

# GL100 A-GPS Locator User Manual



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# 1 Introduction

GL100 is a powerful A-GPS Locator with mini size, light weight, anti-water and superior sensitive receiving ability, fast TTFF which works on GSM frequencies 850/900/1800/1900. GL100 is designed for many applications such as pets or human body, the specific target to be tracked, the management for specific purpose and target.

## 2 Main Functions

- A-GPS Position
- Fixed time reporting
- Emergency Alarm
- Geo-fencing Alarm
- Remote Control Alarm
- Lower power Alarm

### 2.1 A-GPS Scenario

- TTFF(Time To First Fix)  
If the device is used in A-GPS network, the TTFF will less than 12 seconds. The TTFF of the GPS (no A-GPS network) is 42 seconds (average).
- Track  
The monitor center can inquire the device to send back the location information. And the device can send its location initiatively or periodically.

### 2.2 Alarm Scenario

- Geo-fencing alarm  
The device provides Geo-fence features that can be used for territory management, prohibited locations, and more. The device will automatically send alarm message to the monitor center if the person carrying it enters and/or leaves the predefined areas.
- Remote control alarm  
The monitor center requires the device to send back its location periodically (e.g. pre-set 1 minute), if the device can not send back its location, the device will considered to be in abnormal status.
- Low power alarm  
The message of low power notification will be sent before the battery dies out.

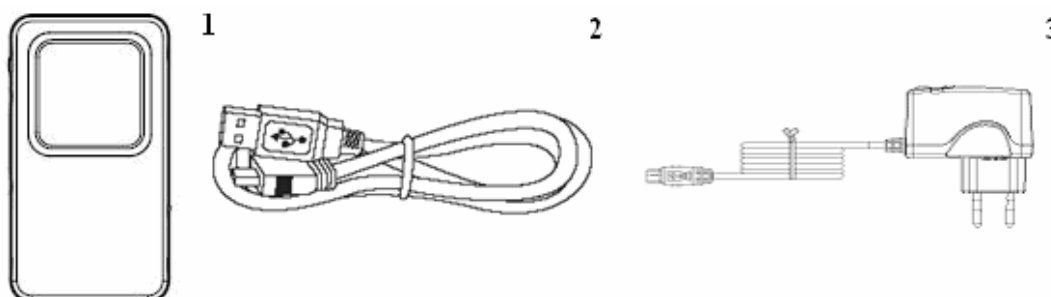
## 3 Parameters

<b>Technical Specifications</b>
Quad-Band:GSM850/900/1800/1900MHz
Compliant to GSM phase 2/2+ <ul style="list-style-type: none"> <li>- Class 4 (2W @ 900MHz)</li> <li>- Class 1 (1W @ 1800/1900MHz)</li> </ul>
Max out RF power: 33.0dBm±2dBm
Dynamic input range: -15 ~ -102dBm
Receiving delicacy: Class II RBER≤2% (-102dBm)
Stability of frequency: Superior to 2.5ppm
Max frequency error: ±0.1ppm
RMS Phase error: ≤5deg
GPS Chipset: SiRF Star III
Frequency: L1, 1575.42 MHz
Channels: 20 channel all-in-view tracking
Reacquisition: 0.1 sec., average
Hot start: 1 sec., average
Warm start: 38 sec., average
Cold start: 42 sec., average
Altitude Limit: 18,000 meters (60,000 feet) max
Velocity Limit: 515 meters/second (1000 knots) max
Dimension: 66mm*36mm*20mm
Weight: 76g
<b>Battery Backup</b>
Backup batteries: 1300mAh
Batteries standby time: 160 hours
<b>Environment</b>
Operating temperature range: -10°C to +50°C
Storage temperature range: -30°C to + 60°C
Relative humidity: 10% to 95%
Atmospheric pressure: 86kPa~106kPa
Ambient noise: ≤ 60dB (A)
<b>Interface Specifications</b>
One Mini USB connector to PC
LED indicate: Power / GSM network / GPS
2 keys: Power on/Function

## 4 GL100 Start-up

### 4.1 Accessories

1. GL100 Locator
2. Mini USB cable
3. AC power adapter



### 4.2 Charging the battery

- Please connect AC power adapter with GL100 for battery charging.
- Insert the AC power adapter into the power.
- During charging, the red LED 2 is blinking slowly. When the charge is completed, the green LED 2 is lighting.
- You can also charge the battery by USB cable which connects GL100 with the PC.
- Charging about 3 hours.

**Note:** Before your first time using the GL100, please full charge the battery.

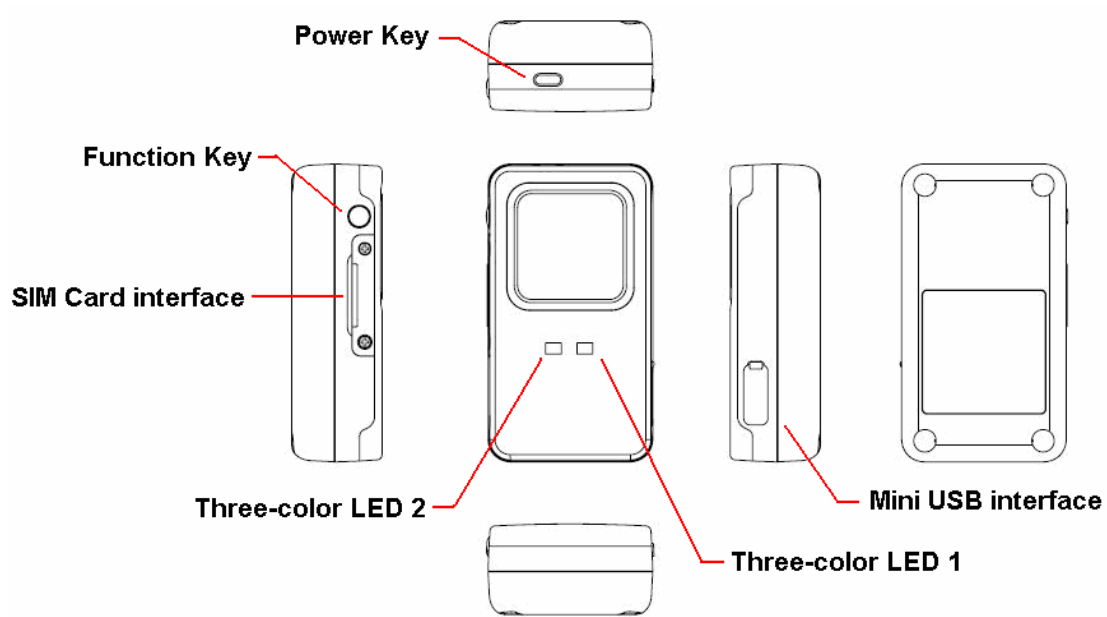
### 4.3 Install SIM Card

- Use a screwdriver to twist the two screws on the side of GL100
- Then remove the screws and SIM cover
- Insert the SIM card into the SIM cover according to the direction shown
- Finally, take the SIM cover into the SIM slot and tighten screws



# 5 Product Overview

## 5.1 Appearance



## 5.2 Button/MINI USB interface Description

Button Function description	
Power Key	Turn on / Turn off GL100
Function Key	Use this Key to switch the two operating modes: Geofence mode or SOS mode <ul style="list-style-type: none"> <li>• Geofence mode (default)</li> </ul> Press the Key twice within 2 sec. to ON/OFF the Geofence mode. <ul style="list-style-type: none"> <li>• SOS mode</li> </ul> Keep pressing the key for 3 sec. to enter the SOS mode
MINI USB interface description	
Mini USB interface	<ul style="list-style-type: none"> <li>• Plug in the AC power adapter to this interface for charging battery.</li> <li>• By using USB cable to connect GL100 to PC, you can setup its functions from software.</li> </ul>

## 5.3 Two three-color LEDs Description

There are two three-color LEDs in GL100. Each LED shows red, green and blue 3 colors for indicating different state of GL100. In order to be easier to understand the 6 lights, we call them **Red LED 1, Green LED 1, Blue LED 1** and **Red LED 2, Green LED 2, Blue LED 2**.

- **Red LED 1 —Power LED**

State	Meaning
Turn on	<ul style="list-style-type: none"> <li>• GL100 is turned on or turned off.</li> <li>• When the GL100 terminal receives the effective protocol commands.</li> </ul>

- **Green LED 1—GSM LED**

State	Meaning
Blinking quickly	<ul style="list-style-type: none"> <li>• Not register to a GSM network</li> </ul>
Blinking slowly	<ul style="list-style-type: none"> <li>• Register to a GSM network</li> </ul>
Constant lighting	<ul style="list-style-type: none"> <li>• SIM card have PIN lock</li> </ul>

- **Blue LED 1—GPS LED**

State	Meaning
Blinking quickly	<ul style="list-style-type: none"> <li>• Search GPS signal and fix location</li> </ul>

- **Red LED 2—Low power & Charging LED**

State	Meaning
Constant lighting	<ul style="list-style-type: none"> <li>• The battery power is low</li> </ul>
Blinking slowly	<ul style="list-style-type: none"> <li>• During charging</li> </ul>

- **Green LED 2—Charging completed LED**

State	Meaning
Constant lighting	<ul style="list-style-type: none"> <li>• When battery charging is completed</li> </ul>

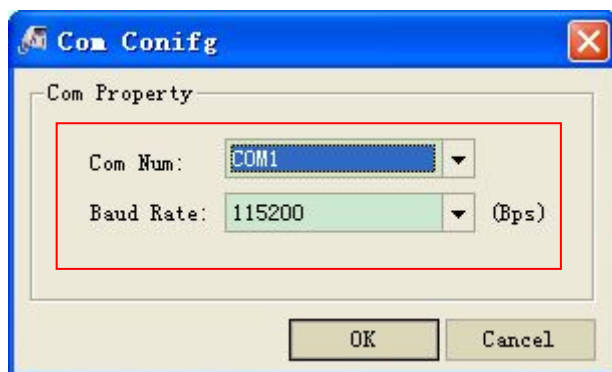
- **Blue LED 2—Function Operation LED**

Operating Mode	State	Meaning
Geofence Mode	Constant lighting less than 2 sec., and then turned off immediately.	<ul style="list-style-type: none"> <li>• Turn on or turn off the Geofence Mode success.</li> </ul>
	Constant lighting for 2 sec., and then turned off.	<ul style="list-style-type: none"> <li>• Turn on or turn off the Geofence Mode fail.</li> </ul>
SOS Mode	Constant lighting for 3 sec., and then turned off.	<ul style="list-style-type: none"> <li>• Enter the SOS Mode</li> </ul>

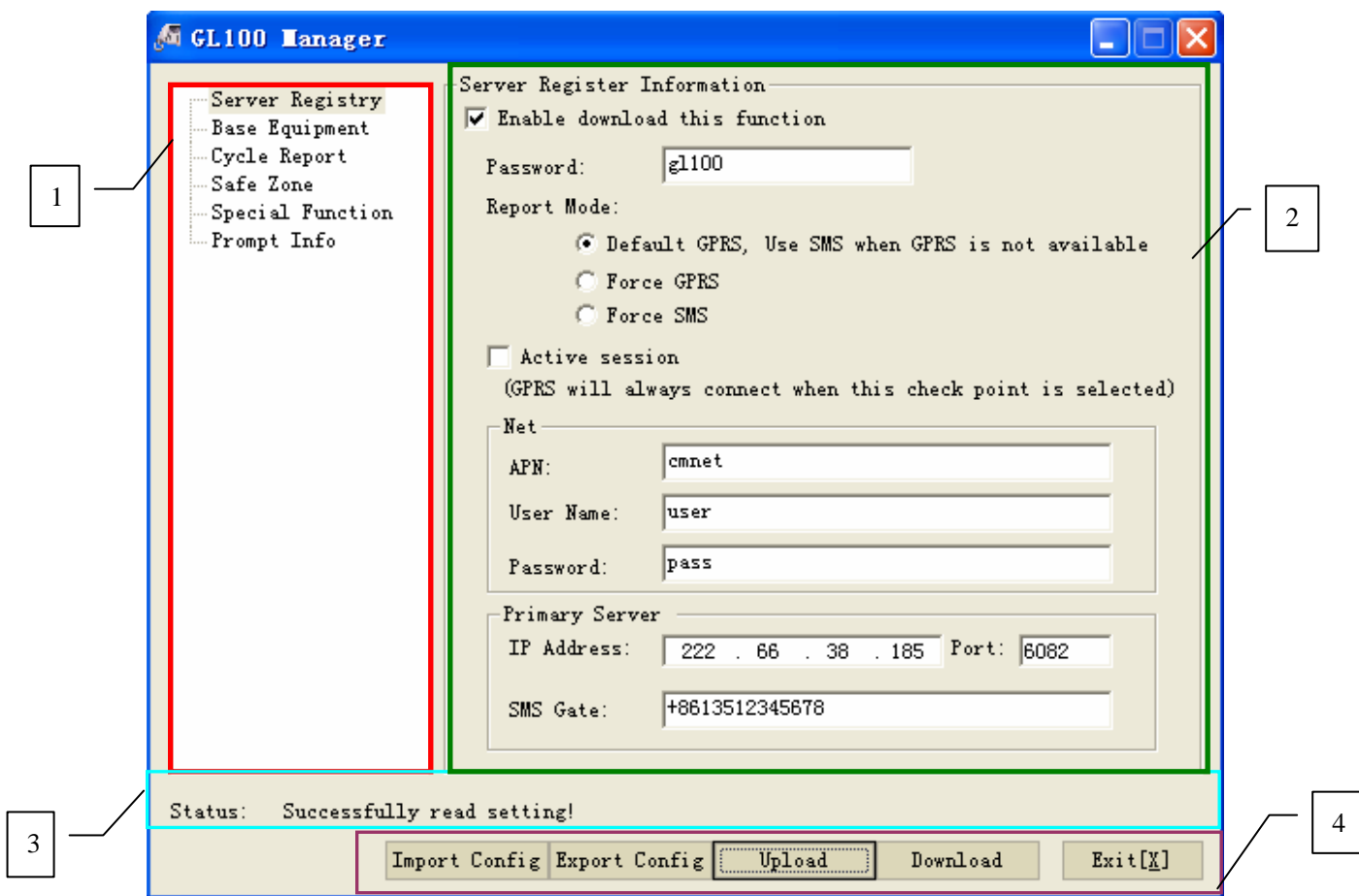
# 6 GL100 Manager Setup Wizard

1. Double click “PI2303 drive.exe” to install USB-Serial driver.
1. Use Mini USB cable to connect GL100 and PC.
2. Turn on GL100. Double click “GL100 Manager.exe”,
3. Set right Com Number and Baud rate.

**Note: The Com Number must be identical with Prolific USB-to-Serial com port.**



4. The main window





## **Illuminate:**

### **1. The zone of function list**

Display the functions list. If one of the options is selected, the option parameters will be displayed in the right frame.

### **2. The zone of function setting**

The zone of function setting is used to set and view the parameters of the function.

If you want to download the function parameters, the check box “Enable download this function” should be selected.

### **3. The state display zone**

Display the state of operation and suggestion. Include: the serial port open state; the download state; the operation result. You can also get this information by select “Prompt Info”.

### **4. The zone of operation**

There are six buttons in the zone of operation (the COM buttons will display if the serial port is error)

**[COM]** : If you set an error COM port in the startup pop-up window, the com button will display in the zone of operation. You can change the serial port after click it.

**[Import Config]**: Imports the setting from the local configuration.

**[Export Config]**: Exports the parameters from software. Backup the parameters.

**[Upload]**: Read and display the parameters of the terminal.

**[DownLoad]**: Download the parameters to the terminal.

Notice: you must select the “Enable Download This Function” selection before you click the “Download” button.

**[Exit]**: Exit the software.

**Note:** For more information, please refer to document “GL100 Manager User Guide”

# 7 Device Operation

## 7.1 Turn on/ Turn off

- Turn on: Press the **Power key** at least 3 seconds and release to turn on the GL100. At this time, Red **LED 1** will light on for 2~3 seconds. Then **Green LED 1** starts to blink quickly to search the GSM network. After the GSM network is registered, it turns to be slowly.
- Turn off: Press the **Power key** at least 3 seconds; **Red LED 1** will light on for 2~3 seconds and then turn off, it indicates that the GL100 is turned off.

## 7.2 Select Operating Mode

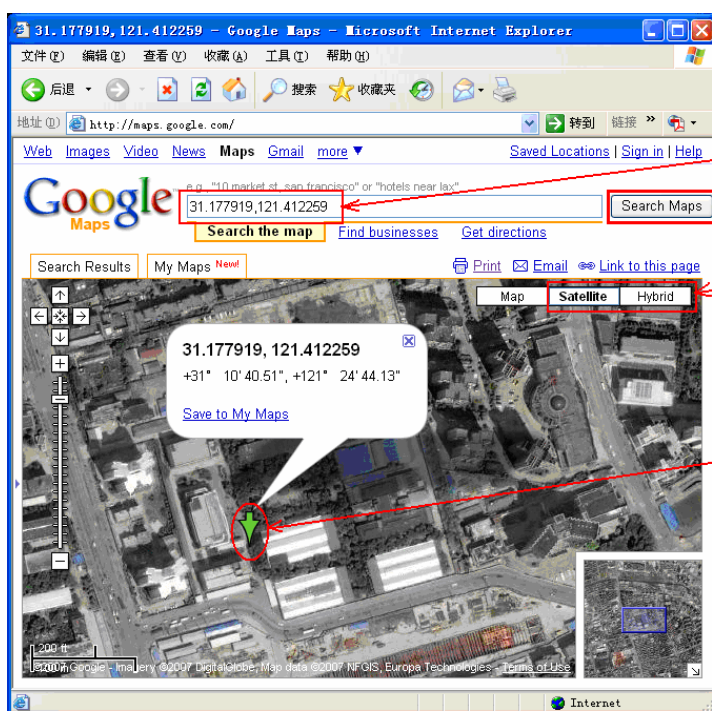
- First, user should configure the GL100 terminal though “**GL100 Manager.exe**” to realize the A-GPS position, fixed time reporting and SOS alarm functions etc.
- Press the **Function Key** twice within 2 sec. to ON/OFF the Geofence mode. When Geofence mode is ON, GL100 will open GPS module and get position information every fixed “**Fix interval**”, and then send the gathered position information to remote server every fixed “**Send interval**”.

**Note:** “**Fix interval**” and “**Send interval**” will be preset by users.

- Press the key for 3 sec. to enter the SOS mode. Here **Blue LED 1** will blink quickly for searching signal and fixing location. When the GPS signal is acquired and location is fixed, the **Blue LED 1** will light less than 2 minutes, and turned off. GL100 will send the current position information to remote server immediately. If GL100 can not acquire the GPS signal within in 2 minutes, the **Blue LED 1** will be turned off directly.

## 8 Displaying the location on map

- When receiving the location information of GL100, you can display the location on map.
- Open the IE Browser and input <http://maps.google.com> to link the Google Map website, enter the Latitude and Longitude information which received, you will see the GL100's position on the map. As follows:



Input the latitude and longitude that you received and click on "Search Maps".

Select "Satellite" or "Hybrid". It depends on Google Map whether your area is supported by this mode or not.

The Google Map will display the GL100 location on map for you.

## 9 Troubleshooting and Safety info

### ● Troubleshooting

Trouble	Reason	Solution
After GL100 is turned on, the <b>RED LED 1</b> flashes quickly always.	The SIM card is not inserted.	Please insert the SIM card into GL100.
	The signal is too weak; GL100 can't register to the network.	Please move GL100 into a stronger signal place.

### ● Safety info

- Please do not disassemble the device by yourself.
- Please do not put the device on the overheating or too humid place, avoid exposure to direct sunlight. Too high temperature will damage the device or even cause the battery explosion.
- Please do not use GL100 on the airplane or near medical equipment.