SOUTH handheld GPS

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Chapter 1 Introduction

Welcome to read SOUTH handheld GPS Operation Manual. This manual describes how to install, set up, and use a handheld GPS.

Even if you have used other handheld GPS products before, SOUTH recommends that you spend some time reading this manual to learn about the special features of this product.

If you are not familiar with GPS, visit our website for an intuitive look at SOUTH and GPS at

http://en.southinstrument.com/

Chapter 2 Getting to know your handheld GPS

This chapter introduces the different SOUTH handheld GPS receiver. This receiver is designed for both GPS surveying and GIS data collecting applications. Featured by the professional GPS module, outstanding EVEREST multipath technology and preeminent performance of PDA, etc., this handheld GPS receiver will surely offer you a pleasant work experience.

2.1 Parts of the receiver

This section provides general information for the different SOUTH high-precision handheld GIS data collectors.

2.2 General operation

2.2.1 Power on/off and restart

①Power on

Press the PWR key and don't release it until the blue LED lights up. Then a WINDOWS symbol appears on the screen, indicating that the device powers on successfully.

Note: If the screen shuts down while the handheld device is running, you can awake it by a short press on PWR key.

②Power off and restart

Keep pressing the PWR key for 3 seconds, and then a prompt box, in which you can choose power off or restart option, will pop up on the screen.

2.2.2 Install and uninstall SIM card

①Install SIM card

You should plug the SIM card in the slot softly, and make sure it won't be ejected out.

② Uninstall SIM card

Press the SIM card lightly, and then the card will be ejected out mechanically.

2.2.3 Install and uninstall TF storage card

The TF storage card slot is at the right of the SIM card slot, repeat the same procedures as that for SIM card to install and uninstall TF storage card.

2.2.4 Lithium-ion battery usage

The lithium-ion battery for handheld GPS has a capacity of 4200mh, which is able to support a continuous operation of more than 10 hours. With an overcharge protection function, the charging duration of the battery is 4 to 6 hours. When the internal battery type handheld GPS is charging, the red light is on, if the charging has been finished, it will turn off. For the battery removable type handheld GPS, when it is charging, the green indicator will blink, after it is finished , then indicator will turn to green.

Notice: the output voltage of S720-2013, S750-2013, S760-2013 charger are 5V-DC, those of S740W, S750, S760 are 12V, please don’t mix them up or it might burn out the battery even the handheld GPS.

The following recommendations provide an optimal performance and extend the life of your batteries:

- Fully charge all new batteries prior to use.
- If you need to store the handheld device, fully charge it before storing, and recharge them at least every three months.

Chapter 3 Data communication between handheld GPS and pc

3.1 Install Microsoft ActiveSync

We need to install Microsoft ActiveSync to help us synchronize data and information in handheld GPS with a specific computer device. You can find the setup file for ActiveSync in the attached disk, or get the newest version on the links as below.

http://www.microsoft.com/windowsmobile/activesync/activesync45.mspx

Click the *setup.exe* file to run, and then install Microsoft ActiveSync according to window tips. After the installation finished, please restart your PC.

3.2 Connect handheld GPS to PC

First we need a USB cable to build a physical connection between handheld GPS and PC. Then with the Microsoft ActiveSync installed, your PC will identify your handheld device and install a driver for it automatically.

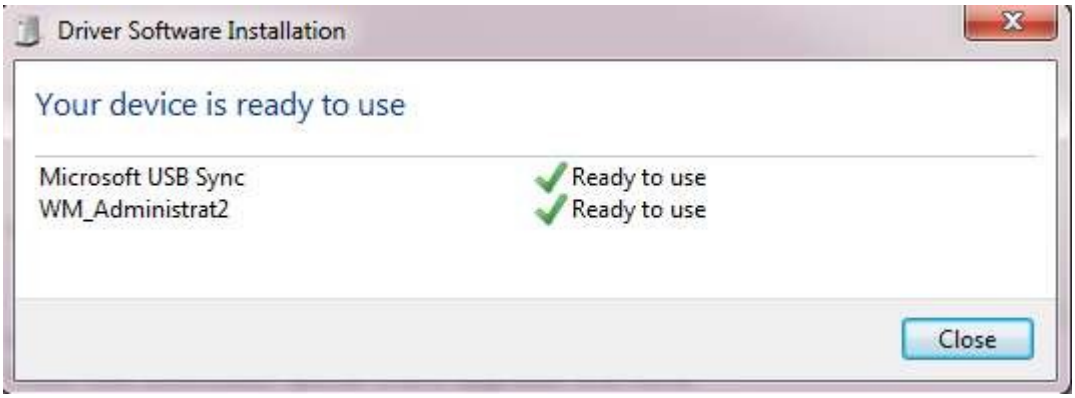


Figure 3-1

When ActiveSync makes handheld GPS and PC synchronous, you can open Computer (or Windows Mobile Device Center) to find Portable Device, handheld GPS disk or Storage Card.

Figure 3-2

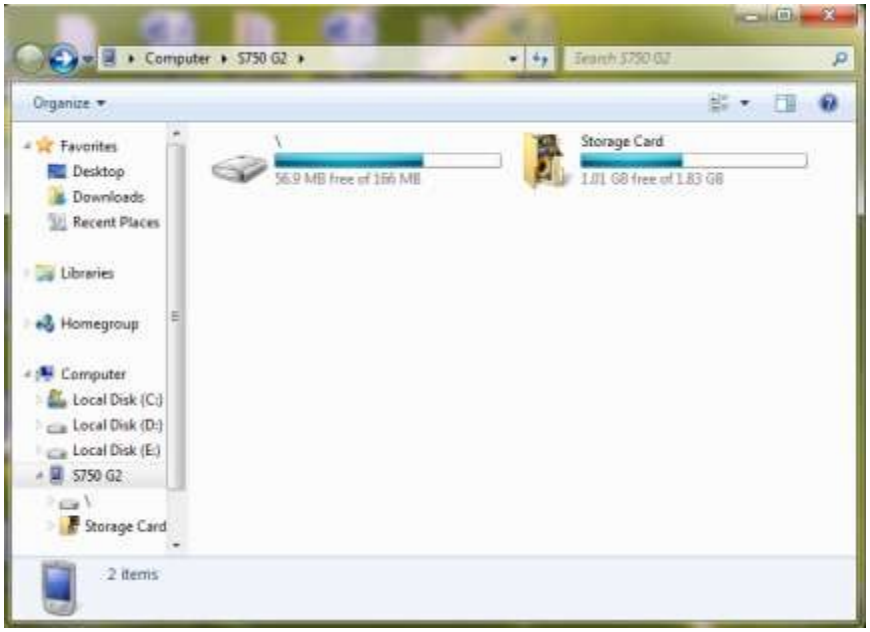


Figure 3-3

In this disk you can get all stuff in the handheld device, and are able to delete and copy some useful files in the handheld GPS memory.

Chapter4 Brief introduction for Windows Mobile OS

4.1 Start menu

After handheld GPS is power on, we can click icon on the left bottom of the screen to enter Start Menu, where we can activate some application programs and make some settings

for handheld device.

We can change the position for whichever program icon with other icons in the start menu.

Method: After entering start menu, long press one icon to make it is highlighted. Then move it where you want it to be.

Figure 4-1

4.2 Touchscreen calibration

If clicking on the touchscreen doesn't lead to a quick and sensitive response, please calibrate your screen at once. Click *Start Menu/ Settings/ System/ Screen* in turns.

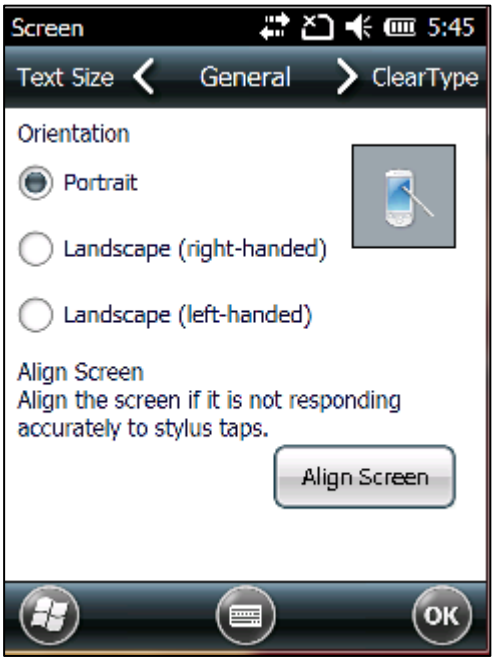


Figure 4-2

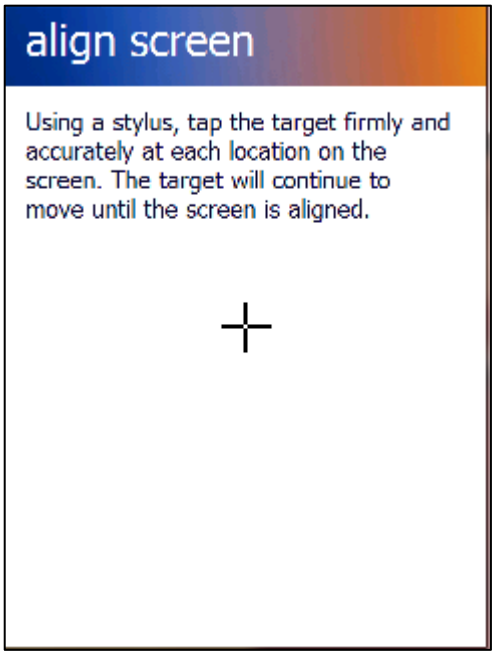


Figure 4-3

Click the cross icon and calibrate the screen as the guide indicates.

4.3 Display/Hide soft keyboard

In some circumstances, you may need to input some letters into handheld GPS. Notice the *IME* icon in the middle of bottom taskbar, click it once, a soft keyboard will pop up, click it again, the keyboard will be hidden.

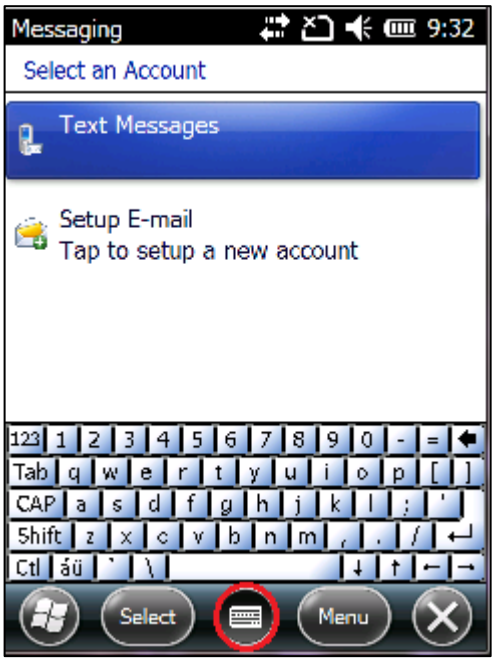


Figure 4-4

4.4 GPRS network service

You can connect handheld GPS to the Internet by GPRS (or enhanced GPRS) to transmit and receive pictures, messages, etc. Please apply for GPRS service from your local ISP, and consult ISP for local GPRS speed, flow quantity, charge standard before using GPRS service. In general, a SIM card which supports GPRS connection is expected to have been inserted into the handheld GPS, then we can build a new GPRS connection according to the steps as follow

①In start menu, click *Settings/Connections/Connections* in turn.

②Choose *Advanced /Select Networks*.

Note: If an available Internet connection has existed, just jump to

Step ⑤

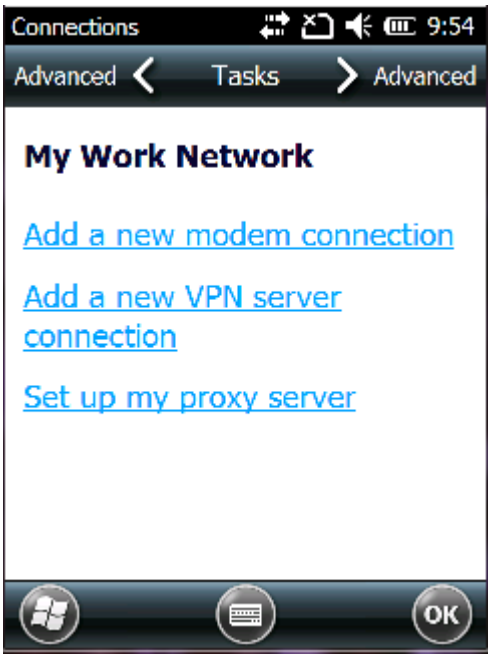


Figure 4-5

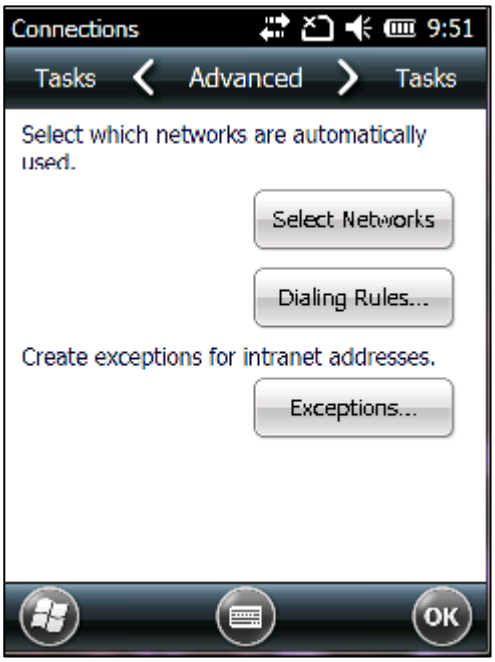


Figure 4-6

③In the first dropdown list, select *My ISP* item, then click *OK* to return the main connections interface. Switch back to *Tasks* option, then *My ISP* interface will appear there.

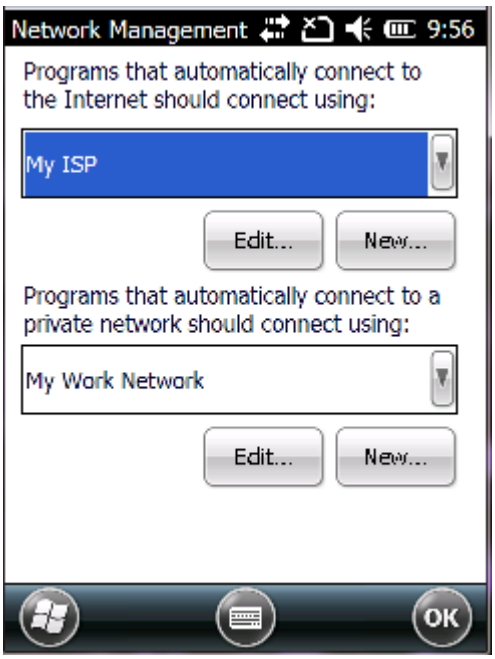


Figure 4-7

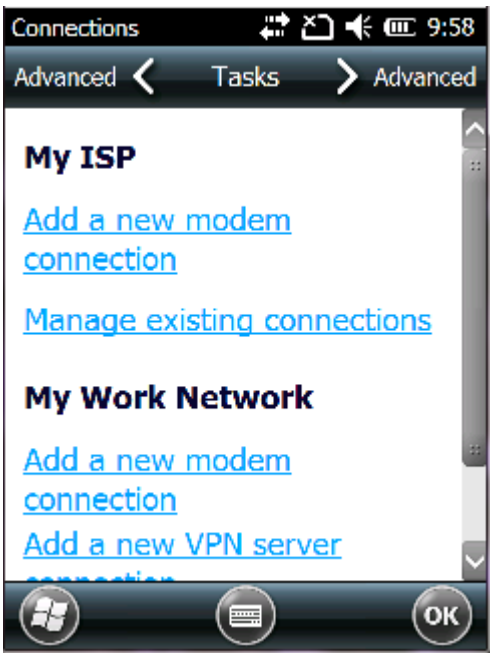


Figure 4-8

④Click on Add a new modem connection under the title *My ISP*.

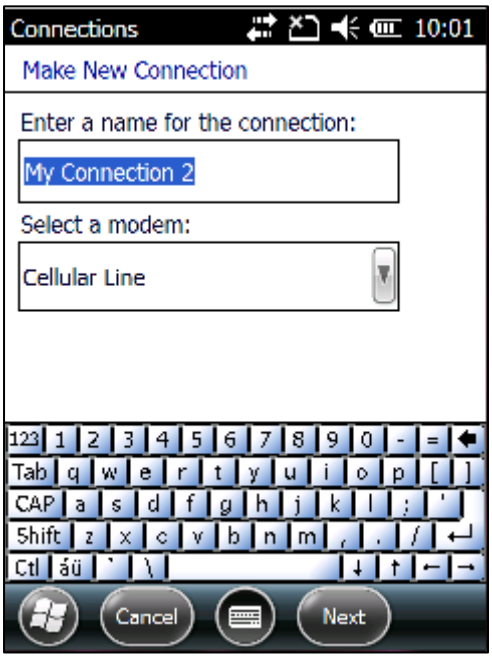


Figure 4-9

⑤Give the new connection a name and choose *Cellular Line* modem (GPRS) for it. Click *Next*.

⑥Enter the APN, User name, Password in the following windows.

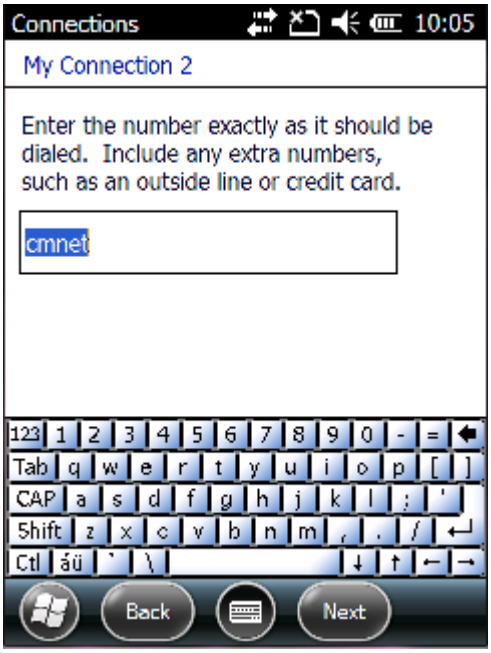


Figure 4-10

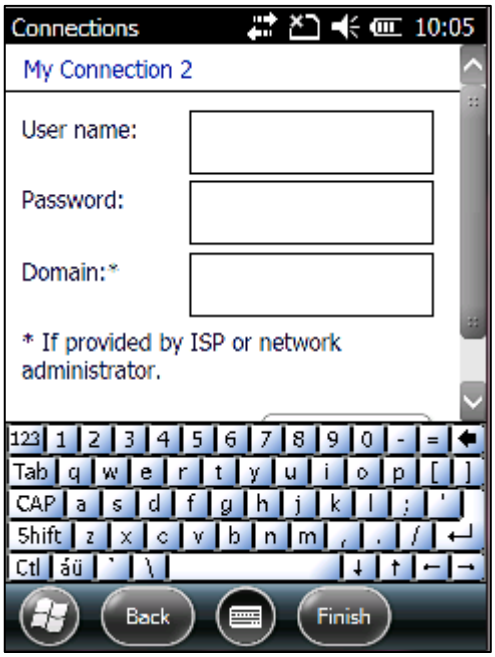


Figure 4-11

⑦Click *Finish* at last and a new modem connection is built.

4.5 Backlight settings

If you want to keep the backlight always on, please set it in the way as follows.

①In start menu, click *Settings/System/Backlight* in turn.

②In battery power interface, cancel the checked item “Turn off backlight if device is not used for”.

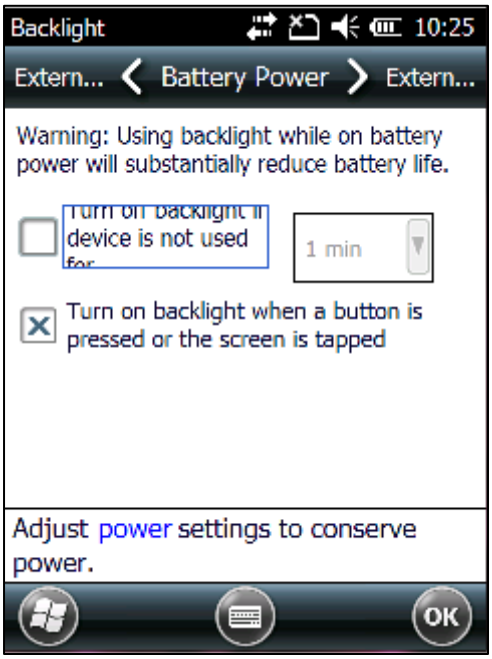


Figure 4-12

4.6 Power settings

A short press on PWR key will switch handheld GPS into suspend mode and shut down the screen temporarily. If you expect the handheld device to enter suspend mode when it is free of work for a certain time span, you can set it in this way

①Find *Settings/Power* in *start menu*.

②In *Advanced* item, you can choose 1min to 5min as the time span.

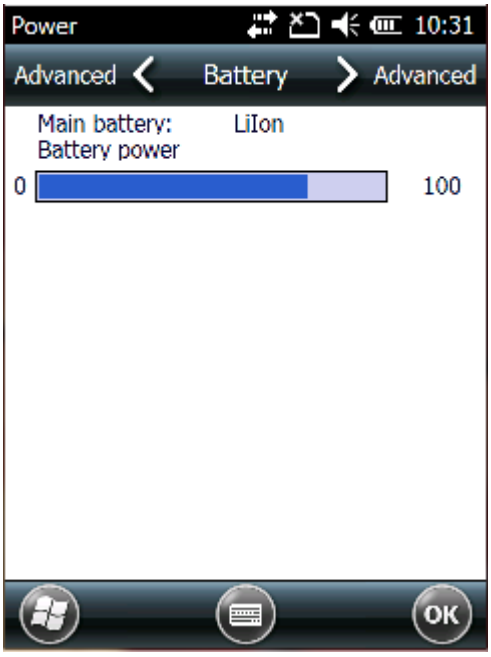


Figure 4-13

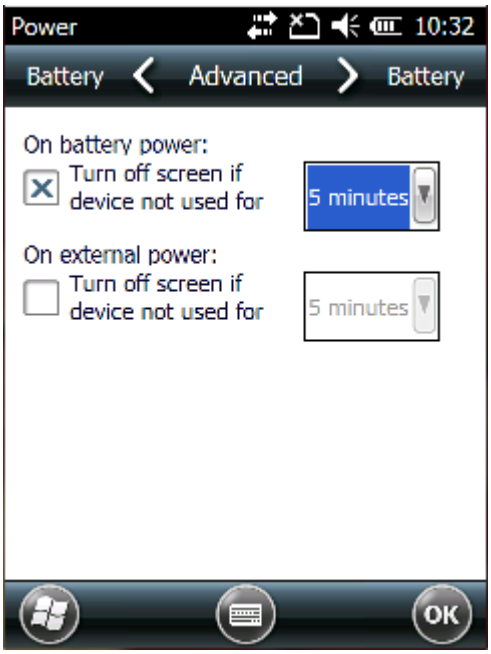


Figure 4-14

In suspend mode the handheld device is still able to receive message and data without any break. Meanwhile, you can wake the device up by a short press on PWR key.

Chapter 5 Brief introduction for GIStar on handheld GPS

This chapter will briefly introduce GIStar software running on handheld GPS. If you need more detailed functions, please refer to GIStar user manual.

5.1 Install/Unload GIStar

5.1.1 Install

First synchronize the handheld GPS to PC, then copy whole *GIStar* folder on PC to Program Files folder in handheld GPS storage card. Run the handheld device and find the copied file, *GIStar.exe* in *File Explorer*. Click it and finish the installation process according to the window tips. Next you will see a shortcut for GIStar appear in the *Start Menu*, or you can run the software from *File Explorer*.

5.1.2 Unload

Find *My Device/Program Files/GIStar* (folder) in *File Explorer*, then delete whole GIStar folder to unload the software from handheld GPS.

5.2 Settings in the GIStar software

5.2.1 Project settings

①Create a project

Click *Manage/Project/New Project.* Then a project description interface pops up, where you need to input the project name and choose a storage path for the new project.

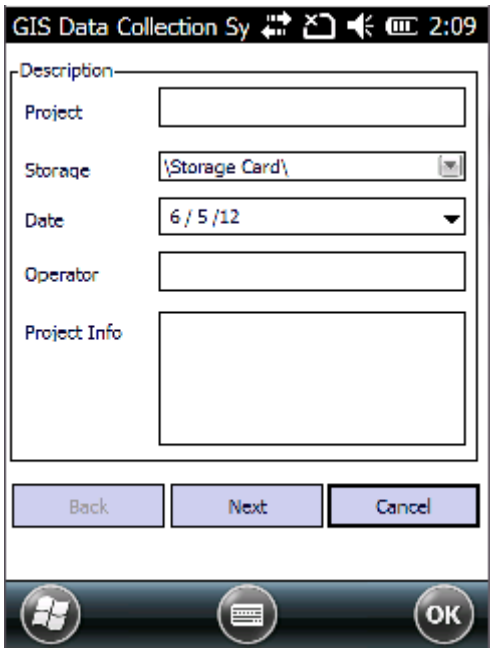


Figure 5-2

②Click *Next* and choose coordinate system. The default system is *Beijing 54*. In many cases, you may require other different coordinate systems, so you can click *Edit* to modify some default values and get a new system. The *Edit* interface includes *Ellipsoid, Projection, Seven, Four, Altitude, Vertical* and *Correction* item for parameters settings.

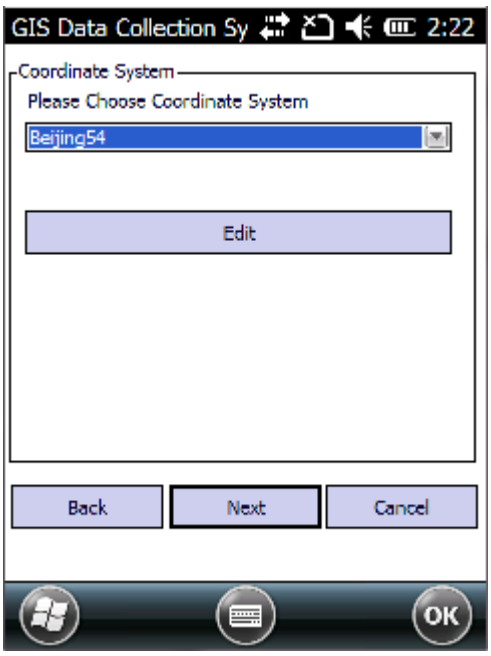


Figure 5-3

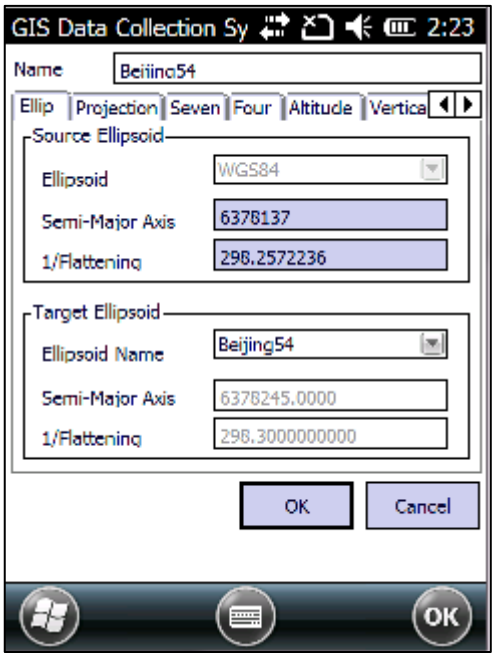


Figure 5-4

③Click *OK* to end the parameters setting. And then click *Next* to enter *Record Limitation* interface. Modify *Status Limit, PDOP Limit, HRMS Limit* and *VRMS Limit* according to your surveying demand here.

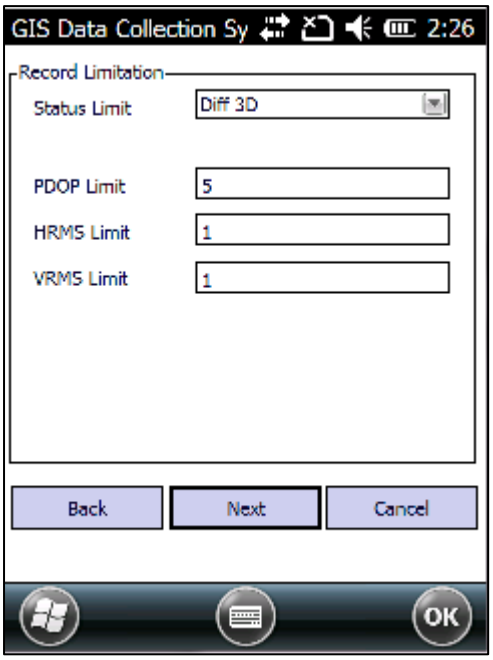


Figure 5-5

④Then we can click *Next* to turn to *File Info* interface. The basic settings about the data file, like file name and regulation, can be modified here. In addition, you can click *Browse* to import a data dictionary into current project. More details about data dictionary applied in GIStar, please refer to GIStar User Manual. When all the settings are completed, we can click *Finish* to return to the main interface.

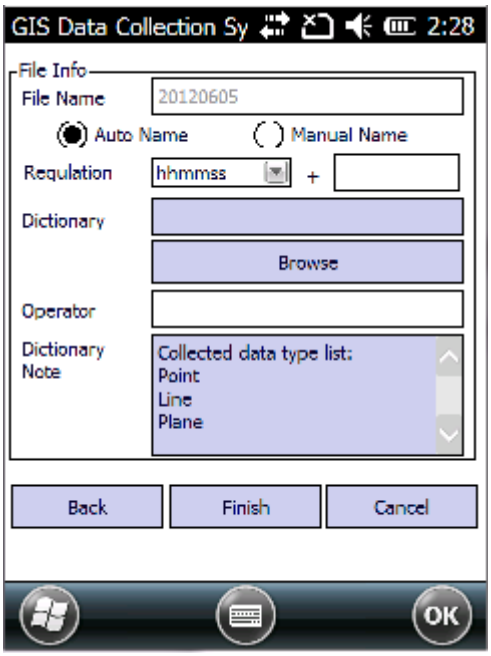


Figure 5-6

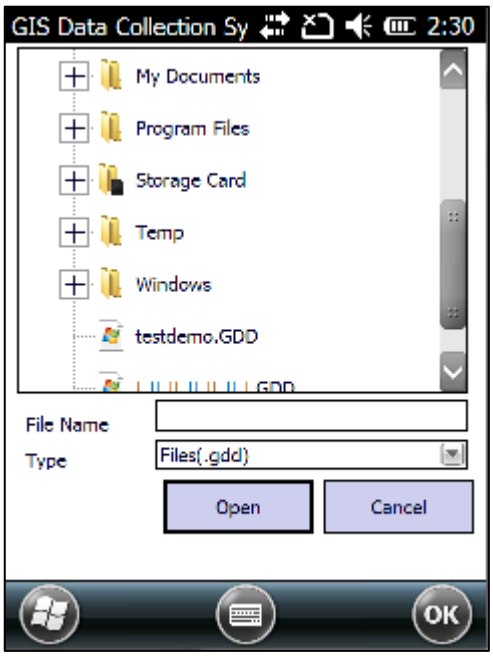


Figure 5-7

5.2.2 GPS connection

①Basic settings

Click *Manage/GPS/Basic setting*

You will get an interface in which you can appoint receiver type, location port, differential port, mask angle, time zone and differential mode.

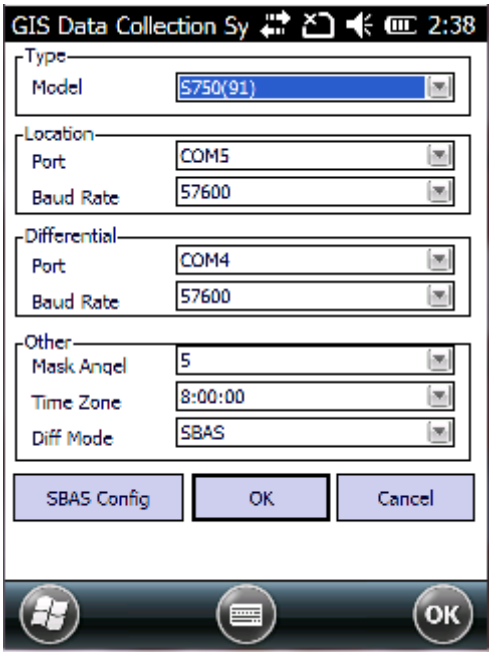


Figure 5-8

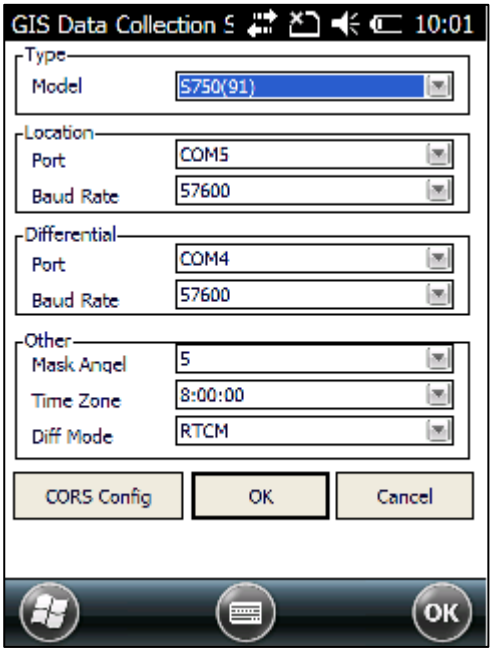
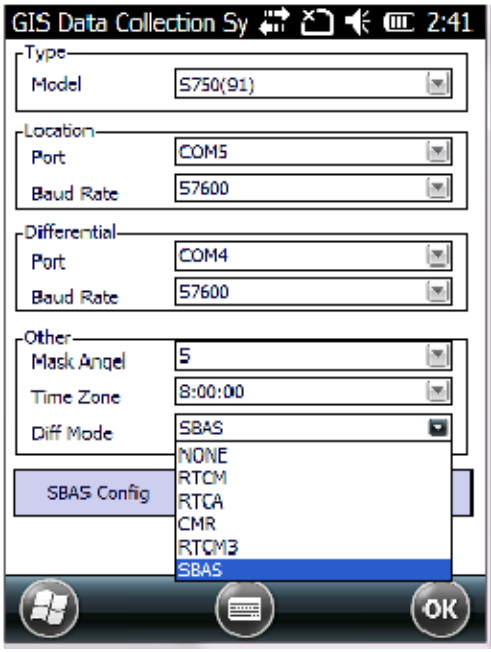


Figure 5-9

②SBAS settings

If we appoint the differential mode as SBAS, we need to do some settings for it. Click SBAS Config, select *Auto track SBAS* in the dropdown list. In some area you might not able to get the differential 3D signal, and then you will have to choose *Custom-tailor SBAS* to appoint available satellites there.



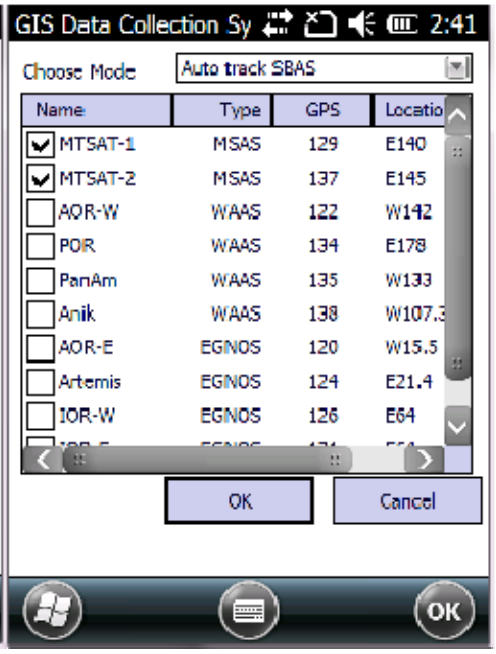
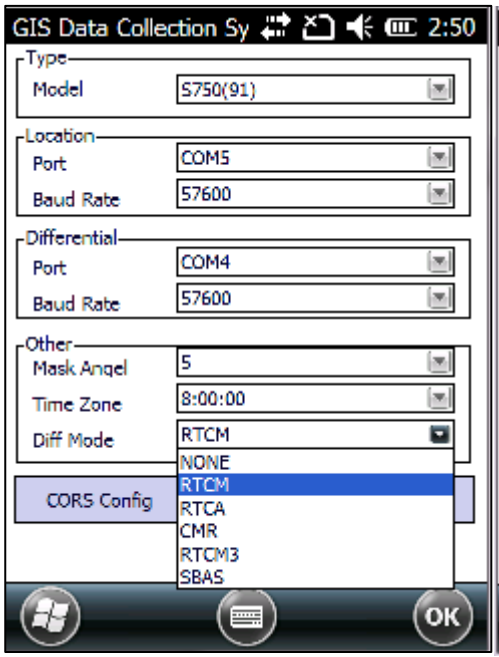


Figure 5-10 *Figure 5-11*

③Outer source settings (CORS settings)

You can connect the handheld GPS to CORS station to get differential correction as well. First you need to select a supported type in *Diff Mode* dropdown list, like *RTCM3*. Then click *CORS Config* to enter setting interface. Input right IP, Port, User, Password, after confirmed, click *OK*.



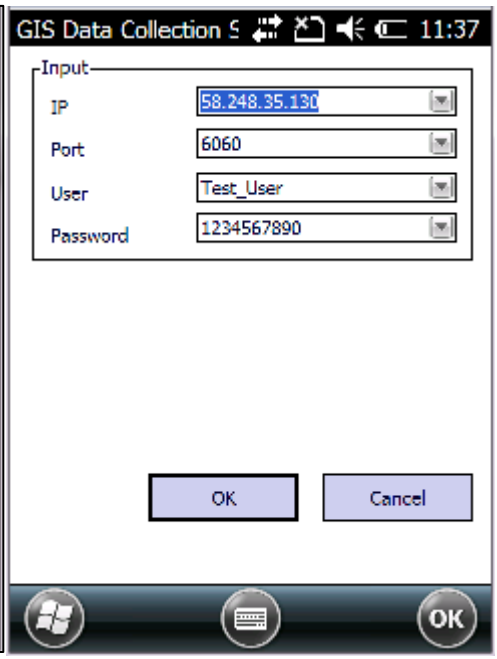
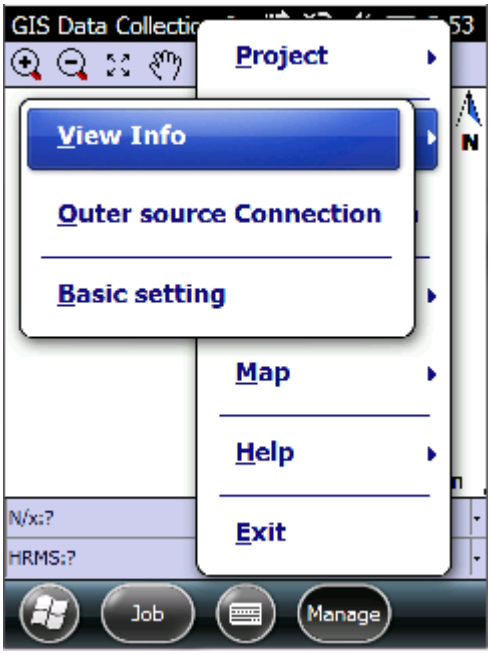


Figure 5-12 *Figure 5-13*

Next click *Manage/GPS/Outer source Connection*. Choose a right Mount Point, and then you can click *Start* to connect handheld GPS to outer source.



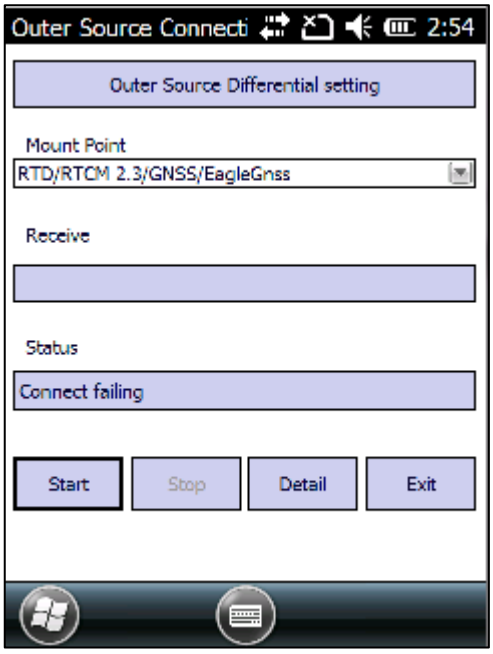


Figure 5-14 *Figure 5-15*

5.3 Collect and view data

5.3.1 Collect data

After the handheld device connected to SBAS or outer source, please click *Job/Survey/Dynamic*. The device will enter dynamic collecting mode.

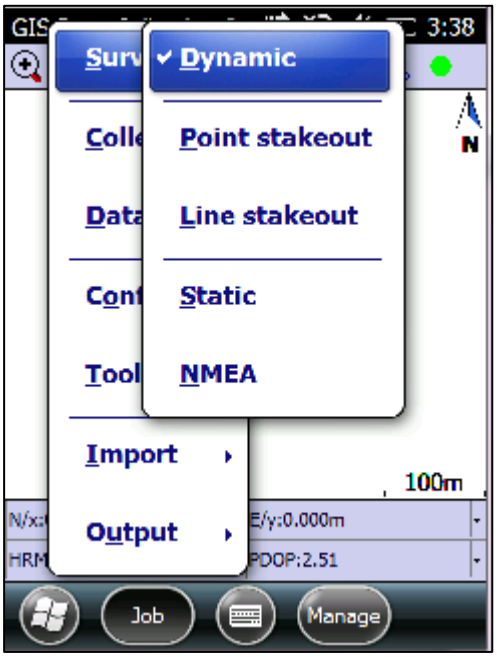


Figure 5-16

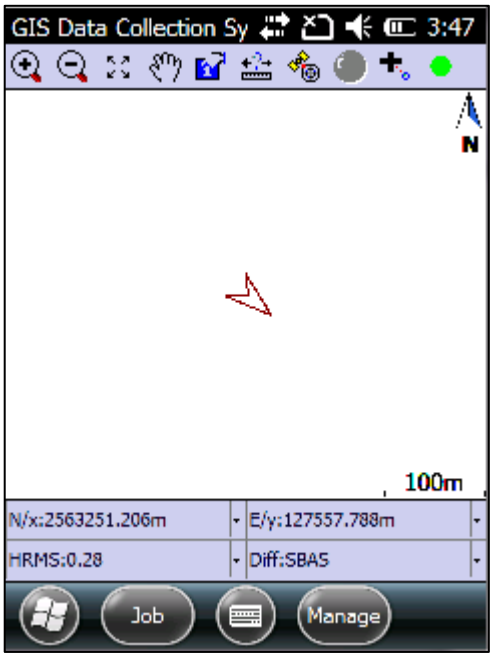


Figure 5-17

Then you can click or press *ENT* to enter data collecting interface.

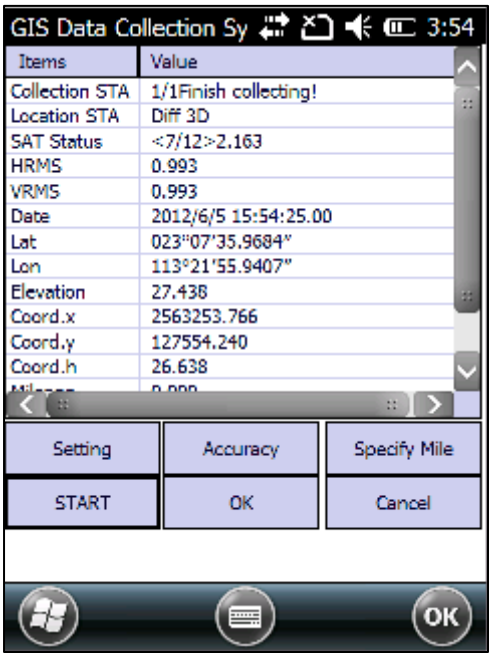


Figure 5-18

When the precision for collecting is good enough, the collection status will be fixed on the screen, which means this point (location) can be recorded at this moment. You can click *OK* and then specify data type and entity type for the point (location). The entity type includes point, line and polygon.

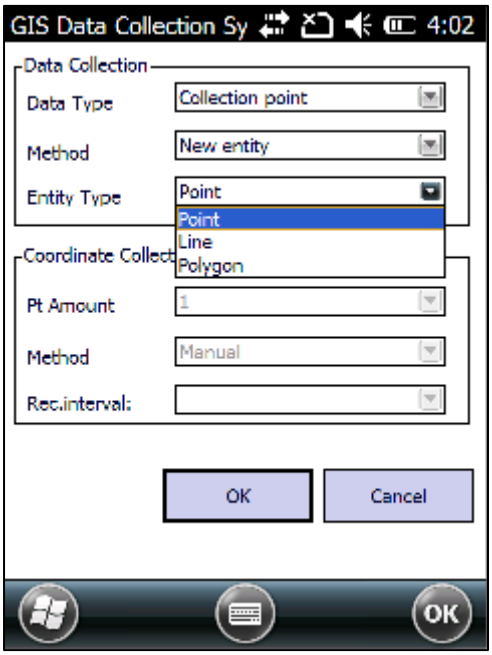


Figure 5-19

Click *OK* and in the next window please input the name and code for the point (location). Click *OK* to finish.

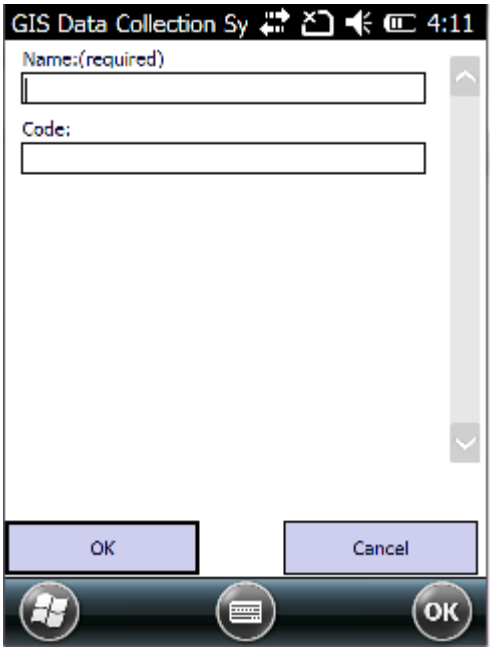


Figure 5-20

5.3.2 Record settings

Click *Job/Config/Record setting*

You can edit Collection Limitation, Collection Method, and Antenna Height here.

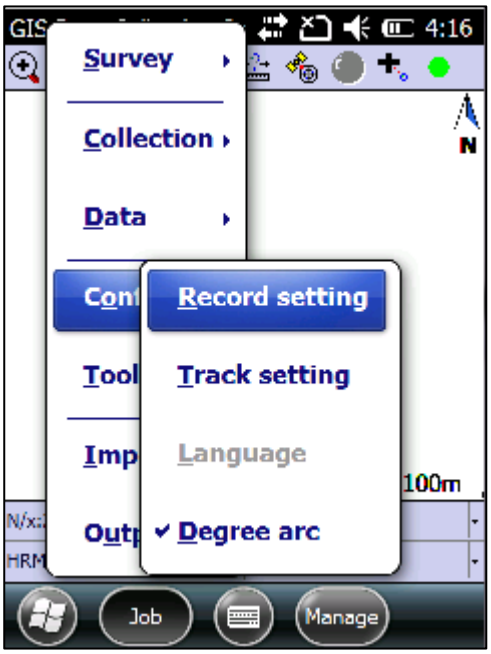


Figure 5-21

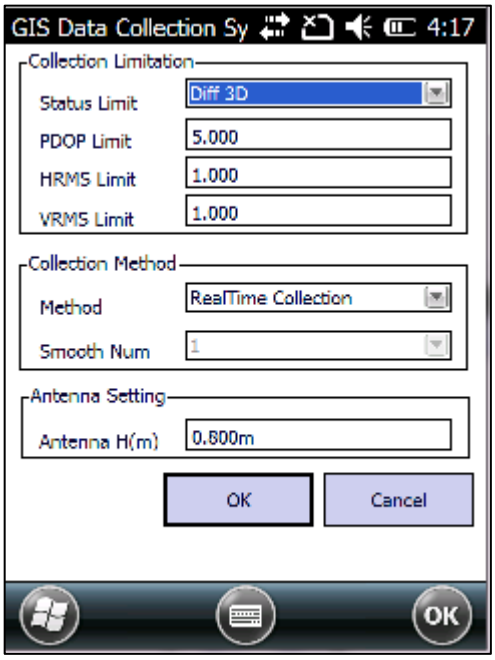


Figure 5-22

5.3.3 View data

Click *Job/Data/View Entity*

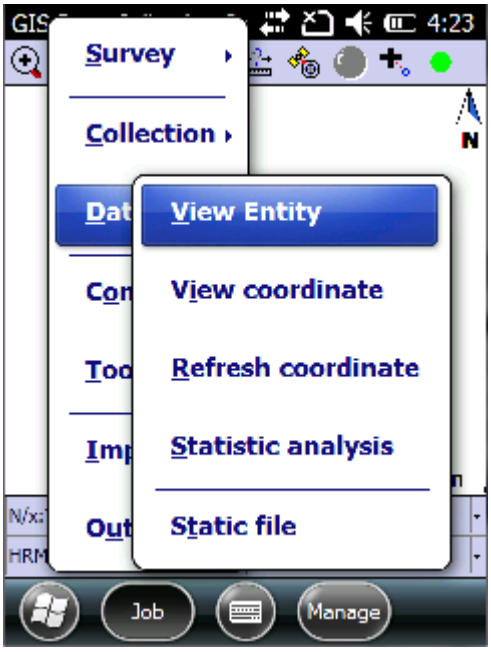


Figure 5-23

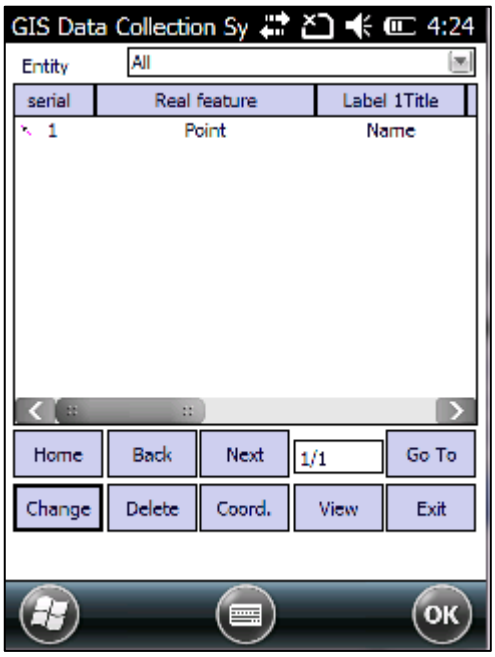


Figure 5-24

You can view all elements and coordinates through this interface. Some information about these elements, like perimeters and areas, can also be shown here.

Meanwhile, you can choose to view coordinates of the recorded points by clicking *Job/Data/View coordinate*.

5.4 File output

Click *Job/Output/Data file*

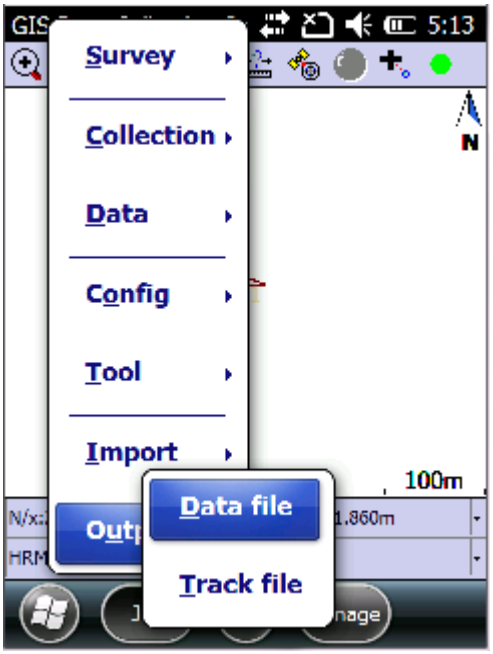


Figure 5-25

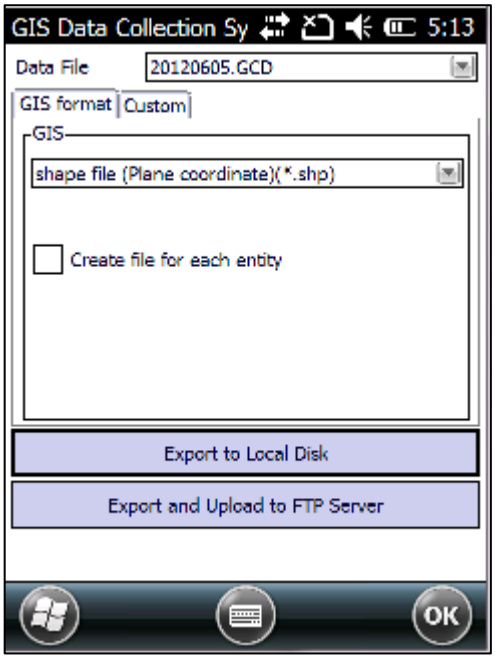


Figure 5-26

Then in *Data File* dialogue box

In *Date File* dropdown list, select the file you want to output.

In *GIS* item, appoint a file type for the output file.

Click *Export to Local Disk*, choose a path for the output file.

Click *OK* to finish.

Edit custom file type

If you want to output data file in custom file type, you can select *Custom* item in *Data File* interface.

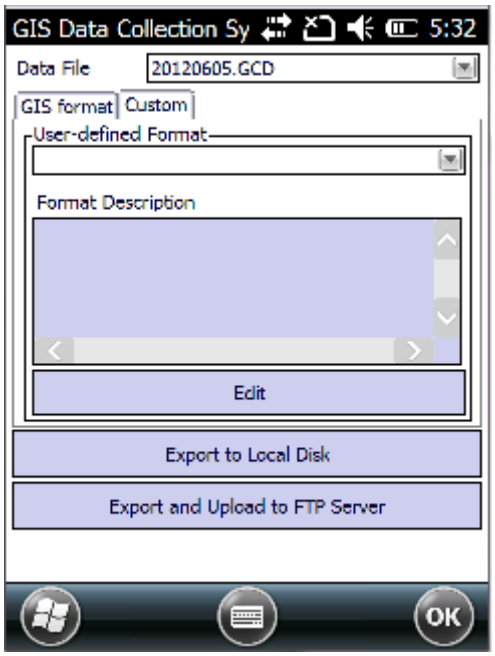


Figure 5-27

Click *Edit*, we will get *File Format List*

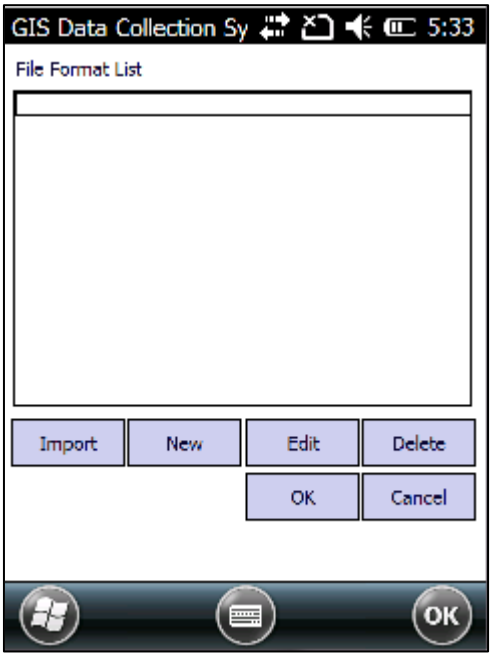


Figure 5-28

Through this dialog box, we can click *Import* to import .cfg file,

or click *New* to create a new data format.

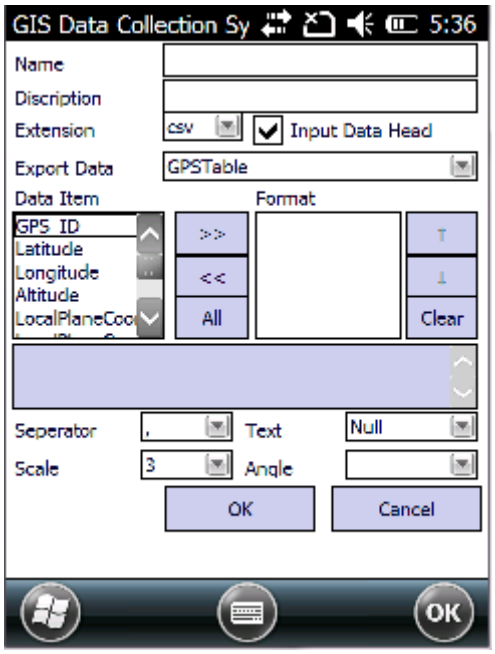


Figure 5-29

You can choose .csv, .txt and .dat file type and make different combination of data items for a new output file to comply with. Click *OK* to finish.