GL522MG User Manual

EGPRS/LTE Cat-M1/LTE Cat-NB2/GNSS Tracker

GL522MGUM0100

Version: 1.00

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Contents

0. Revision History

Version	Date	Description of Change
1.00	2023-12-04	Initial

1. Introduction

GL522MG is an IP68 waterproof GNSS tracker that features up to 10 years standby time powered by internal batteries and supports Wi-Fi positioning. The device is ideal for asset monitoring & Iot management that require real-time monitoring. GL522MG supports LTE Cat M1/NB2 network on multiple bands for operation in America, Europe, and Oceania with a fallback to GPRS.

1.1. GL522MG Product

Table 1. GL522MG Product

Model No.	Region	Technology	Operating Band (MHz)
GL522MG	Worldwide	eMTC/NB-IoT	GSM: GSM850/GSM900/ DCS1800/PCS1900 LTE-TDD: B39 (for Cat.M1 only) LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28

2. Product Overview

2.1. Product Appearance

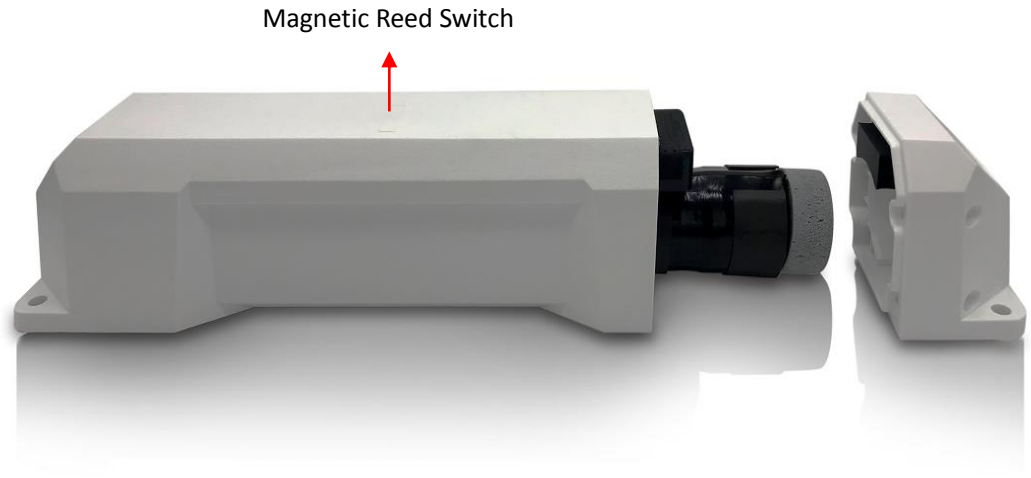

Figure 1. GL522MG Product View

2.2. Magnetic Reed Switch Description

Table 2. Magnetic Reed Switch Description

Magnetic Reed Switch Function	To power on the device: Use a magnet (1.2 mT minimum) to approach magnetic reed switch. Then the switch will be triggered and the device will be powered on.
Note: 1, Once powered on, please use RTO PWROFF OTA command to power off the device.	

2.3. LED Description

Note: this PCBA is not glued to show better the locations of the LED. For the real products, the whole PCBA is glued.

Figure 2. GL522MG LEDs

There are two LEDs on GL522MG. They can work separately and in combination to indicate the status of the device. For the details when they work separately, please see the table below:

Table 3. GL522MG LED Description (work separately)

LED	Event	State
CELL LED (Green)	Searching network	Fast flash
	The device has been registered on network	Slow flash
	SIM is locked by PIN	Solid on
	Modem off	Solid off
GPS LED (Blue)	GPS is in the process of fixing	Fast flash
	GPS is on and GPS gets fix	Slow flash
	GPS off	Solid off

Fast flash: 100ms on/200ms off

Slow flash: 200ms on/1000ms off

Note:

1, The LEDs will be on about 5 minutes after power on. After that, they will always be off.

2, The LEDs will not be visible because the PCB is inside opaque plastic housing.

2.4. Parts List

Table 4. GL522MG Parts List

Name	Picture	Description
GL522MG Locater		EGPRS/LTE Cat-M1/LTE Cat-NB2/GNSS Tracker
Magnetic Buckle Kit (Optional)		Used to install GL522MG
Steel Cable & Steel Plates (Optional)		Used to provide extra protection from falling in case the magnetic buckle loosens

3. Getting Started

3.1. Opening and Closing the Case

Figure 3. GL522MG Screw Position

To open/close the case: Unfasten or tighten the 4 screws at side.

3.2. Replacing the Battery

After opening the case, unplug the old battery from the PCBA and replace it with a new battery.

4. Installation Precautions

- Firmly install the device to a reliable surface to prevent falling off.
- Make the side with antenna face sky to have better signal reception.
- Do not install the device under metal surface or in enclosed environments having difficulty in getting GPS and network signal.

5. Troubleshooting and Safety Info

5.1. Troubleshooting

Table 5. GL522MG Troubleshooting List

Trouble	Possible Reason	Solution
After the device is turned on, the Status LED always flashes quickly.	The signal is too weak. The device isn't registered to the network.	Please move the device to a place with good network coverage.
Messages can't be reported to the backend server by network.	APN is not right.	Ask the network operator for the right APN.
	The IP address or port of the backend server is wrong.	Make sure the IP address for the backend server is an identified address in the internet.
The device can't get GPS fix.	The GPS signal is weak.	Move the device to a place under open sky.
		It is better to make the side with antenna face the sky.

5.2. Safety Info

- Do not disassemble the device by yourself.
- Do not put the device in the overheated or too humid place, and avoid exposure to direct sunlight. Too high temperature will damage the device or even cause battery explosion.

6. Appendix: Supported Accessories

- Magnetic Buckle Kit (Optional)
- Steel Cable & Steel Plates (Optional)

FCC regulatory conformance：

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.

NOTE: This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

RF Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.