message Type
```

Figure 2.05

2.2.4. Satellite List

Under the satellite list tab, variety of information of satellites will be shown.

Satellite: it shows the reference number of each satellite.

SNRL1: it indicates the strength of L1 for each satellite.

Elevation Angle: it is the degree value of satellite elevation above the horizon, including rising and falling direction.

Status: it indicates that which satellite will be locked and used or not.

Satellite:	SNRL1	Elevation Angle	Azimuth	Status
G29	33.0/0.0/0.0	16.0	102.0	Locked
G32	33.0/0.0/0.0	35.0	312.0	Visible
G25	33.0/0.0/0.0	42.0	45.0	Locked
G31	37.0/0.0/0.0	52.0	311.0	Locked
G14	37.0/0.0/0.0	57.0	28.0	Locked
G22	39.0/0.0/0.0	55.0	187.0	Locked
G18	34.0/0.0/0.0	23.0	161.0	Visible

Figure 2.06

2.2.5. Port Debug

In this port debug interface, you will see the NMEA data or HEX data output in interval, this data is helpful for us to analyze.

HEX/NMEA: this button is to control what kind of data output for your usage.

Pause/Start: click on this button to control this kind of data output, you can pause and start this output anytime.

Save/Stop: this button is used to save this data as a txt file, when you tap on Save, it will start saving the data and finish if you tap on stop.

Clear: clear the output data at current window.

Character String Pause Save Clear

```

$GPGSV,7,2,21,14,57,028,38,22,55,187,40,18,23,161,36*48
$GPGSV,7,3,21,42,45,122,31,50,45,122,32,41,47,236,37,40,21,256,29*76
$GLGSV,7,4,21,67,57,148,49,68,63,335,48,77,15,030,33,79,41,263,44*6F
$GLGSV,7,5,21,78,52,341,40*5E
$GBDGSV,7,6,21,106,59,168,35,110,56,295,33,109,79,251,35,114,48,309,34*21
$GBDGSV,7,7,21,107,61,349,35*25
$GPZDA,065514.283,04,03,2015,00,00*5D
$GNGSA,A,3,25,22,14,29,31,,,,,,2.5,1.2,2.3*22
$GNGSA,A,3,67,79,78,68,,,,,,2.5,1.2,2.3*27
$PTNL,BPQ,062707.28,030415,2306.55382694,N,11326.52421587,E,EHT28.955,M,4*68

$GNGST,065515.00,0.001,0.640,0.510,97.3,0.512,0.638,1.016*7C
$GPZDA,065515.294,04,03,2015,00,00*5A
$GNGSA,A,3,25,22,14,29,31,,,,,,2.5,1.2,2.3*22
$GNGSA,A,3,67,79,78,68,,,,,,2.5,1.2,2.3*27

```

Send

Figure 2.07

2.2.6. Register for S660/S650

It is easy to know that this menu is used to make a registration for S660/S650 receiver. When you get a registration code from us, you are able to use this function to register S660/S650 receiver by entering the code.

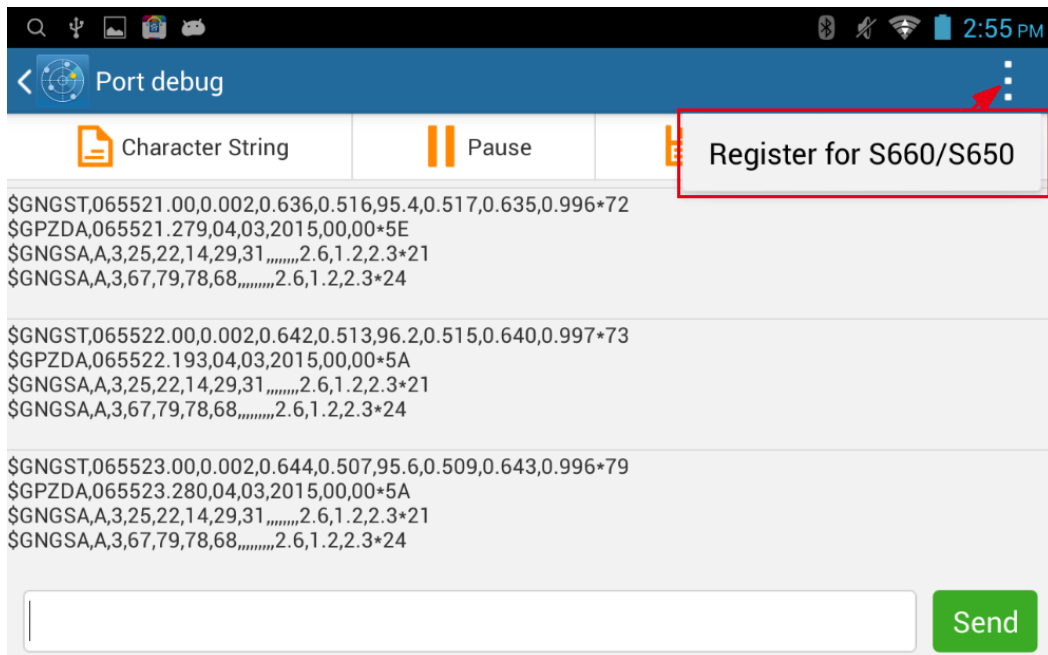


Figure 2.08

2.3. Common Used Menu

This menu contains some functions that users use most often.

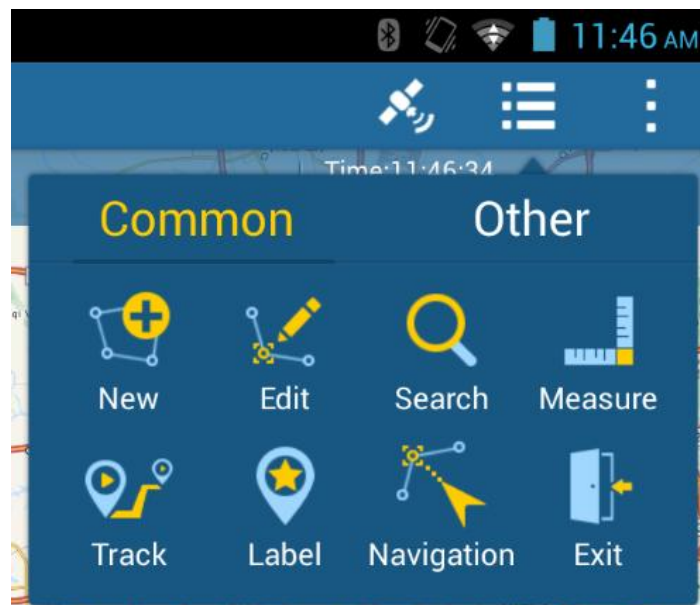


Figure 2.09

2.3.1. New



When you start to your measurement to collect points, lines and polygon, top on this new button and go into collecting interface.

Cancel: this is used to control the previous node on a line or polygon you need to undo, then re-design your line or polygon.

Recover: use this to recover the previous node you have canceled before on your line or polygon.

Delete: this is used to delete the line or polygon you are collecting. If you are collecting a line or polygon, tap on the recycle bin to delete the entity before you save it.

Properties: this is used to view the properties of your line or polygon you are collecting. While you are collecting a line or polygon, tap on properties to view the name and code of current entity.



This is used to setup what kind of entity you are going to collect, it includes point, polyline and polygon in standard.



This is a collecting mode you can setup store your point in real-time, smooth and auto, or obtain point from screen.



This is the collecting button, when you are ready to store a point, tap on this button and then input a name for your point.

2.3.2. Edit



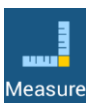
This allows you to move, add and delete node on a line or on a polygon according to your need, you can also move point to where you want as well.

2.3.3. Search



Use this to view the information of entities you have collected, including coordinate info, properties, image display and map display.

2.3.4. Measure



Use this to measure the straight-line distance on screen. When you start to measure distance, activate this function and tap on screen to locate the start point, then move to a new location, and a red line will follow the entire path of the selected points, the total distance and the direction of the last segment will be display, as well as the area.

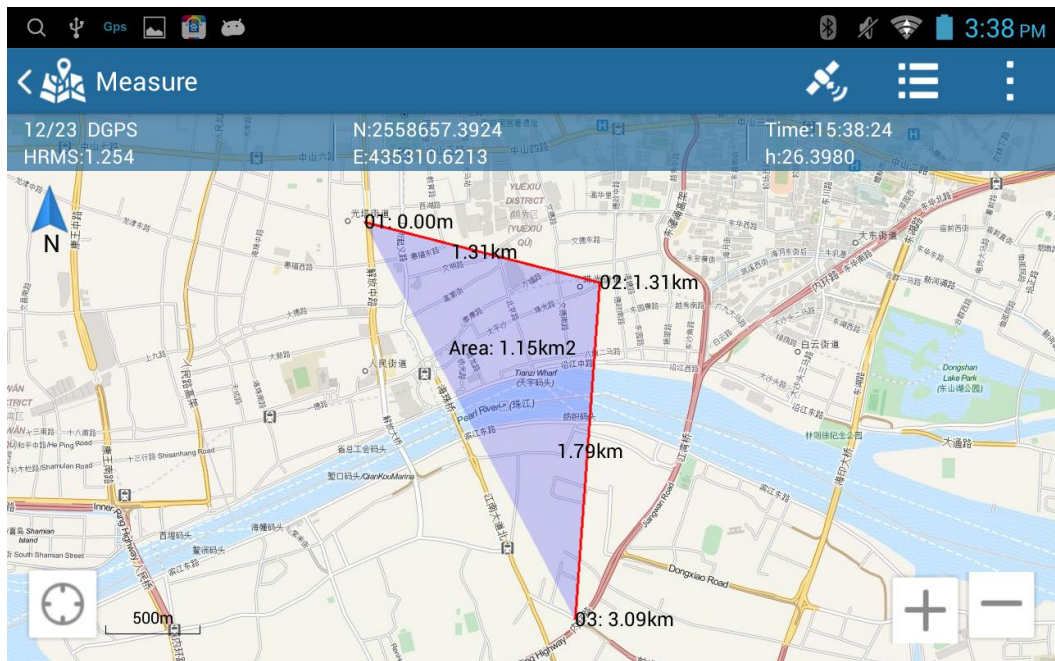


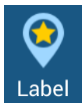
Figure 2.10

2.3.5. Track



This is used to record a track backstage, when this function once activate and it will record the track automatically, then tap on stop to finish recording.

2.3.6. Label



This is used to make a label during recording a track.

2.3.7. Stake out



Use this to stake points, lines or polygon from a list or from a screen selection.

2.3.8. Exit



Use this to exit and close the program.

2.4. Main Menu

This provides information on using the main commands from the every section.

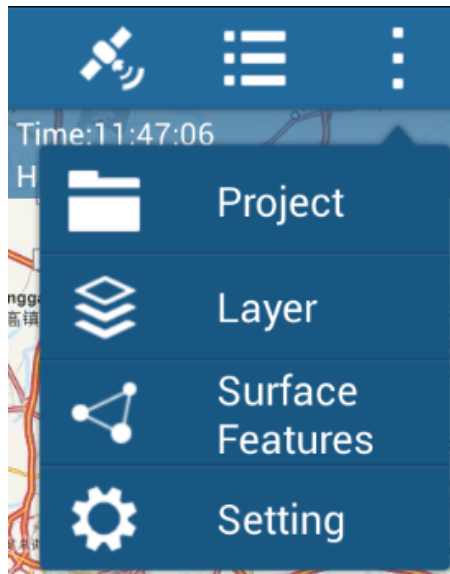


Figure 2.11

2.4.1. Project



The Project menu allows you to select an existing project or create a new job, or delete projects currently residing in data collector.

2.4.2. Layer



This section allows you to load a base map for your current project, use this you also can import, move and delete layer.

2.4.3. Surface Features



Use this to view and open the points/lines/polygon database, from here you can use numerous tools to view properties, filter, export and delete features.

2.4.4. Setting



The settings menu is used to setup and review settings that have been set for the current project, you can also specify default settings for new create projects. The settings menu includes 9 options, they are collecting settings, coordinate system, data template, track manage, symbol library, general setting, registration, updates and about.

2.5. Position Information

Here you will get the basic information about your current position.



Figure 2.12

2.5.1. Solution type

This indicates the solution type calculated by the receiver you are using, that includes Fixed, Float, DGPS and Single, as well as the quantity of satellite.

2.5.2. HRMS

This is the HRMS value of your current position in real-time, this value is most often used to ascertain the quality of the position, you can refer to this value to store your point.

2.5.3. Coordinates

This shows you the coordinates of your point, you can define the coordinate format in settings menu.

2.5.4. Time

This shows your local time.

2.6. Map Tool

This toolbar is used to help you locate your position, view the scale of your map and make a control for your map using zoom tool.



Figure 2.13

2.6.1. Location

If you can not find the position where you are in the base map, tap on this button to locate your position.

2.6.2. Scale

Check the scale of your base map, you can control this scale display in settings menu.

2.6.3. Zoom tool

Use this tool to control your base map to zoom out or zoom in.

Chapter 3 Main Menu

3.1. Project

The Project menu is used to create, open or delete projects currently residing in data collector.

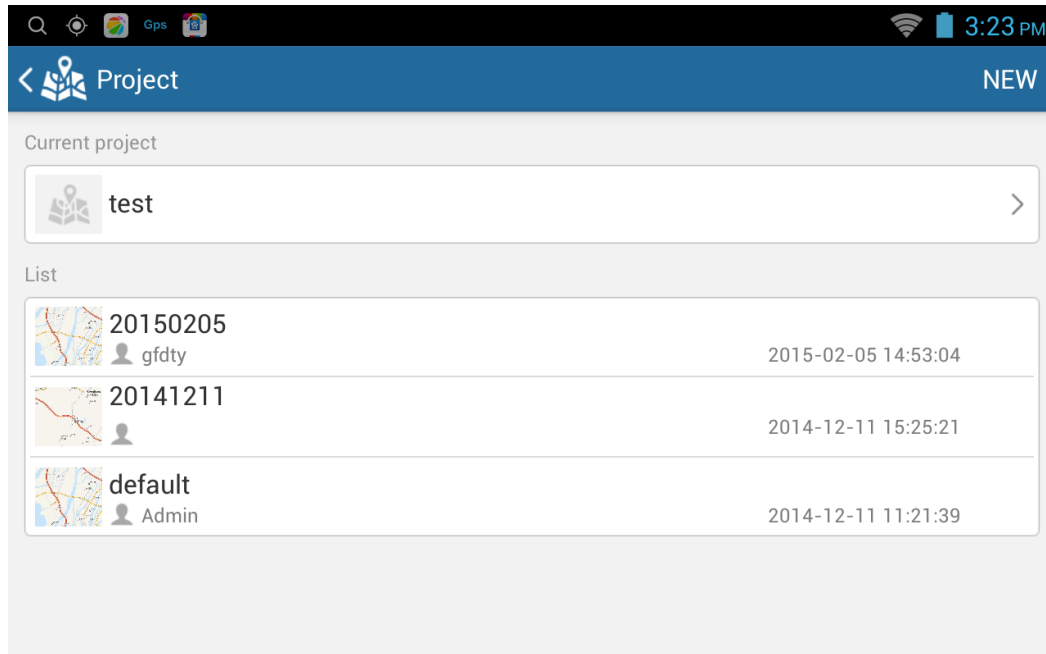


Figure 3.01

3.1.1. Current Project

This shows the current project which you apply for the current field job, and you are able to view the project information by tapping on the project.

3.1.2. List

In the directory, you will see all existing projects you have created, to **open** an existing project, simply tap on one of the projects you want.

3.1.3. New

To create a new project, simply tap on the NEW button. Then you will see the new project screen which will allow you to enter a project name, operator, load data template and setup coordinate system.

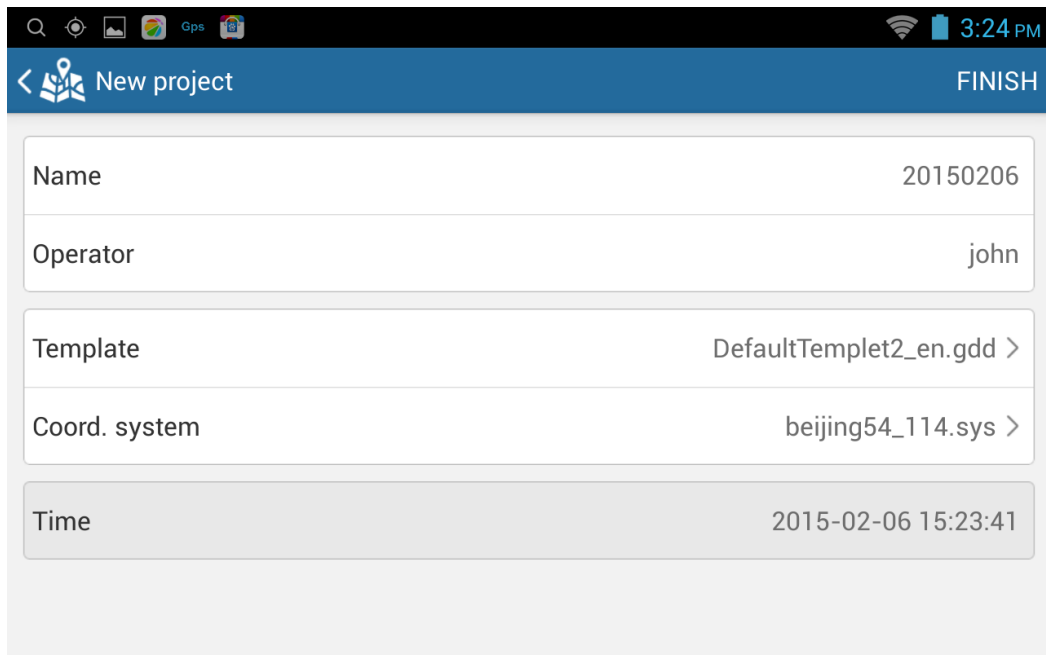


Figure 3.02

3.1.4. Delete

If you want to delete a project, first you need to hold on the project for a second until enter the select state, select the project by marking on the checkbox, tap on the recycle bin symbol on the upper right corner to delete the project.

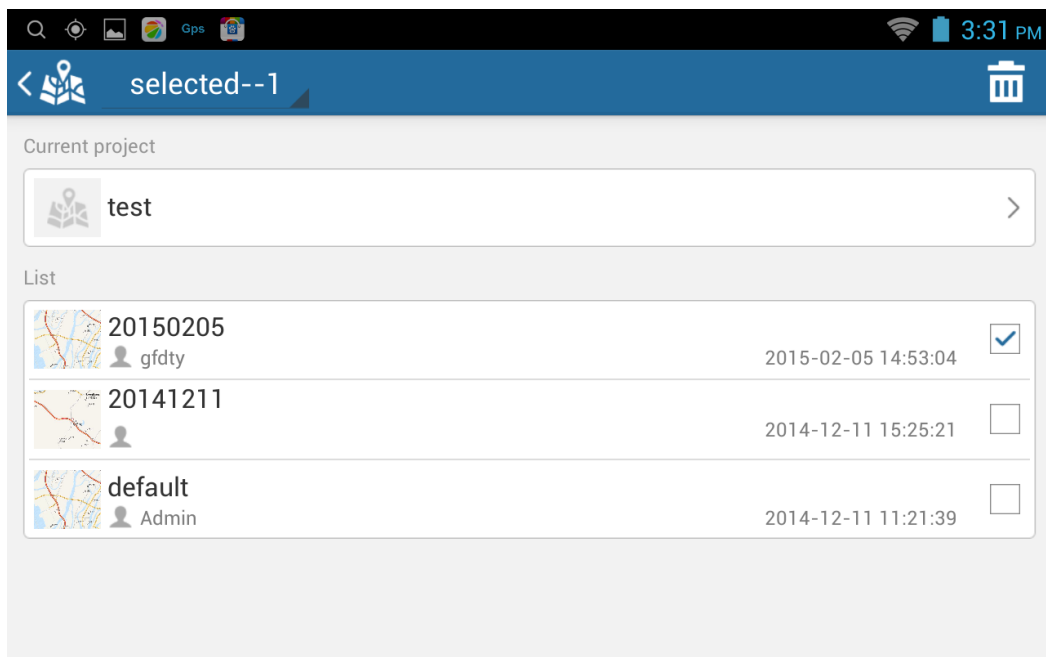


Figure 3.03

3.2. Layer

Go into Layer manage, you are able to load a base map for your current project, use this you also can import, move and delete layer.

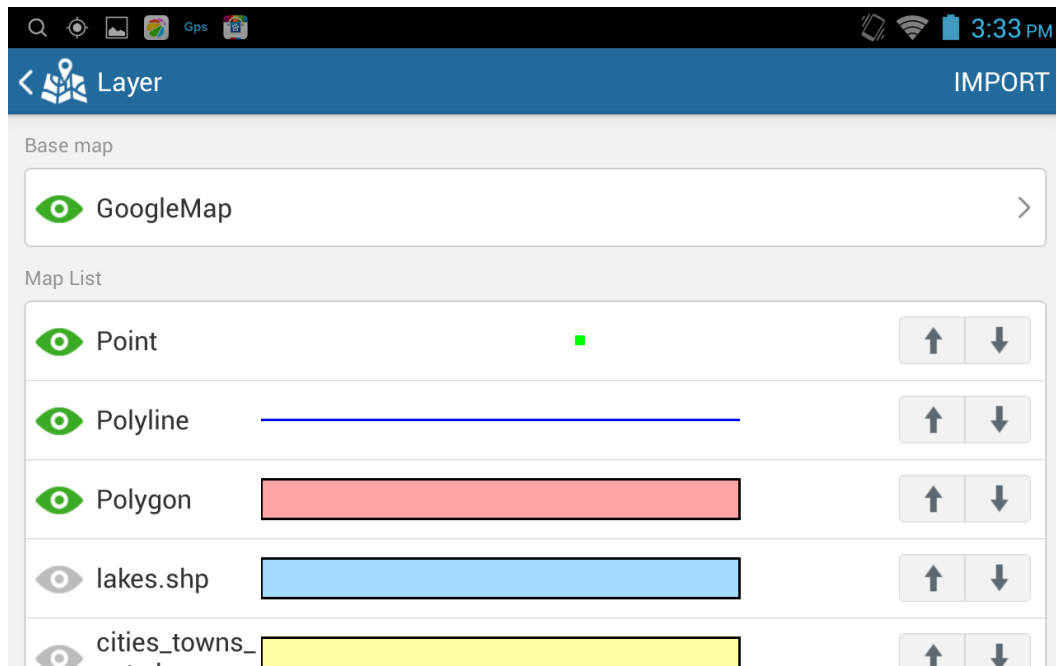


Figure 3.04

3.2.1. Base Map

This is a default base map shows you a background in the main interface and where you are located.

3.2.2. Map List

In the map list, there shows you Point, Polyline and Polygon as default.

You can tap on the arrows symbol on the right side to move map up and down, using this function allow you to show a layer over on the others.

Use the green eye symbol to control the layer hiding or displaying. If the eye symbol is in green, that means the layer is visible on background, otherwise, tap on the symbol, it will show gray and the layer will be turned off on background.

Hold on the layer for a second and enter select mode, check the box to select a layer, or use select tool to check all boxes, then a recycle bin symbol will show on the upper right corner, if you want to delete layer, tap on that recycle bin.

3.2.3. Import

Click on this option to import GCP files (SOUTH edition format), SHP files, DXF files and other format image files that are associated with your project.

Copy your files into folder **com_southgnss_gistar** first, and go to Layer interface, tap on IMPORT option, there you will see your files in the list, check the box to load layer you want.

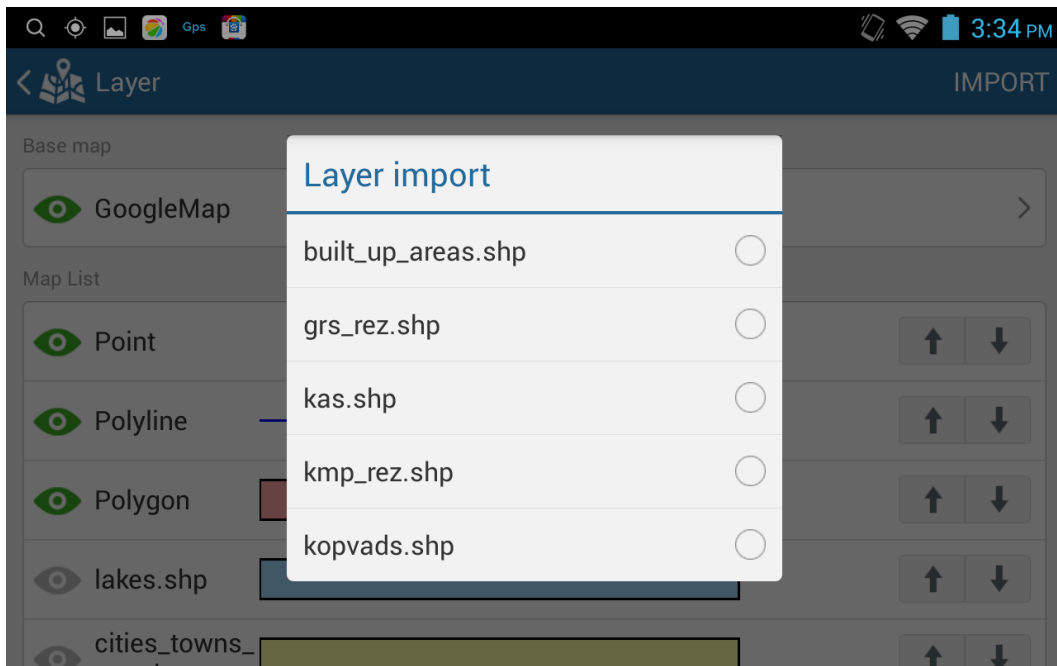


Figure 3.05

3.3. Surface Features

Use this to view and open the points/lines/polygon database, from here you can use numerous tools to view properties, filter, export and delete features.

No.	Name	Code
1	p1	
2	p2	
3	p3	
4	p4	
5	p5	
6	p6	

Figure 3.06

3.3.1. Export

You can use this to export common used format file for your need, such as *.shp, *.dxf and *.dat. The shape file contains points, lines and polygon, it can be imported into other products that support shape file. And about DXF file, it is a file of your current project drawing, contains drawing entities of your points and lines.

Export all features (entities) or customize to export the features you need, hold on the features for a short time and then mark on the checkbox to select features, export the selection.

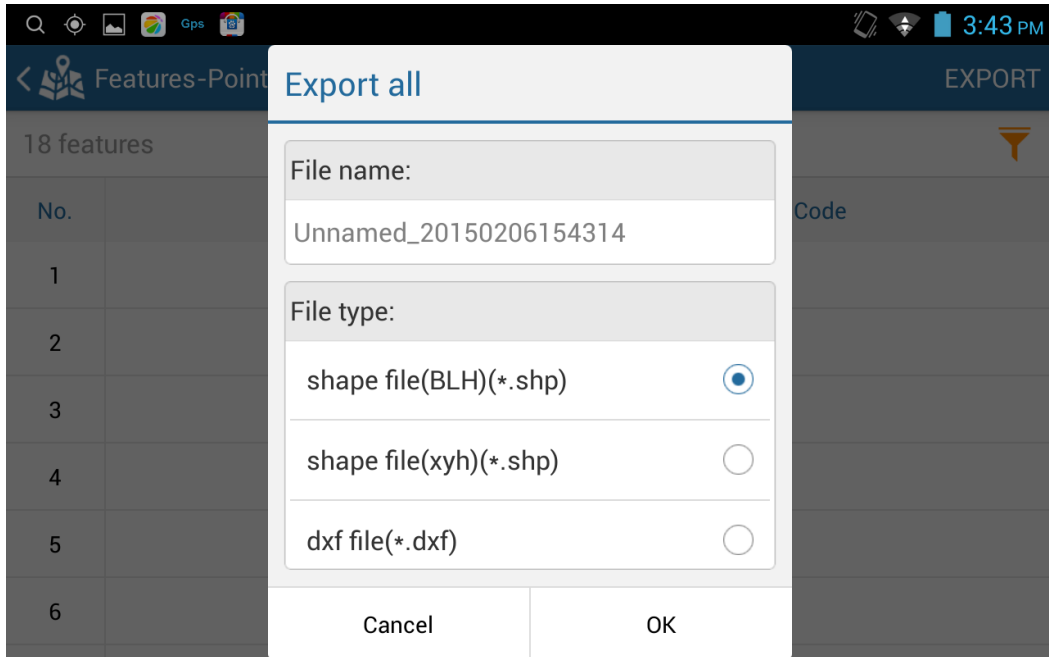


Figure 3.07

3.3.2. Filter

It will help you to display points, lines and polygon, as well as the field you want to display.

Tap on the symbol, then select the layer and disable/enable the display field, click on filter button, you will see your features display in the interface.

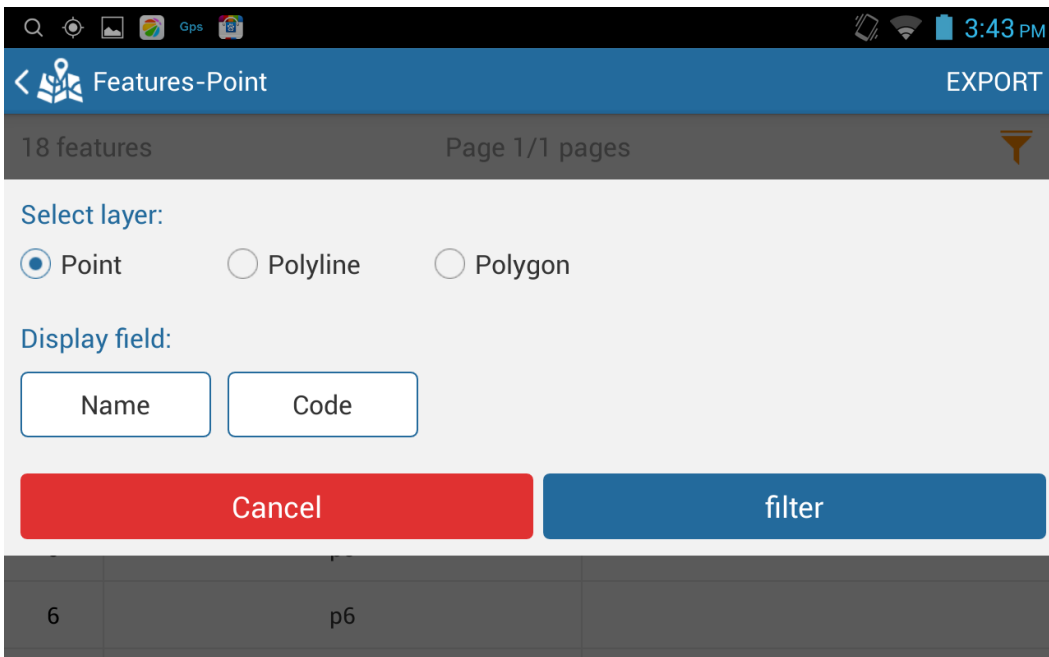


Figure 3.08

3.3.3. Delete

Use this to delete the current point or selection in the list, if you delete the

features from the list, they are not able to be restored.

Hold on the features for a short time and then mark on the checkbox to select features, tap on DELETE button at the upper right corner to delete features.

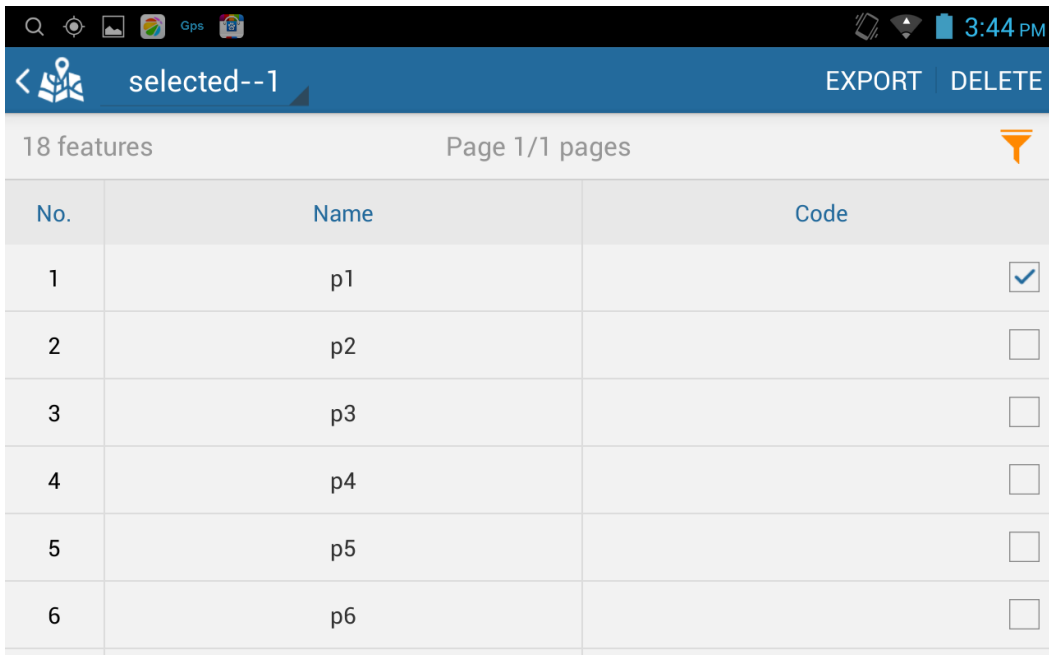


Figure 3.09

3.3.4. Select Tool

Hold on the features for a short time and then mark on the checkbox to select features, or use select tool to select all or deselect all, then export or delete the selection.

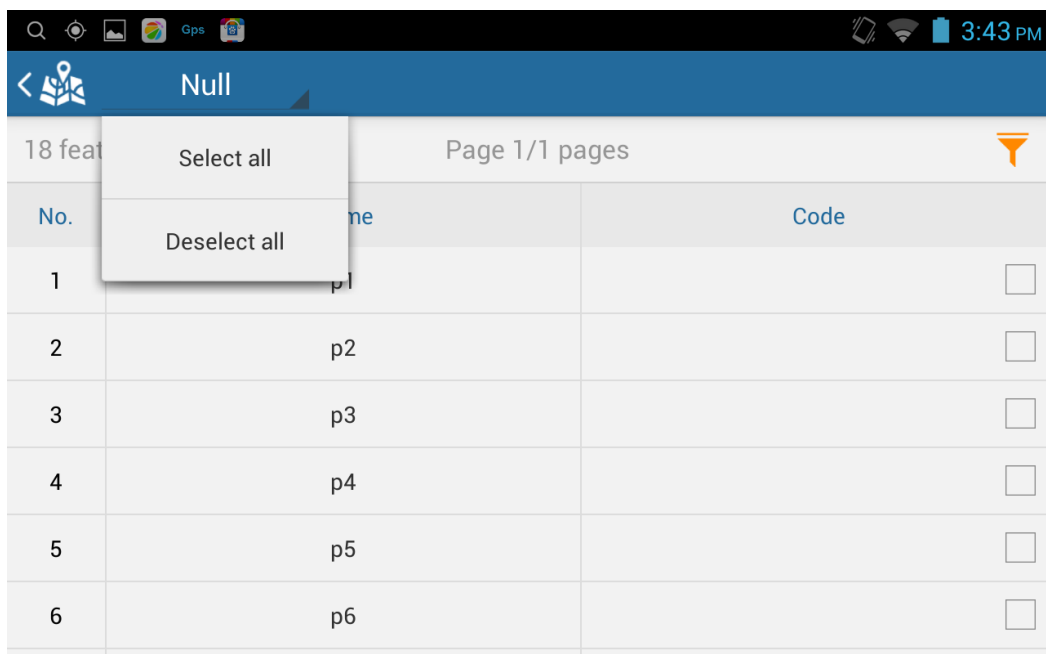


Figure 3.10

3.4. Settings

The settings menu is used to setup and review settings that have been set for

the current project, you can also specify default settings for new create projects. The settings menu includes 9 options, they are collecting settings, coordinate system, data template, track manage, symbol library, general setting, registration, updates and about.

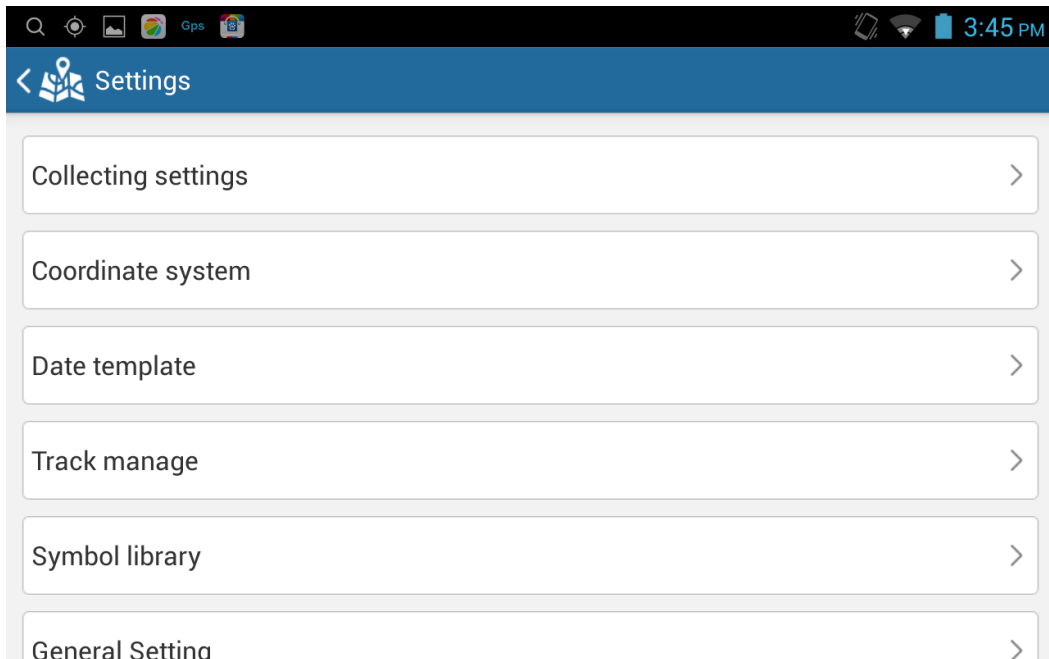


Figure 3.11

3.4.1. Collecting settings

This allows you to setup the basic configuration for features collection.

Auto collect: use this to collect features by time or by distance.

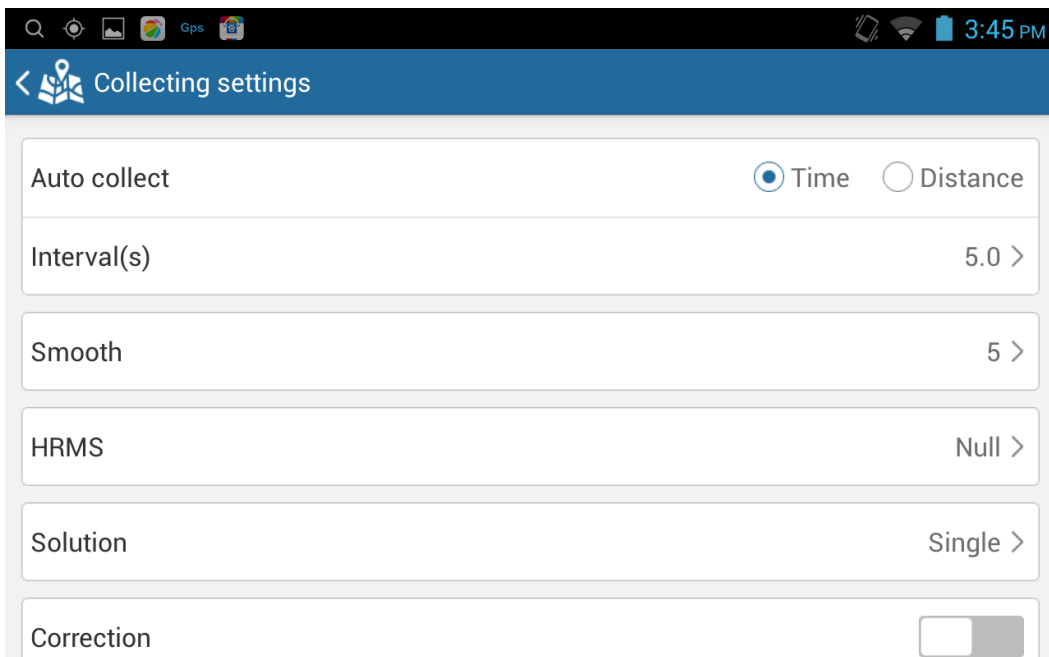


Figure 3.12

Interval: setup the interval for your collection related to auto collect mode above, for example, if you collect features by time, you are able to set time into 3, 5, 10 seconds or more, or you can specify time as well by clicking on the pencil

symbol.

Smooth: setup smooth number for the collection, it will take the number of points to calculate an average coordinate for current point.

HRMS: this is used to setup the horizontal tolerance HRMS for current reference, select number in the list or specify by clicking on the pencil symbol.

HRMS	
0.02	<input type="radio"/>
0.1	<input type="radio"/>
1.0	<input type="radio"/>
5.0	<input type="radio"/>
10.0	<input type="radio"/>
100.0	<input type="radio"/>
Null	<input checked="" type="radio"/>

Figure 3.13

Solution: this is used to setup the requirement of accuracy for your collection, this will depend on your accuracy requirement of your current project.

Solution	
Single	<input checked="" type="radio"/>
DGPS	<input type="radio"/>
Float	<input type="radio"/>
Fixed	<input type="radio"/>

Figure 3.14

Correction: this allows you to input the correction parameter current surveying area.

Antenna height: input a real antenna height value for your project.

3.4.2. Coordinate system

Use this to define a coordinate system for your project. The datum is used to transform GPS derived curvilinear coordinates (latitude, longitude and ellipsoidal height) into plane coordinates (northing/y, easting/x, and ellipsoid height).

In the coordinate system dialog is where users can select an existing coordinate system or create a new coordinate system or edit from the list, this list allows the users to add the coordinate system they use most often, and easy to view the details of coordinate system.

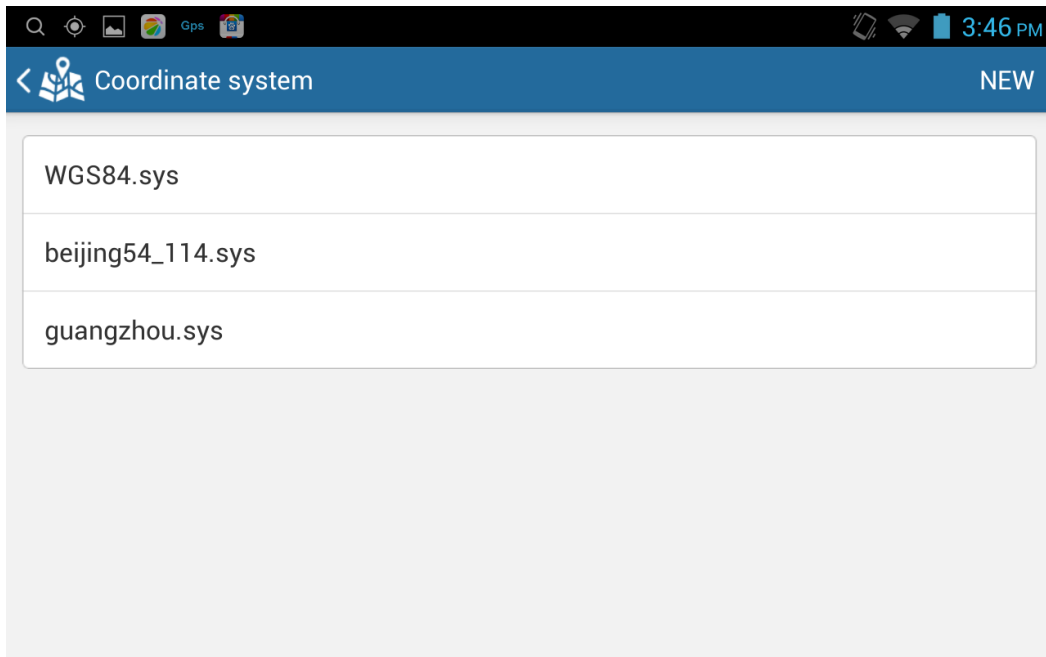


Figure 3.15

New: this is used to create a new coordinate system. It allows users to define all parameters for the coordinate system, input a name for coordinate system, select ellipsoid type and projection type, enable or disable 7 parameter or 4 parameter. When you finish your configuration, tap on save button to add the coordinate system into list.

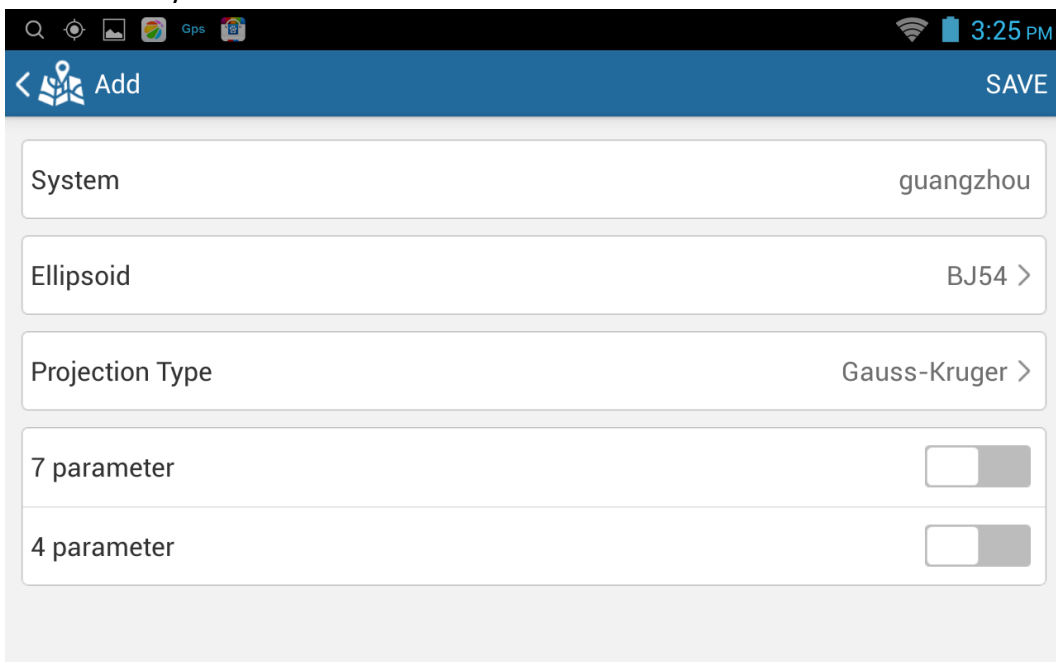


Figure 3.16

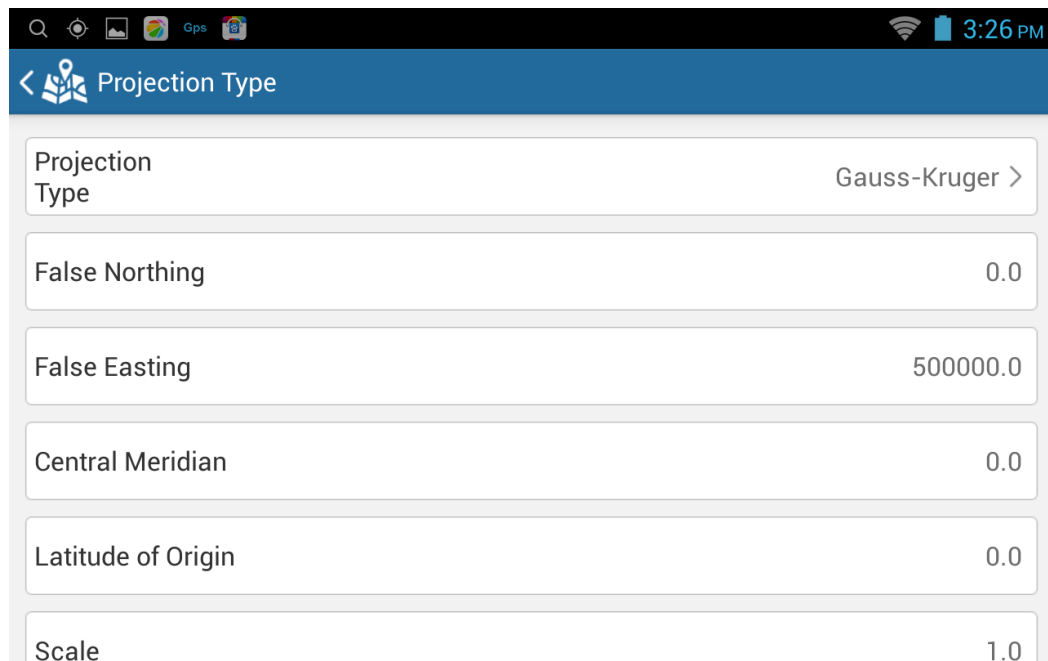




Figure 3.17

Select: hold on the coordinate system for a short time and then mark on the checkbox to select, or use select tool to select all or deselect all.

Share: users can use this function to share the coordinate system through the email, Bluetooth or other methods.

Mark on the checkbox of the coordinate system to select, then tap on  icon to share the coordinate system you have selected by email, Bluetooth or other methods.

Delete: this allows you to delete the coordinate system from the list. Select the coordinate you want, then tap on recycle bin symbol  to remove the coordinate system.

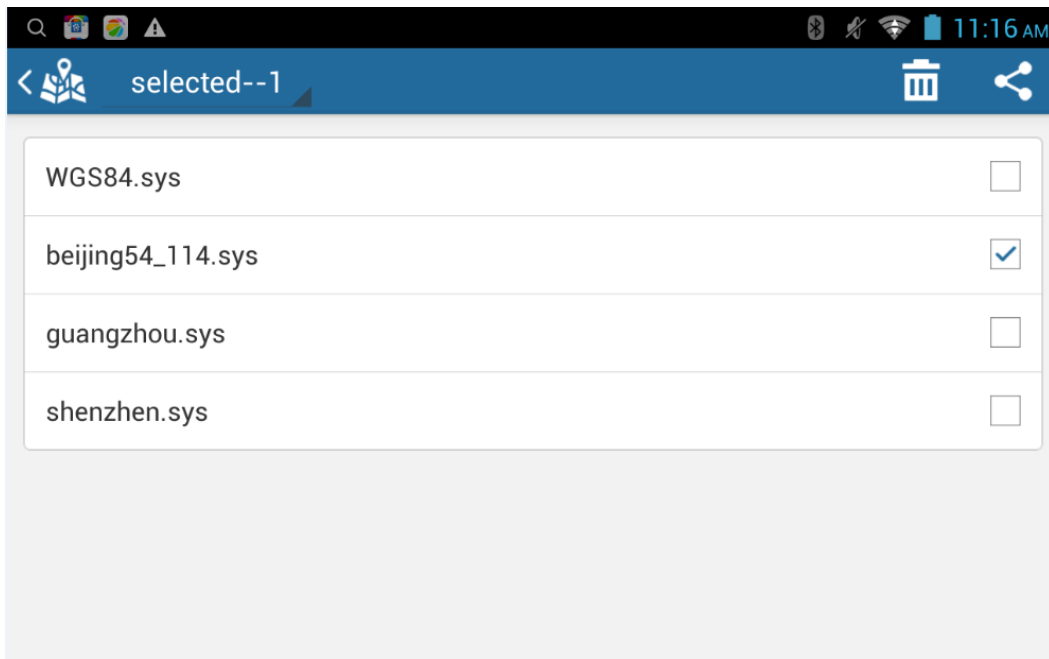


Figure 3.18

3.4.3. Data template

This allows you to view the template list, delete and share the data template. This data template is required for all project, when you start the program and create a new project, you will be asked to add template file. GISTar contains 2 default template file (DefaultTemplet1_en.gdd/ DefaultTemplet2_en.gdd) for your reference, or you can also load a new template file into folder **com_southgnss_gistar /Dic**.

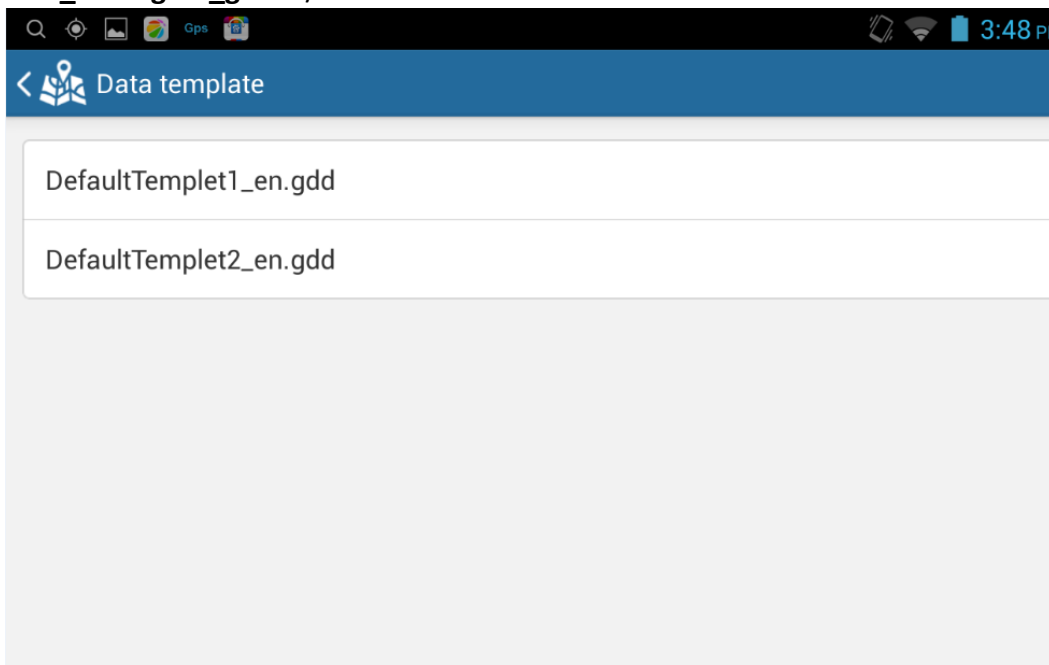


Figure 3.19

*Note: if you create a new data template by yourself, then you have to save the template file as format *****_en.gdd.*

Select: hold on the data template for a short time and then mark on the

checkbox to select, or use select tool to select all or deselect all.

Share: users can use this function to share the template file through the email, Bluetooth or other methods.

3.4.4. Track manage

In track manage, you can check, export, delete and share the track, as well as control it to display or not. In the track manage dialog you will see the track have been recorded.

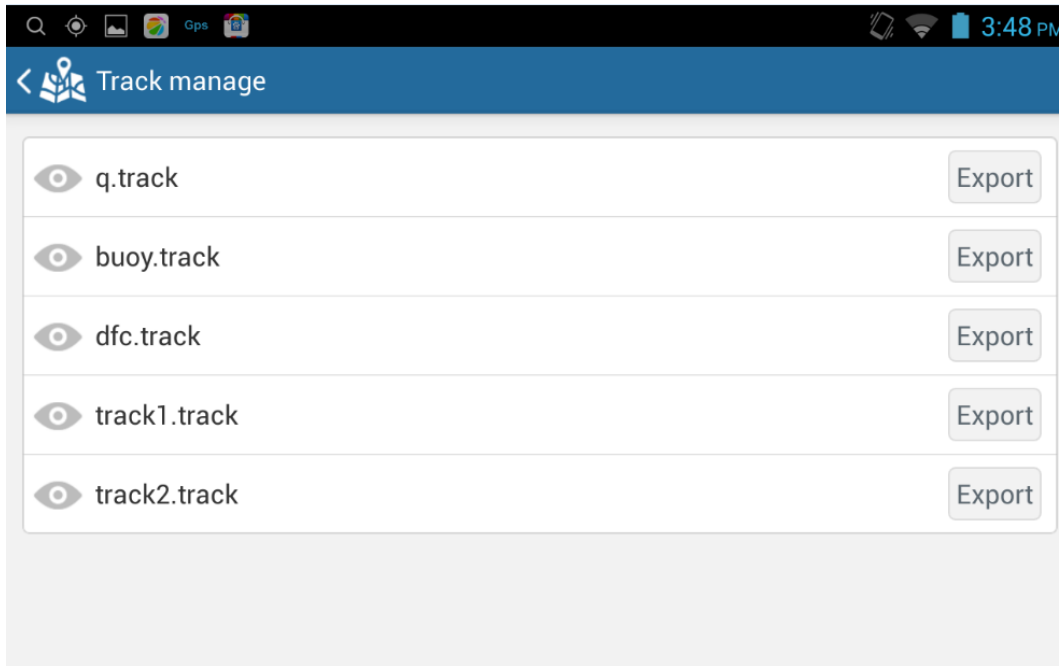


Figure 3.20

Display: tap on the eye symbol at the left side, control the display of your track. When the eye turn to green, it means the track is view on main interface.

Export: this allows you to export the track as txt, kml and gpx file for your linework.

Tap on export button at the right side of each track option, input a name for your file or use the default, select the file type.

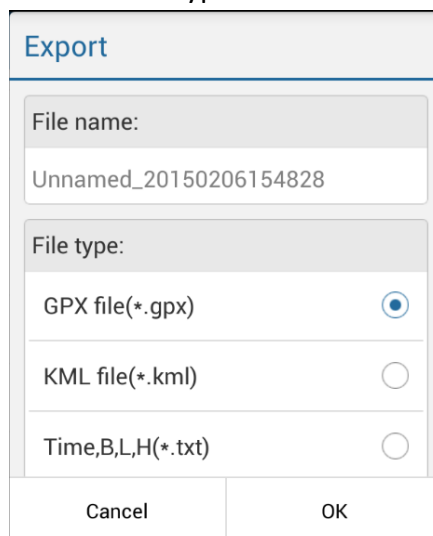



Figure 3.21

Select: hold on the track option for a short time and then mark on the checkbox to select, or use select tool to select all or deselect all.

Delete: this allows you to delete the track from the list. Mark on the checkbox to select your track file, then tap on recycle bin symbol  to remove the track.

Share: this is used to share your track file with others by email, Bluetooth or other methods.

3.4.5. Symbol library

In this symbol library, you can view the symbol of point, line and polygon. Refer to these symbols and define it in Layer dialog.

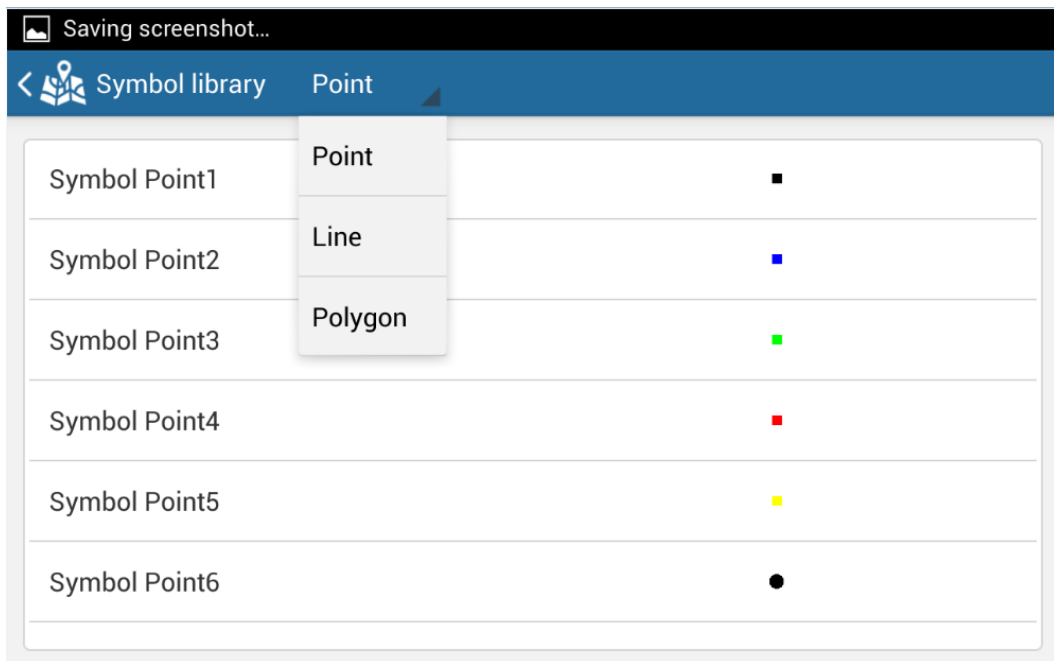


Figure 3.22

3.4.6. General setting

This setting menu allows you to setup the general configuration for this program, including the usage of scale, display mode, screen rotate, backlight of the screen and language setting.

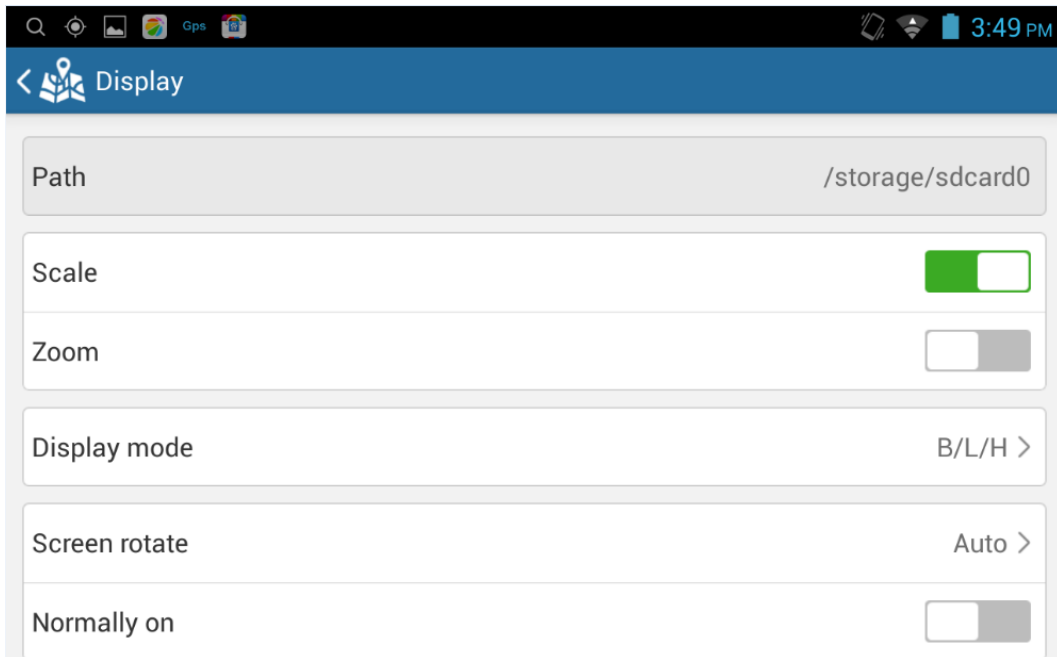


Figure 3.23

Path: this displays the path of where your project located.

Scale: this is a control switch to display the scale on main screen. If you need to show the scale on main interface, turn it on by tapping on the switch.

Zoom: this switch is used to control screen zoom on main interface in order to use on some Android devices which are resistive touch screen.

Display mode: this is used to control the coordinate format (geodetic coordinate, B/L/H, or plane coordinate, x/y/h) display on main interface.

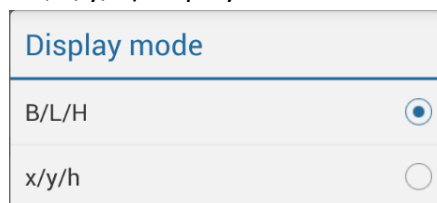


Figure 3.24

Screen rotate: this is used to setup the rotation of screen, such as auto rotate, horizontal or vertical.

Normally on: this switch is used to control the screen to keep activating all the time.

Language: you can use this to change the language what you want. There are 2 options for your choice currently, Simplified Chinese and English.

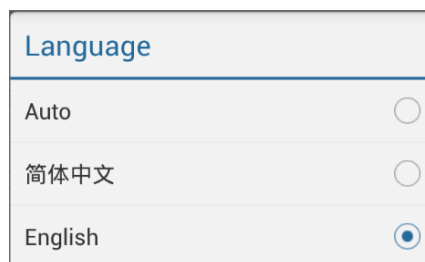


Figure 3.25

3.4.7. Registration

This is used to make registration for this software when you get a temporary code or a permanent code.

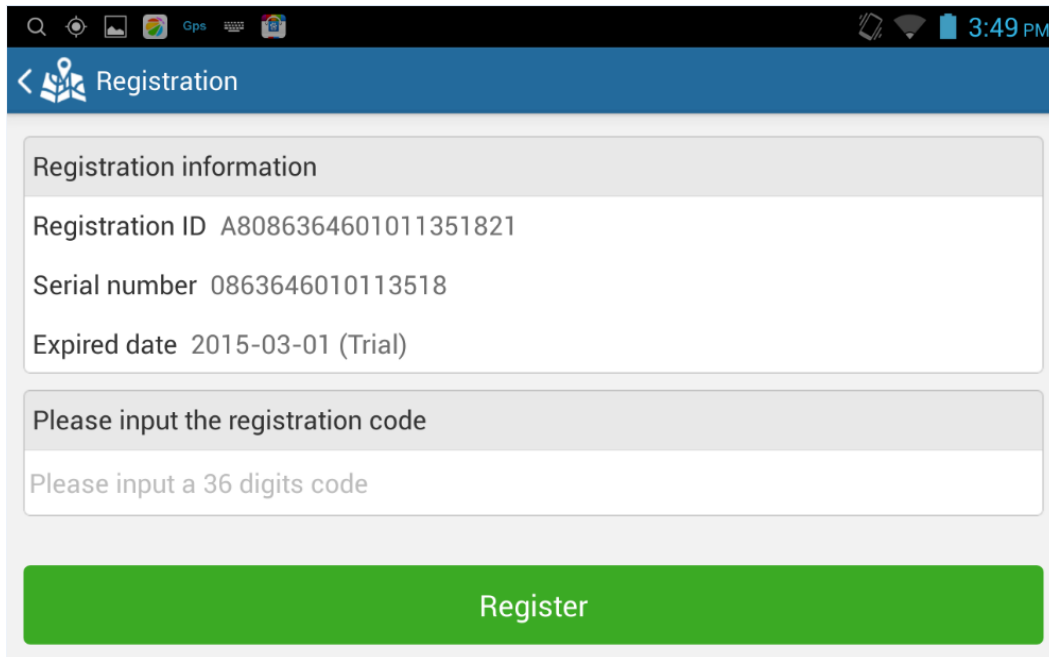


Figure 3.26

Tap on registration option and get into registration interface, you will see the registration information about this software, that includes the unique registration ID, Serial number of controller and expired date, send this information to your dealer or manufacturer to get a new registration code if your program has expired.

For example, your registration ID is A80863646010113518, and serial number is 0863646010113518, send this information to dealer or us, we will make a registration code for you.

- a) The program will register online automatically if your Android device connects to internet. Once we have made the code in system then we will inform you immediately, and you can restart the program then check the registration result.
- b) If the program will not register automatically online, you will get a code and extract 36 digits registration number and input into blank box, click on register button to finish.

3.4.8. Updates

Users can update the software to the latest version if we have new release online, this is intended to fix few bug and improve the user experience.

Once your controller connects to internet, this software will check updates online automatically and ask you to update.

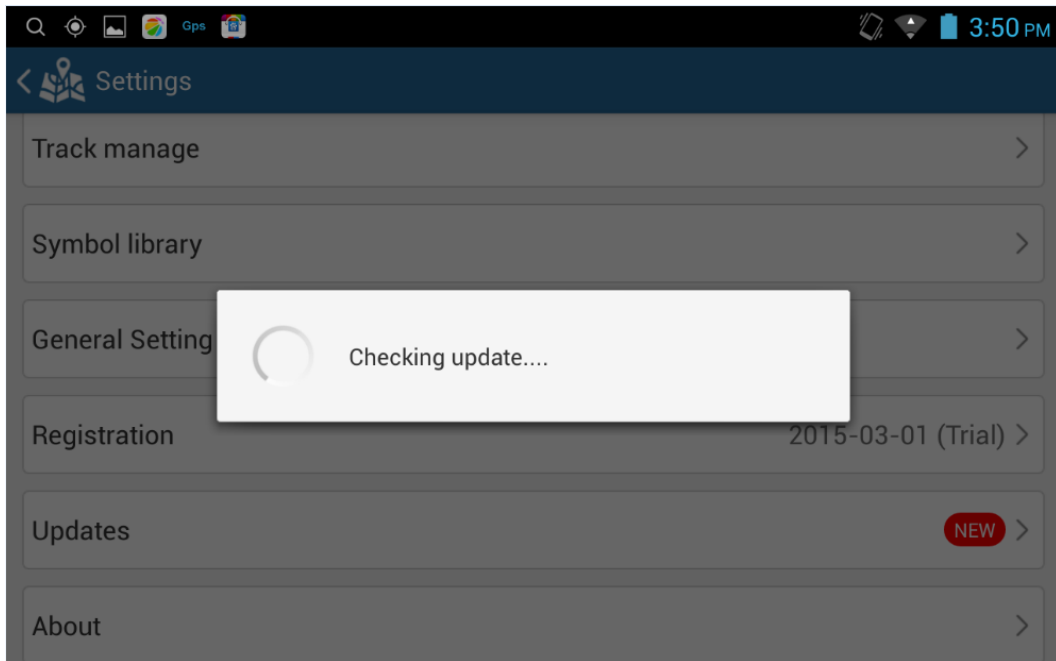


Figure 3.27

3.4.9. About

Use this to view information about GISStar version you have installed, function introduction, operation manual and feedback.

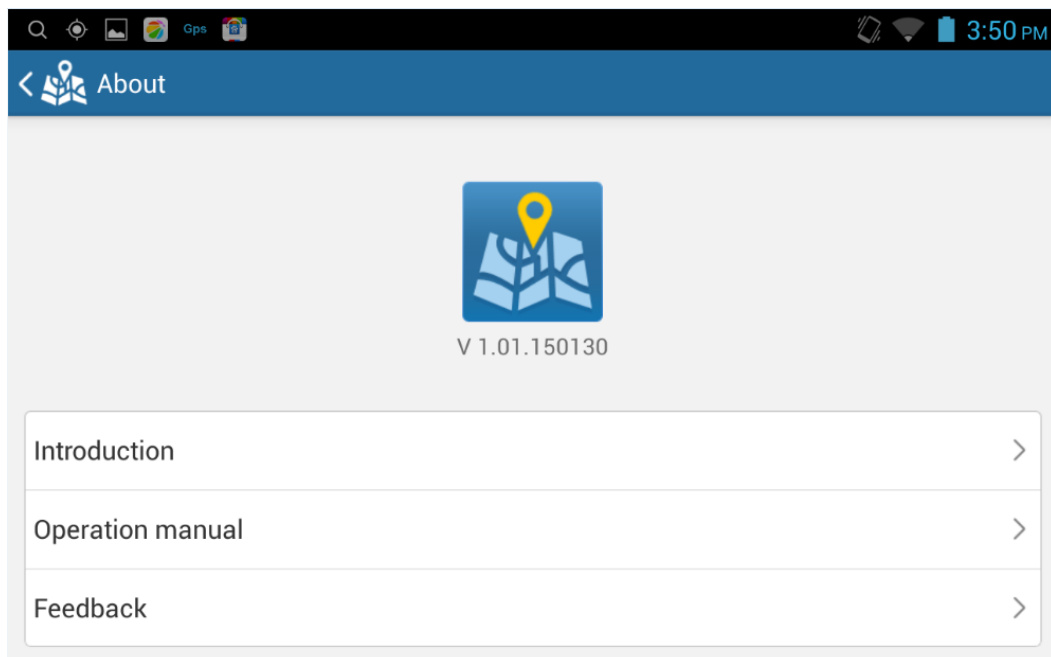


Figure 3.28

Introduction: this is which you can see the introduction for some key functions.

Operation manual: this is the complete operation manual of GISStar for Android, there you will see the introduction for all functions, so that you can take this manual for your reference and help you how to operate GISStar.

Feedback: you can use this to send us your feedback or advice about our software and then we will improve the function of GISStar and user experience.

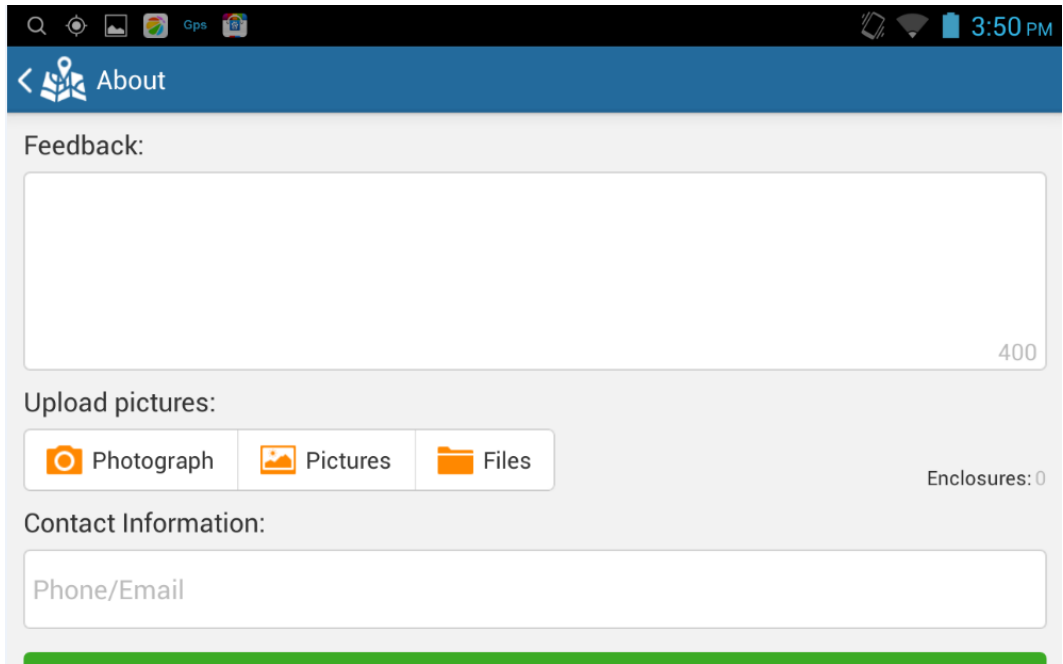


Figure 3.29

Chapter 4 Operation

This chapter will introduce you how to connect an RTK receiver with G1Star program, here take SOUTH S660 for example. Before connecting the receiver, please make sure that the G1Star program has been installed on your Android device.

- 1) Run G1Star program on your Android device, and power on S660 receiver.
- 2) Tap the satellite symbol at the upper right corner and get into SouthGnssServer main interface.

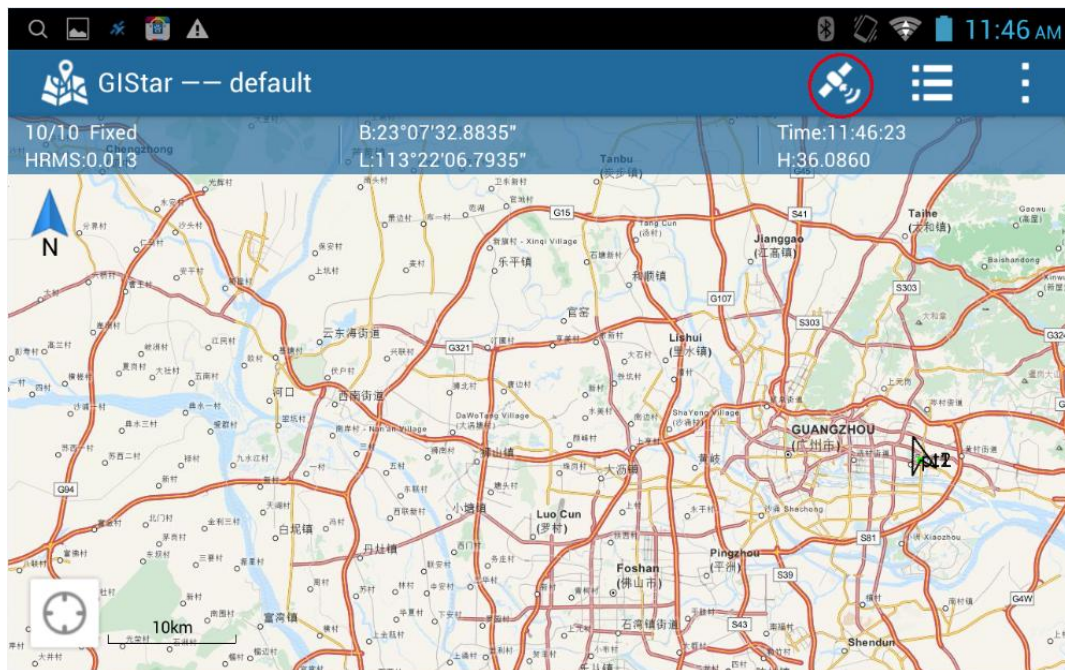


Figure 4.01

- 3) Tap on connection type and select Bluetooth

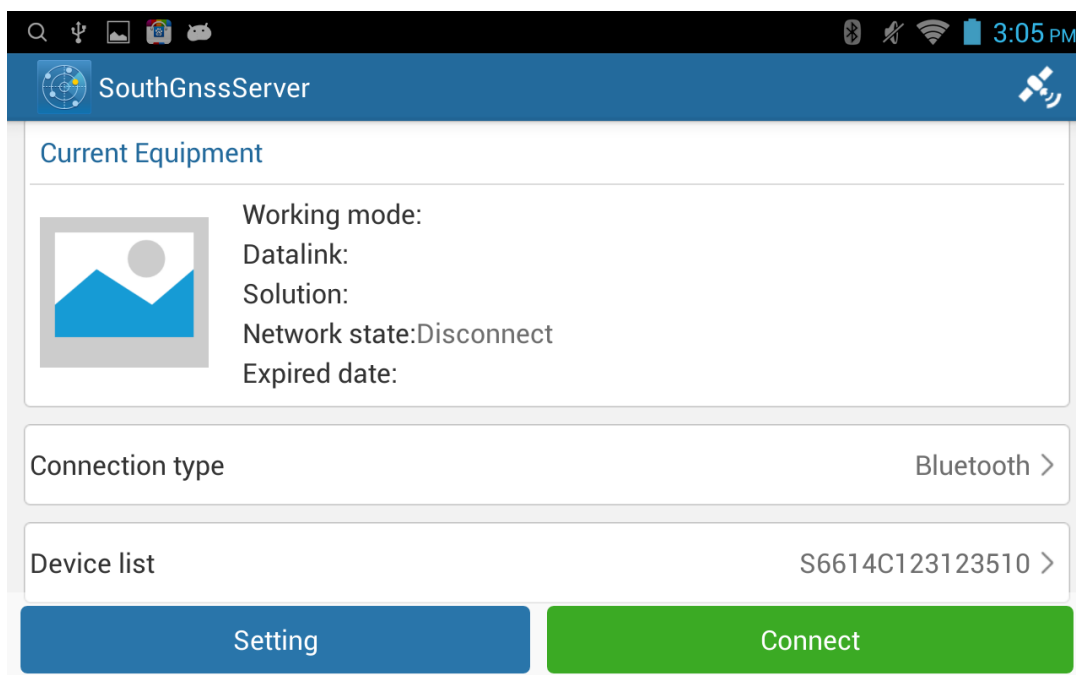


Figure 4.02

- 4) Go to device list, tap on search, your Android device will search the surrounding Bluetooth devices.

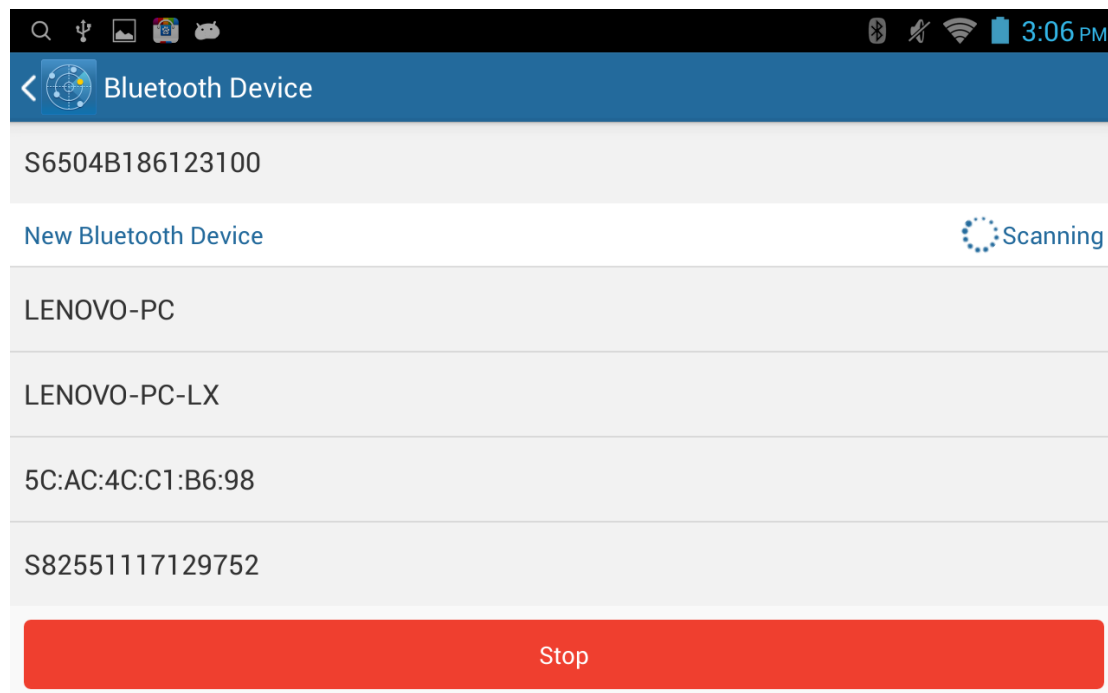


Figure 4.03

- 5) Then pick the correct serial number from the list.
- 6) Tap on connect button to establish the Bluetooth connection with S660 receiver, at this point, you can hear beep once from the receiver.
- 7) Tap on setting button to setup NTRIP parameters. When you tap on Datalink and select data collector internet option, Datalink setting will appear and allow you to configure the parameter for NTRIP broadcaster.

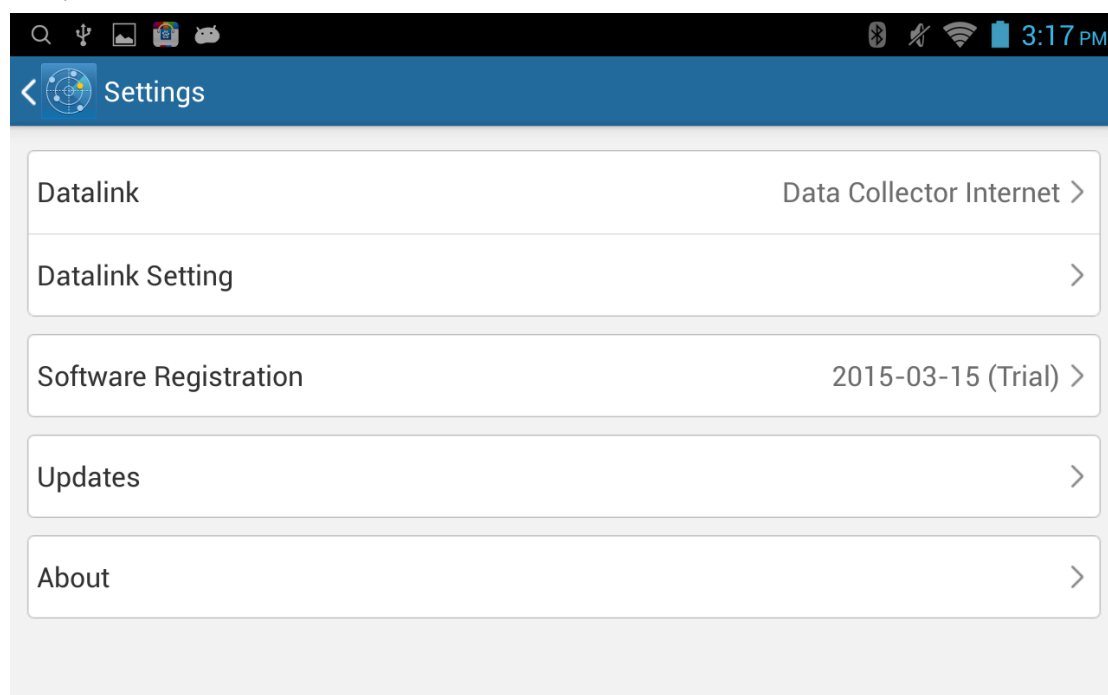


Figure 4.04

- 8) Input the CORS network IP address and port, assigned username and password, then request your source table, and pick up one of the mountpoint to access.

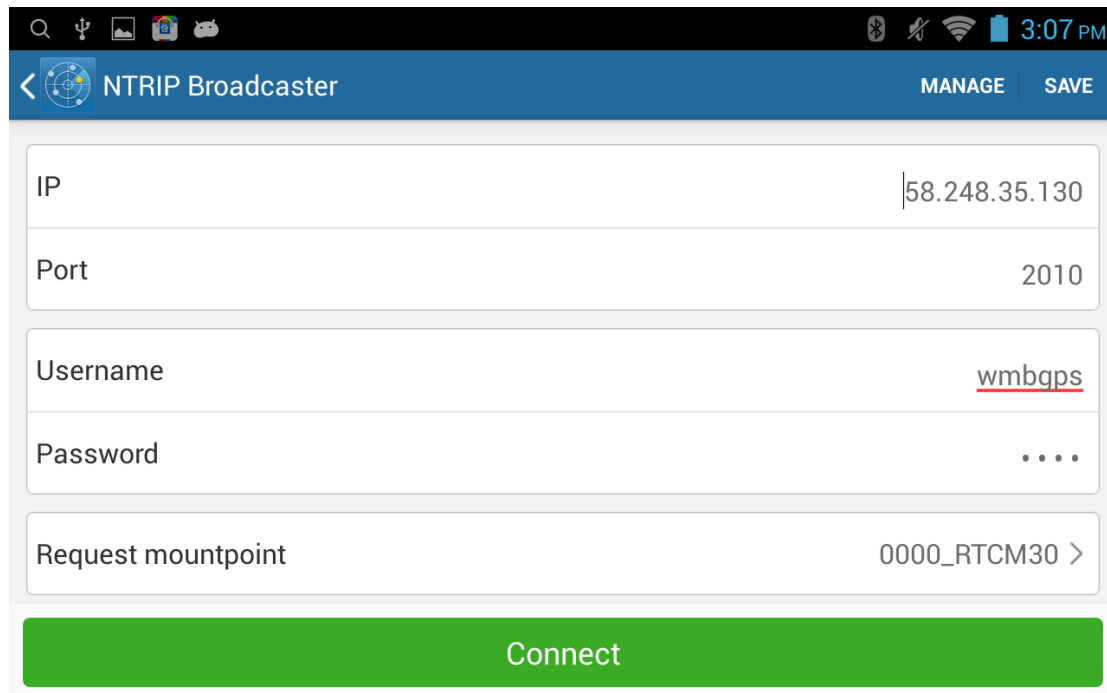


Figure 4.05

- 9) Select the mountpoint and tap on connect button, at this time, you have successfully connected to server and begin to get correction from server. You can check the fourth indicator on S660 receiver, if it is blinking, that means the receiver already get data stream from server and computes high accuracy coordinates for your position.

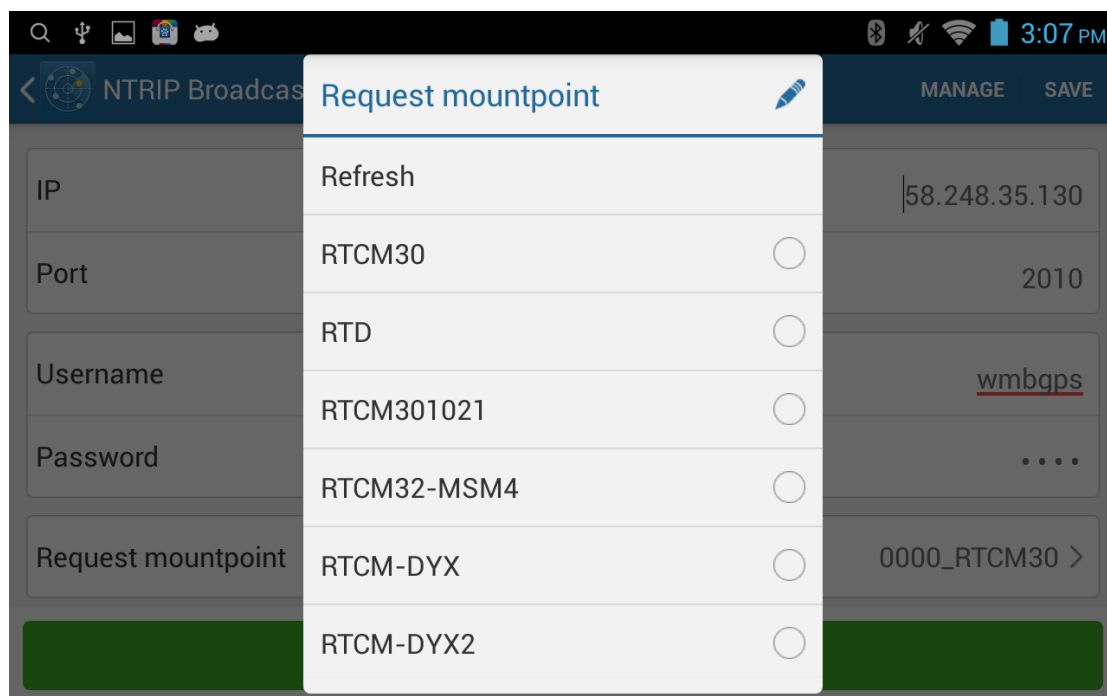


Figure 4.06

- 10) Return to G1Star main interface and start your new job. Click on the main menu and create a new project for your job, tap on new button and go into new project interface, input a

project name and operator, load a data template if you defined first then define your local coordinate system. If you complete then tap on finish button at the upper right corner to finish creating a new project.

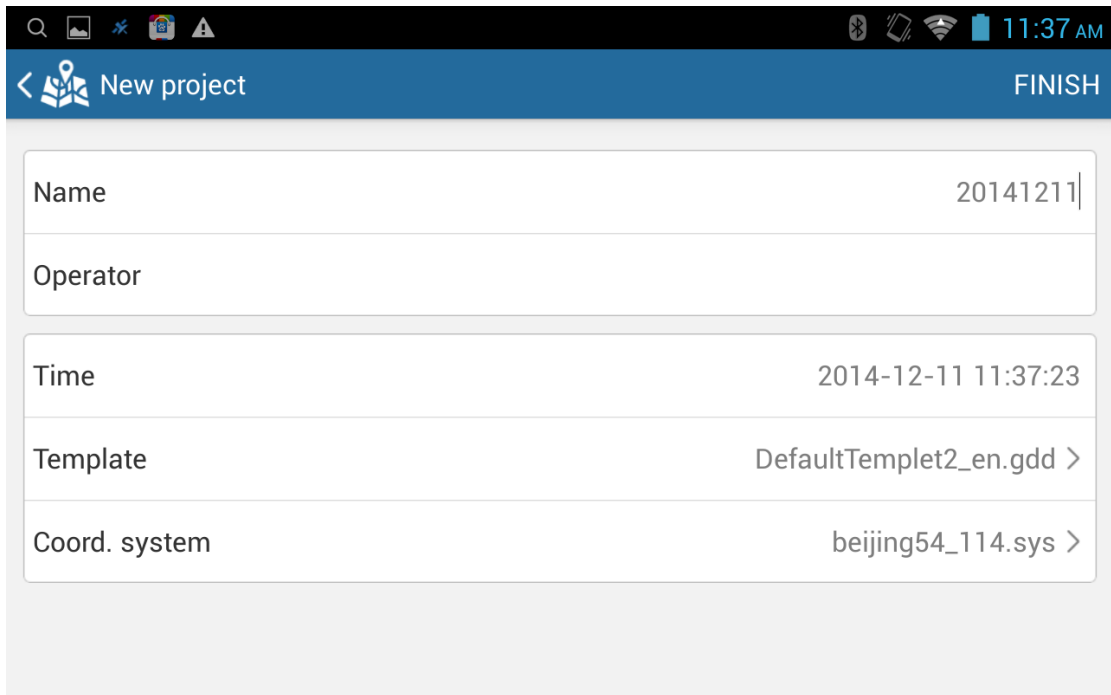


Figure 4.07

11) Click on common used menu and tap on new option, choose a entity type (point/polyline/polygon) to start your collection.

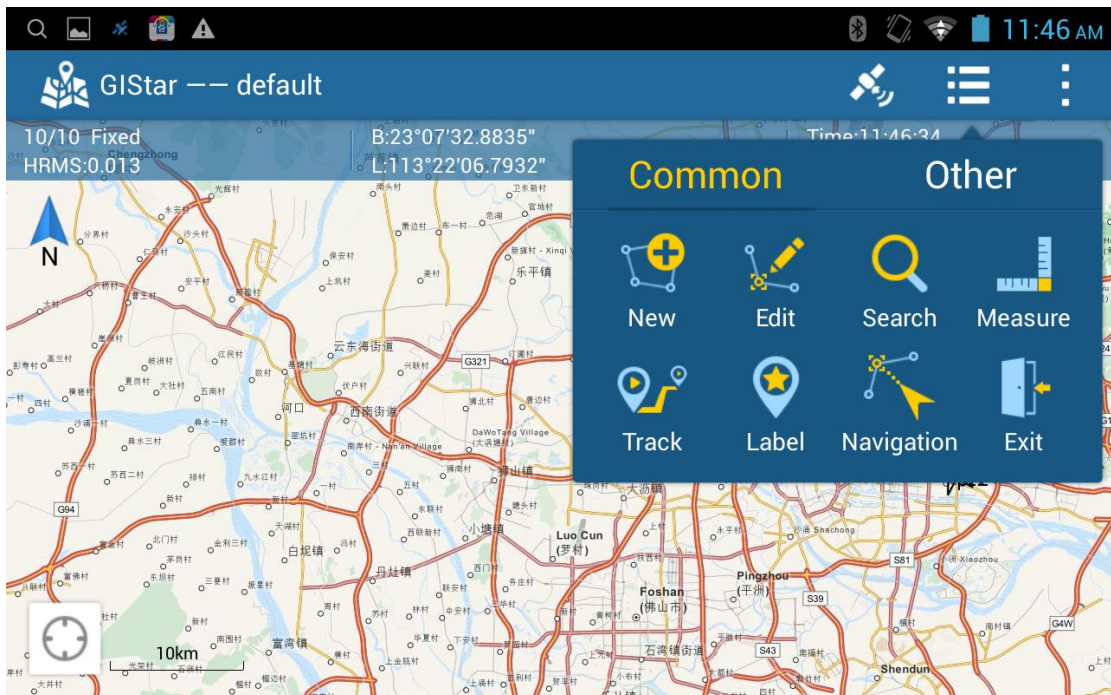


Figure 4.08

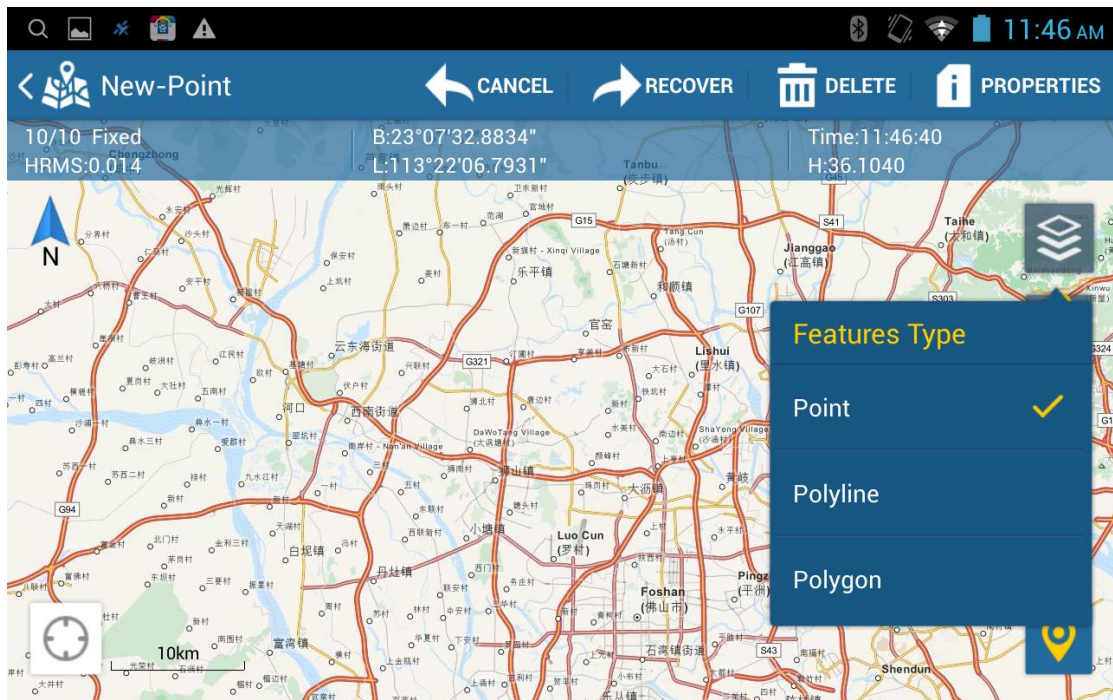


Figure 4.09