



# GSM/GPRS/GPS Tracker **GL500**

## User Manual

TRACGL500UM001

Revision: 1.00



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**Revision History**

Revision	Date	Author	Description of change
1.00	2012-6-11	Cid Xu	Initial

## 1 Introduction

GL500 is a powerful GPS tracker designed for fixed asset tracking applications. GL500 work with two CR123A lithium-batterys. GL500 wakes up every 1-40hours and sends the info and then return to deepsleep. GL500 can standby 1000days. With built-in motion sensor, GL500 can also detect the motion of asset all the time and give a warning message. Based integrated @track protocol, the GL500 can communicate with a backend server through the GPRS/GSM network to transfer reports of emergency, geo-fence boundary crossings, low battery or scheduled GPS position along with many other useful functions. System Integrators can easily setup their tracking systems based on the full-featured @Track protocol.

### 1.1. Reference

**Table 1. GL500 Protocol Reference**

SN	Document name	Remark
[1]	GL500 @SMS Interface Protocol	The SMS protocol interface between GL500 and backend server.

### 1.2. Terms and Abbreviations

**Table 2. Terms and Abbreviations**

Abbreviation	Description
AGND	Analog Ground
AIN	Analog Input
DIN	Digital Input
DOUT	Digital Output
GND	Ground
MIC	Microphone
RXD	Receive Data
TXD	Transmit Data
SPKN	Speaker Negative
SPKP	Speaker Positive

## 2 Product Overview

### 2.1. Check Parts List

Before starting, check all the following items have been included with your GL500. If anything is missing, please contact your supplier.






Figure 1. Appearance of GL500



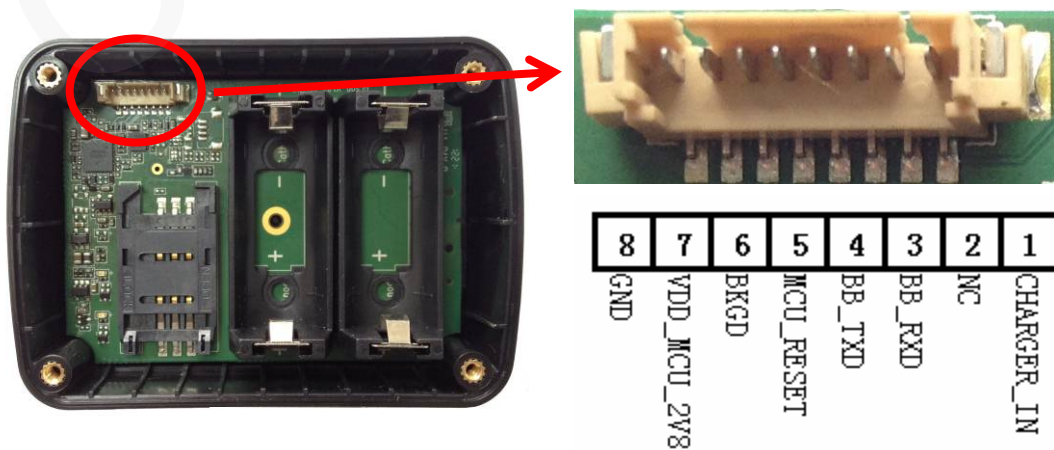
## 2.2. Parts List

Table 3. Parts List

Name	Picture
GL500 Locator	80*58*26.8 mm
CR123A Battery	
GL500 Data Cable (Optional)	
GL500 MCU Download Kit (Optional)	

## 2.3. Interface Definition

The GL500 has an 8 PIN interface connector. It contains the connections for power, RS232, MCU Interface, etc. The sequence and definition of the 8PIN connector are shown in following figure:

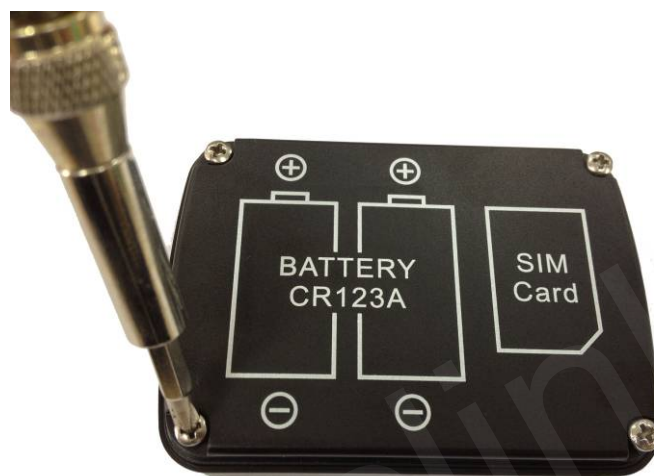


**Figure 2. The 8 PIN connector on the GL500****Table 4. Description of 8 PIN Connections**

<b>Index</b>	<b>Description</b>	<b>Comment</b>
1	CHARGER_IN	External DC power input, 5V
2	NC	Not connected
3	BB_RXD	BB UART RXD
4	BB_TXD	BB UART TXD
5	MCU_RESET	MCU CHIP RESET SIGNAL
6	BKGD	MCU CHIP BKGD SIGNAL
7	VDD_MCU_2V8	MCU POWER INPUT, 2.8V
8	GND	Power and digital ground

## 3 Getting Started

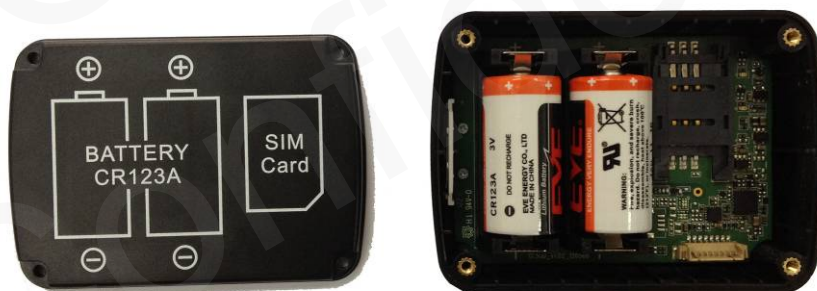
### 3.1. Opening the Case



**Figure 3. Opening the Case**

Use the Screwdriver to remove the screws, and then open the case.

### 3.2. Closing the Case

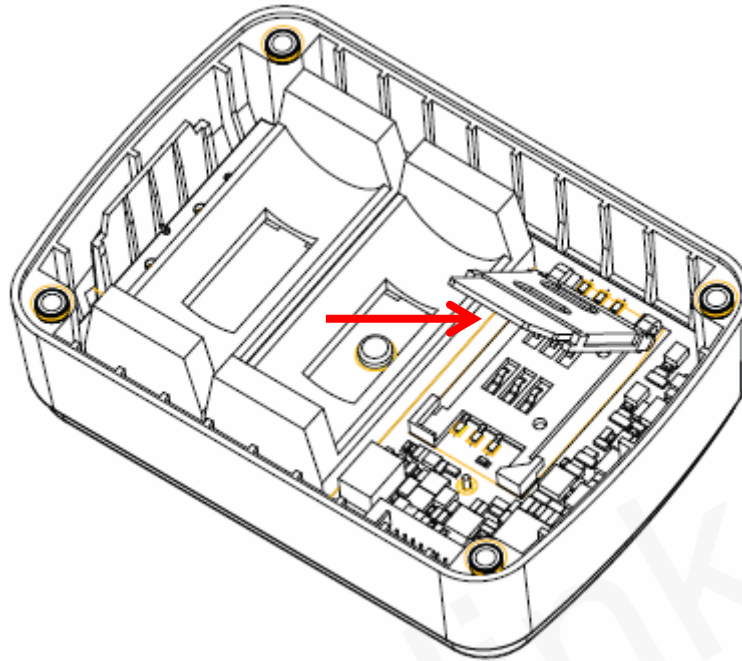


**Figure 4. Closing the Case**

Place the cover in the correct position as shown in upon figure. Please note the battery direction and SIM Card direction, and then tighten the screws with a Screwdriver.

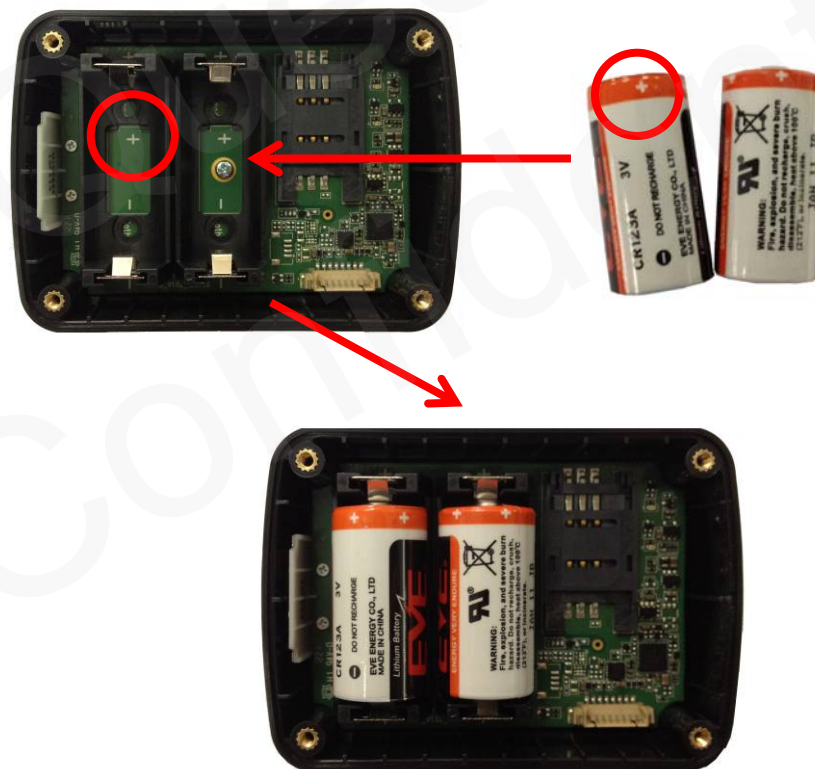
### 3.3. Installing a SIM Card

Open the case and ensure the unit is not powered (unplug the internal battery). Slide the holder right to open the SIM card. Insert the SIM card into the holder as shown below with the gold-colour contact area facing down taking care to align the cut mark. Close the SIM card holder. Close the case.



**Figure 5. SIM Card Installation**

### 3.4. Installing the Internal Backup Battery



**Figure 6. Backup Battery Installation**

There have 2pcs internal CR123A battery for GL500, Insert the battery into the holder as shown in upon figure, please note that the polarity mark of the battery and battery holder need to be consistent.

### 3.5. Power On the Device

After inserted the Battery, GL500 will power on automatically, the Status LED will start work, detail description in the next section.

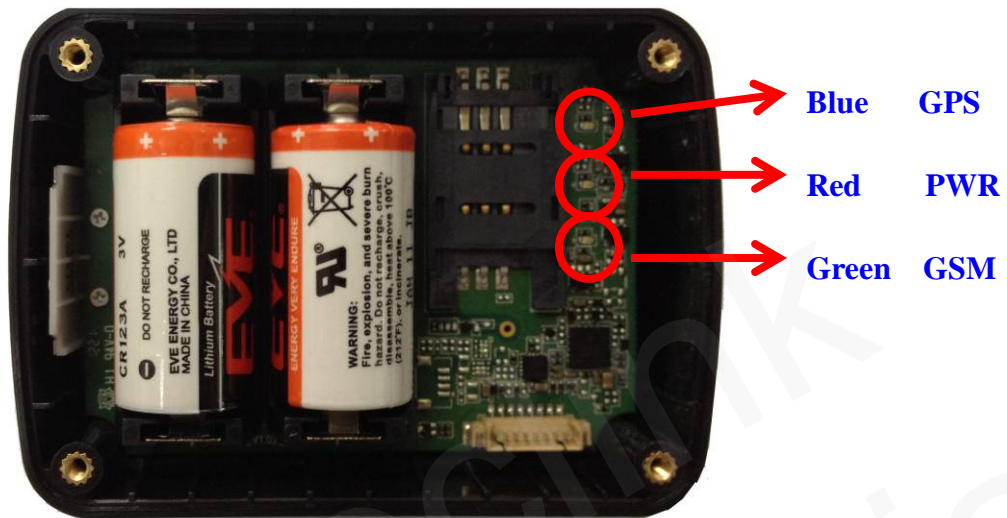


Figure 7. GL500 Status LED

### 3.6. Device Status LED

**Table 5. Definition of Device status and LED**

LED	Device status	LED status
GSM (Green)	Device is searching GSM network.	Fast flashing (Note1)
	Device has registered to GSM network.	Slow flashing (Note2)
	SIM card needs pin code to unlock.	ON
GPS (Blue)	GPS chip is powered off.	OFF
	GPS sends no data or data format error.	Slow flashing
	GPS chip is searching GPS info.	Fast flashing
	GPS chip has gotten GPS info.	ON
PWR (Red)	Battery voltage is lower than 0%.	OFF
	Battery voltage is below 10%.	Slow flashing
	Battery voltage is more than 10%.	ON

1 - Fast flashing is about 60ms ON/ 780ms OFF

2 - Slow flashing is about 60ms ON/ 1940ms OFF

Note:

1, In Battery mode, all LEDs are only enabled at the first 5 minutes after power on the device, and then will be shut down all the time.

2, In Debug mode (used external power), all LEDs will be enabled all the time.