



GSM/GPRS/GPS Tracker **GL500**  
**User Manual**

TRACGL500UM001

Revision: 1.01



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## Contents

Contents .....	3
1. Introduction.....	7
1.1. Reference.....	7
1.2. Terms and Abbreviations.....	7
2. Product Overview .....	8
2.1. Check Parts List .....	8
2.2. Parts List.....	9
2.3. Interface Definition .....	9
3. Getting Started .....	11
3.1. Opening the Case .....	11
3.2. Closing the Case.....	11
3.3. Installing a SIM Card .....	11
3.4. Installing the Internal Backup Battery.....	12
3.5. Power On the Device.....	13
3.6. Direction of GL500 Placed .....	13
3.7. Device Status LED .....	14

**Table Index**

Table 1. GL500 Protocol Reference.....7  
Table 2. Terms and Abbreviations.....7  
Table 3. Parts List .....9  
Table 4. Description of 8 PIN Connections ..... 10  
Table 5. Definition of Device status and LED ..... 14

## Figure Index

Figure 1.	Appearance of GL500 .....	8
Figure 2.	The 8 PIN connector on the GL500 .....	10
Figure 3.	Opening the Case .....	11
Figure 4.	Closing the Case.....	11
Figure 5.	SIM Card Installation .....	12
Figure 6.	Backup Battery Installation.....	12
Figure 7.	GL500 Status LED .....	13
Figure 8.	Direction of GL500 Placed .....	13

**Revision History**

<b>Revision</b>	<b>Date</b>	<b>Author</b>	<b>Description of change</b>
1.00	2012-6-11	Cid Xu	Initial
1.01	2013-6-3	Tony.Pei	Add the direction of GL500 placed

## 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.

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.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

### 1.1. Reference

Table 1. GL500 Protocol Reference

SN	Document name	Remark
[1]	GL500 @SMS & @Track Interface Protocol	The @SMS & @Track 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



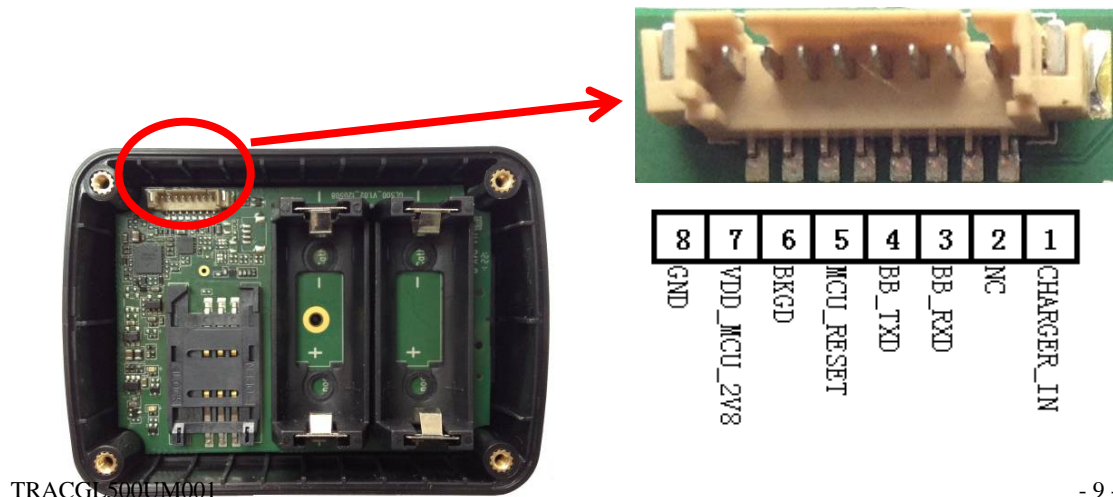
## 2.2. Parts List

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

Index	Description	Comment
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

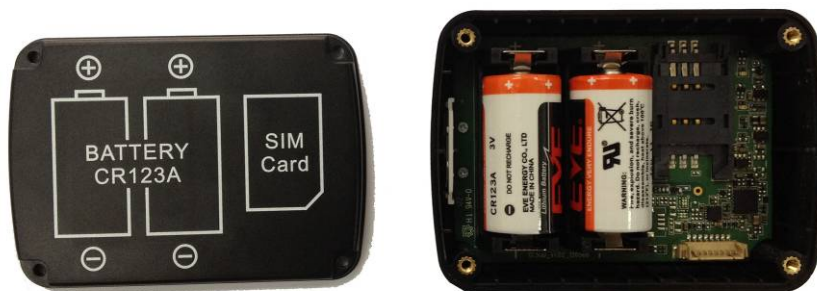
### 3.1. Opening the Case



**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.

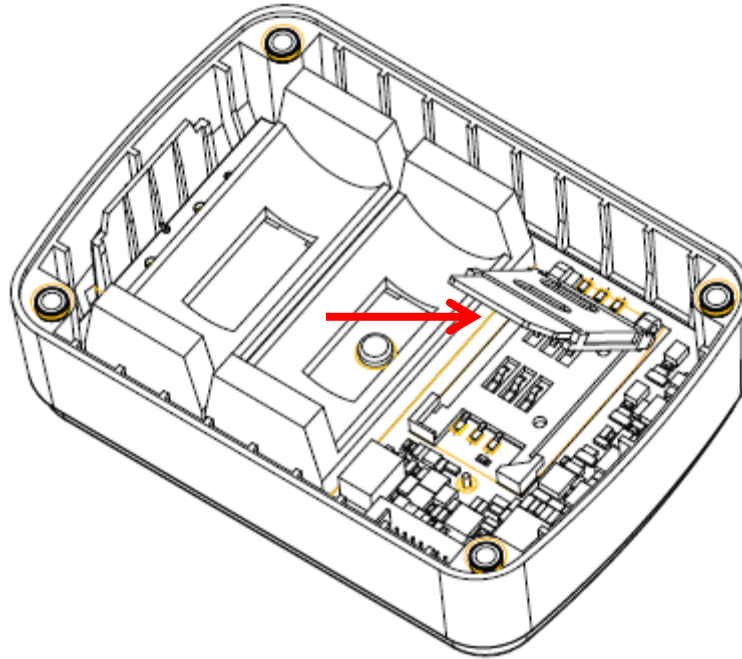


Figure 5. SIM Card Installation

### 3.4. Installing the Internal Backup Battery

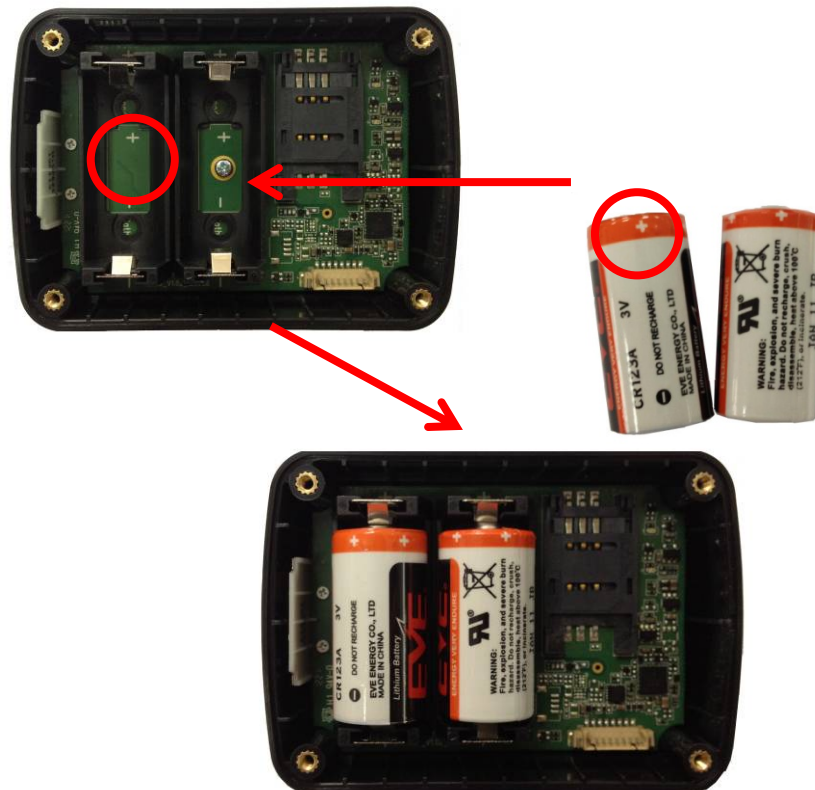


Figure 6. Backup Battery Installation

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.

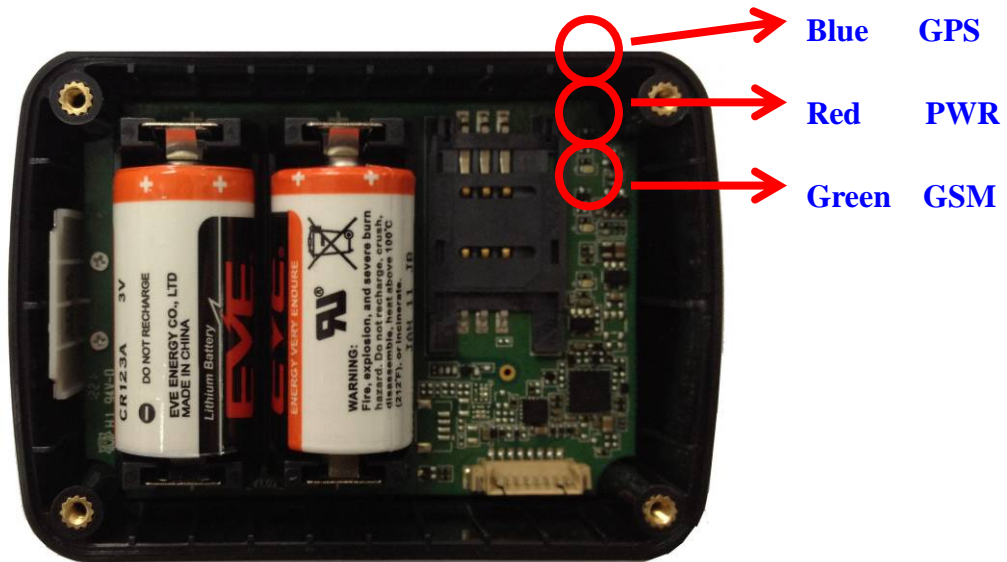


Figure 7. GL500 Status LED

### 3.6. Direction of GL500 Placed

The side with label should towards sky to ensure there is good GPS signal can be recieved.



Figure 8. Direction of GL500 Placed

### 3.7. 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.