

# Handheld GNSS Receiver GIS Data Collection

# Handbook revision situation

Revision date	Revision times	introduction
2012.8	1	Handheld GNSS Receiver GIS Data Collection V1.0

# Preface

Use of the introduction

Welcome to use SL300 series high precision mobile GIS product introduction, this manual applies to Q star series, this manual introduced how to set and use SL300 series high precision mobile GIS product.

Specification of the introduction

SL300 series high precision mobile GIS product is a new GPS/GIS data collector, even if you have used other types of industrial GIS data collector, please carefully read this instruction before use Experience demand

In order that you can better use SL300 series high precision mobile GIS product, Hi-Target suggests that you have a certain knowledge of measures or GIS, and carefully read this manual. If you have any questions, please refer to the official website of Hi-Target:

< <http://www.hi-target.com.cn> >.

Safety technical note



Note: pay attention to the suggestive content, it is generally special place, need to draw your special attention, please read it carefully

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Warning: the content of the warning is generally very important hints, if not operate within the warning content, it will cause the damage of instrument, the loss of data, and the collapse of the system, and even endanger personal safety.

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## Responsibility absolution

Before you use the product, you should read the introduction carefully. Hi-Target surveying instrument Co., LTD. will not take the responsibility if you do not operate within the product instruction.

HI-TARGET surveying instrument Co., LTD. is committed to continuously improve product function and performance, improve the service quality, and keep the right to change the content of the instruction without noticing in advance.

We have checked that whether the hardware and software are consistent with the content as the prints say, but we don't rule out the possibility of bias, the picture in the instruction for reference only, if you have a product with discrepancies, please refer to the product.

## Technology and service

Hi-Target have set up the "technology and service" section in website, if you have problems you can settle them through the "service guide" telephone, contacting regional technology center and headquarters division or through the "experts on the judgment seat," "technology BBS" message, we will answer your questions as soon as possible.

## **Related information**

You can find the instructions through the following methods:

- 1 Purchased products from the Hi-Target will with a CD, open the CD and you can find the instruction;
- 2 Land the official website of the Hi-Target, through "downloaded zone"—" product specifications"—" GIS product "and you can it.

## **Your suggestion**

If you have any suggestions and opinions about the introduction, please visit the official website of the Hi-Target, and leave message in "technical service"—"advice and complaint" edition , your feedback will help to improve the quality of the introduction greatly .

# Chapter 1

## *Products overview*

This chapter introduces:

- Product introduction
- Product features
- Matters needing attention in use

CHAPTER

1

## Product introduction

SL300 series high precision mobile GIS products are equipped with complete navigation and position function and GIS data acquisition function, with the operating mode of physical buttons and touch screen, inputting in both Chinese and English are supported. It is designed as industrial standard, and can be dropped from 1.5 meters high to the cement floor without anything, equipped with IP67 level dustproof and waterproof, it can adapt to complex work environment in the field. At the same time, the configuration of the large capacity of lithium battery can meet the requirements of all day work.

SL300 series high precision mobile GIS products are integrated designed, and it is equipped with functions such as GPS, embedded Windows Mobile 6.5 system, digital camera, microphone, bluetooth communication, large storage, USB port, SD card expansion, etc.

## Product features

- ◇ Industrial integration design, with a variety of functions
- ◇ Can be used as the industrial three proof standard GPS navigation
- ◇ The built-in digital camera, which can realize image information site acquisition, automatically realize GPS coordinates and image information matching labeling
- ◇ The built-in microphone, it can realize voice information site collected
- ◇ with the function of speech play
- ◇ The built-in bluetooth, to realize the wireless data transmission

## Use and the matters needing attention

Although SL300 series high precision mobile GIS products use the corrosion resistance and impact resistance materials, but the instrument still need our careful use and maintenance, and keep it in dry environment as far as possible. In order to improve the stability of the SL300 series high precision mobile GIS products and use cycle, please avoid SL300 series high precision mobile GIS products exposed to extreme environments, such as: damp, high temperature, low temperature, corrosive gas or liquid, etc.



Warning: Qstar series high precision mobile GIS products must be preserved and used within stipulated temperature range. Detail requirements, please refer to chapter 4: technical parameters.

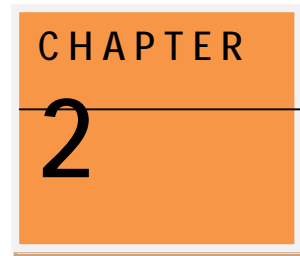
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To ensure continuous observation of the satellite and satellite signal quality, the stations should be set over the open place as far as possible, barriers are not permitted in more than 15 degree; To reduce the interference of electromagnetic wave to GNSS satellite signal, within 200 m strong electromagnetic interference is not permitted, such as TV tower, microwave station, high voltage transmission line; To avoid or reduce the happening of the multipath effect, stations should be far away from the terrain which reflect electromagnetic wave signal strongly, such as high building, sliced waters, etc.

**FCC ID: AJYSL300**

**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.**

## Chapter 2



### *The introduction of SL300 series high precision mobile GIS products*

The introduction of this chapter:

- the front of SL300 series high precision mobile GIS products
- the back of SL300 series high precision mobile GIS products
- Interface
- touching pen
- battery
- data cable
- belt

This chapter introduces SL300 series high precision mobile GIS products appearance, interface, battery, touch pen and data cable, etc.

The front of SL300 series high precision mobile GIS products

The front of SL300 series high precision mobile GIS products

, including the touch screen, keyboard, a microphone, protection set ,etc.





- ◇ Touch screen: 3.7 inch vertical screen can do click operation directly, support inputting in both Chinese and English.
- ◇ Protective set: in case that it grind, fell and shock, effective to avoid instrument scratching.
- ◇ Keyboard: direction control, the confirmation button, exit button, switch machine etc.
- ◇ The microphone: built-in microphone can be used for the acquisition of voice messages.

## **The back of SL300 series high precision mobile GIS products**

The back of SL300 series high precision mobile GIS products, including the camera, battery, the belt hole, horn, etc.

- ◇ Camera: built-in digital camera for video information site collection
- ◇ Battery: the built-in 3.7 V, 8800 mAh lithium batteries
- ◇ Belt : connect the strap to prevent slide.
- ◇ Horn: instrument real-time operating state and speech broadcast



Note: when the horn is in water, it may appear silent or husky, dry it and it will be back to normal. The loudspeaker and the instrument is completely waterproof, horn with water will not affect instrument performance, but please

## Interface

SL300 series high precision mobile GIS products interface position is identified, its main function is charging and data transmission, installing SIM card and SD card, etc.



Picture2-3

- ◇ Charging interface: connect the charger for lithium battery charge.
- ◇ USB interface: the connection computer, used for data transmission.
- ◇ SIM card socket: to install SIM card
- ◇ MicroSD card slot: it can be installed MicroSD card, can support 32 GB at most.



Note: when the charging interface and USB interface are not in use, please cover the stopper, in order to achieve the purpose of waterproof, dustproof.

## Touching pen

SL300 series high precision mobile GIS product touching pen is equipped with standard configuration, located in SL300 series high precision mobile GIS product belt.



Picture2-4

## Battery

This illustration shows the standard 8800 mAh lithium battery appearance figure.



Picture2-5



Notice: In order to protect the environment, when the lithium battery failure, do not throw them away, please return to Hi-Target or professional battery recycling units processing.

## Data cable



Picture2-6

- ◇ SL300 series high precision mobile GIS products interface: used in connection of USB with SL300 series high precision mobile GIS products.
- ◇ USB interface: to connect computer USB port, used for data download.



Warning: when the cable is not in use, it should be packed in where the place is not easy to squeeze to prevent damage to the plug.

## Belt

Because SL300 series high precision mobile GIS products are big, in order to prevent sliding in the process of working, it is equipped with an antiskid belt, please entangle belt when you work.



Picture2-7

## Chapter 3

### *Basic operation*

The introduction of this section:

- keyboard
- Touching pen
- MicroSD card
- Power supply system
- Switch machine operation
- data obtain
- Application functions

Most of the Hi-TargetSL300 series high precision mobile GIS products setting and operation can be completed by touching pen , the common operation can be completed by the keyboard . Now we will introduce the appearance and function of the keyboard simply.

### Keyboard

SL300 series high precision mobile GIS products keyboard. The keyboard keys contains: the confirmation button , exit key, F1 function keys, switch machine key and the direction key.



Figure 3-1

**“ESC”exit button:** short press it on boot-up state, means to cancel or exit the current window operation.

**“ENT”Confirm button:** ok button.

**Switch machinebutton/backlight control button:** long press it for more than 3 seconds to turn on/off it. On boot-up state, hold the button for 1 second, switch on or off the backlight.

**Navigation button:** move the cursor, to choose the options content.



Notice: when Qstar series high precision mobile GIS products are not in work temporarily, please close a backlight to save electricity, to extend industrial GIS data collector work time.

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## MicroSD card

Can be used for storage of the collected data and program files. Program installation package can be installed to program MicroSD card, just as installed in system disk space.



Note: the MicroSD cards (also named TF card) are small volume external flash memory storage expansion CARDS, usually used in mobile phone, PDA, users should distinguish it between the common SD card. The volume of ordinary SD card are larger than the MicroSD card, not suitable for Qstar series high precision mobile GIS product. Qstar series high precision mobile GIS product can support 32 GB MicroSD card at most for present.

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## Power supply system

◇ The battery installation and removal

Install the battery, contact the battery with a metal connector on one end with SL300 series high precision mobile GIS product battery jar copper point, and screw up the screw.

Take out the battery, take out the screw firstly, the battery will pop up little, then you can take it out.

## ◇SL300 series high precision mobile GIS productbattery, charger model number

Table 3-1SL300 series high precision mobile GIS productbattery, charger model

name	model
8800 mAh lithium batteries	BL-8800A
Lithium battery charger	CL-00A

## ◇charge

When charging, the charger should be specialized charger with standard configuration or seat charger in certain temperature range, and charging time should achieve a certain requirements. The concrete use method and requirements:charging with standard configuration is demanded when charging the SL300 series high precision mobile GIS product,charge in 10 °C ~ 40 °C temperature range. Using for the first time in general, there should be some battery power, you should use up the inside electricity before charging again, the first three charging must achieve 12 hours, after that charging 6 hours. If the battery is not often in use, it must be charged once a month.



Warning: 1The battery and charger manufacturer configuration are only permitted, do not put it into the fire or metal electrodes with short circuit.

2 If you find the battery has fever, deformation, discharge, smell or other abnormal phenomenon when the battery is in use 、 in charge or in storage, please replace new battery.

3 If the use time of the battery significantly shortened, please stop using the battery, the battery is aging, please replace new battery.

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## Switch machine operation

### ◇Boot

In the shutdown state, long press  three seconds, it will boot.



Figure 3-9

◇shutdown


On state, long press  3 seconds, it will tip you to confirm shutdown, click on the "shut down".



Figure3-10

### Network connection

Click "start" - > "DialConnect", if you have set up dial-up parameters, click "dial-up connection", you can direct dialing. If you did not click "new connection", then click "dial-up connection".

For successful dial-up network, you can click "disconnect" to close the connection.

Tip: after the successful dial-up, don't click on the top right corner "OK" button, click on the top left corner "start" to do other operation



## Data obtain

### 1 Install Microsoft ActiveSync

In the incidental disk (tool software \ connection program \ ActiveSync), double click MSASYNC45.exe file, please follow the instructions to complete installation. After the installation, find Microsoft ActiveSync and operate it in the "start menu" "program". Set up "allows the USB connection" In the menu "connection Settings", as shown in figure 4-21.



Figure3-11

### 2 The hardware connection

First, switch on SL300 series high precision mobile GIS product, enter the Windows system, it is no need to open applications. Connect the USB port which with a smaller cable line with the SL300 series high precision mobile GIS product, connect the other end USB plug with your PC.

### 3 Software connection

When the cable is connected, the Microsoft ActiveSync in the computer will tip you "whether need to establish cooperation relationship," choose "cancel". Then Microsoft ActiveSync popup a hint, click "ok". Then it has been connected successfully. If it is the first connections, the computer will tip you to install the driver, just installed Windows compute driver according to guide.

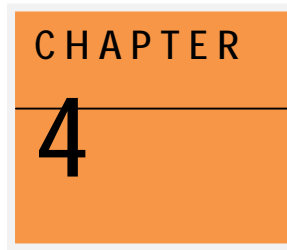
### 4 download data

Click on the "browse button" of the Microsoft ActiveSync, open the resources browser of SL300 series high precision mobile GIS product, you can enter the related file and copy data to the computer.

## Application functions

SL300 series high precision mobile GIS product is equipped with PPP technology (the technology used in Qmini MP model), built-in GPS navigation and positioning, digital camera, microphone, 3 G communications (this function is optional), and other functions, but it must be installed with the corresponding software. SL300 series high precision mobile GIS product is equipped with Hi-Q software, as to how to use Hi-Q software to operate of the application functions above, please refer to my company's "Hi-Q software operation instruction" content.

## Chapter 4



### *Technology parameters*

The introduction of this section

### Technology parameters

Technology parameters

This chapter will introduce you related parameters of SL300 series high precision mobile GIS product, the product function will vary according to the different models. When you refer to this chapter, please refer to corresponding technical parameters according to the equipment you purchase.

model					
<b>System configuration</b>					
Operating system: Windows Mobile 6.5	√	√	√	√	√
806MHz high-speed CPU	√	√	√	√	√
Memory: 256MB RAM	√	√	√	√	√
Flash memory: 8GB	√	√	√	√	√
Screen: 3.7 inches color touch screen, 640 x 480 resolution	√	√	√	√	√
<b>GPS characteristics</b>					
High sensitivity GPS positioning technology	√	√	√	√	√
GPS+GLONASS binary star positioning technology					
Support SBAS (WAAS, EGNOS, MSAS)	√	√	√	√	√
Positioning time for the first time: 30 seconds (typical)	√	√	√	√	√
<b>Positioning accuracy</b>					
Point positioning: 5 m	√	√	√	√	√
SBAS: 1-3m	√	√	√	√	√
PPP (accurate positioning) technology: 1m point					
<b>application function</b>					
5 million pixel camera with LED the fill light	√	√	√	√	√

Integrated microphone and speakers	√	√	√	√	√
The built-in bar code scanner				√	
Data communication					
Bluetooth:bluetooth	√	√	√	√	√
Interface: Mini USB interface	√	√	√	√	√
Storage: Micro SD card slot, 32 G at most		√	√	√	√
Power performance					
Standard configuration 3.7 V, 3100 mAh lithium batteries Can work continuously over 12 hours support online charge	√	√	√	√	√
Physical properties					
Key: 10 buttons, with four the direction key and shortcut key in the side	√	√	√	√	√
Size:14cm×8cm×3.5cm					
Weight:360g(contain battery)	√	√	√	√	
Work temperature: -30℃～+70℃ storage temperature: -40℃～+80℃	√	√	√	√	
Dustproof waterproof:IP67	√	√	√	√	
Shockproof: Resistance to 1.5 m free fall	√	√	√	√	