GB130MG User Manual

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

TRACGB130MGUM001

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International Telematics Solutions Innovator

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0. Revision History

Version	Date	Author	Description of Change
1.00	2021-11-09	Eric Xu	Initial

1. Introduction

The GB130MG is a device designed for self-installation. It simply mounts directly onto the vehicle's battery with only two wires to attach. This approach allows for either a very low cost installation or for the insurance customer to self-install. Its built-in GNSS receiver has very high sensitivity, a fast time to first fix and supports 1Hz (every second) location sampling during vehicle motion. Its built-in Bluetooth can be used for data transmission. Its multiband LTE Cat-M1 and Cat-NB2 allow the GB130MG location to be monitored in real time or periodically tracked by a backend server and mobile devices. Its built-in 3-axis accelerometer allows motion detection, 800Hz pre/post incident data collection, and extends battery life through sophisticated power management algorithms. System integration is straightforward as complete documentation is provided for the full featured @Track protocol. The @Track protocol supports a wide variety of reports including emergency, geo-fence boundary crossings, low battery, and scheduled and compressed GNSS position.

1.1. Reference

Table 1. GB130MG Protocol Reference

SN	Document Name	Remark
[1]	GB130MG @Track Air Interface Protocol	The air protocol interface between GB130MG and backend server.

2. Product Overview

2.1. Check Parts List

Before starting, check all the following items have been included with your GB130MG. If anything is missing, please contact your supplier.

Figure 1. Appearance of GB130MG

2.2. Parts List

Table 2. Parts List

Name	Picture
GB130MG Locator	

2.3. Interface Definition

The GB130MG has a 2-pin power cable. The definition of the 2-pin power cable is shown below.

Table 3. Description of 2-Pin Power Cable

Index	Colour	Definition	Description
1	Red	VIN	External DC power input, 8-32V
2	Black	GND	Ground

3. Getting Started

3.1. Open the Case

Remove 6pcs screws from the device, insert the triangular-pry-opener into the gap of the case and push the opener up until the case is unsnapped.

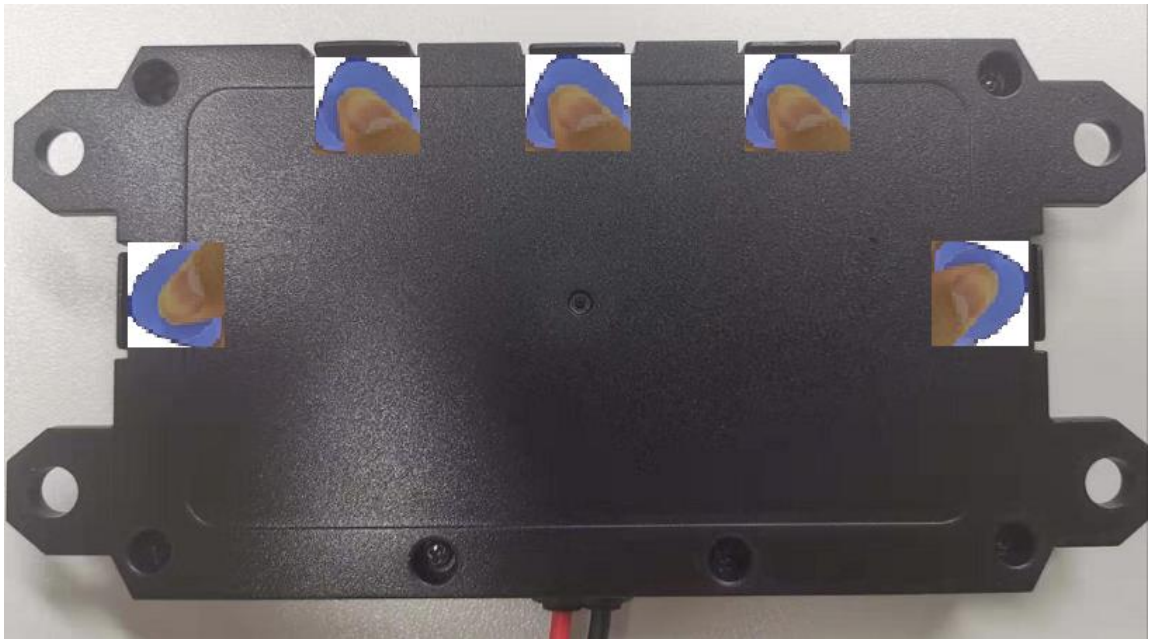


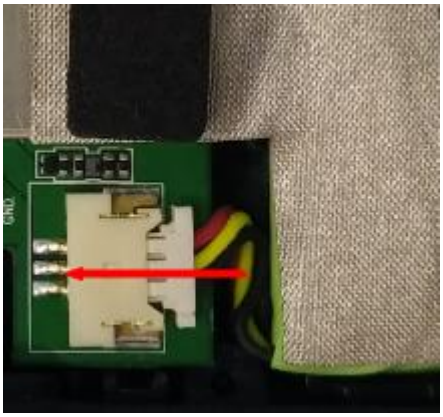
Figure 2. Open the Case

3.2. Close the Case

Step_1: Put the motherboard into the front case.

Step_2: Make sure the silicon rubber seal ring is in the gap of the front case and the power cable wire holder is in the rubber groove of the rear case.

Step_3: Insert the battery connector into the socket.



Step_4: Place the cover on the bottom, press the cover until it snaps into place, and tighten the screws.

Figure 3. Close the Case

3.3. Install a SIM Card

Step_1: Slide the holder to the left to open the SIM card holder.

Step_2: Place the SIM card on the holder with the gold-colour contact area facing down. Take care to align the cut mark.

Step_4: Slide the holder to the right to close the SIM card holder.

Step_5: Close the case.

Figure 4. Install a SIM Card

3.4. Power Connection

VIN (PIN1) / GND (PIN2) are the power input pins. The input voltage range for this device is 8V to 32V. The device is designed to be installed in vehicles that operate on 12V/24V vehicle without the need for external transformers.

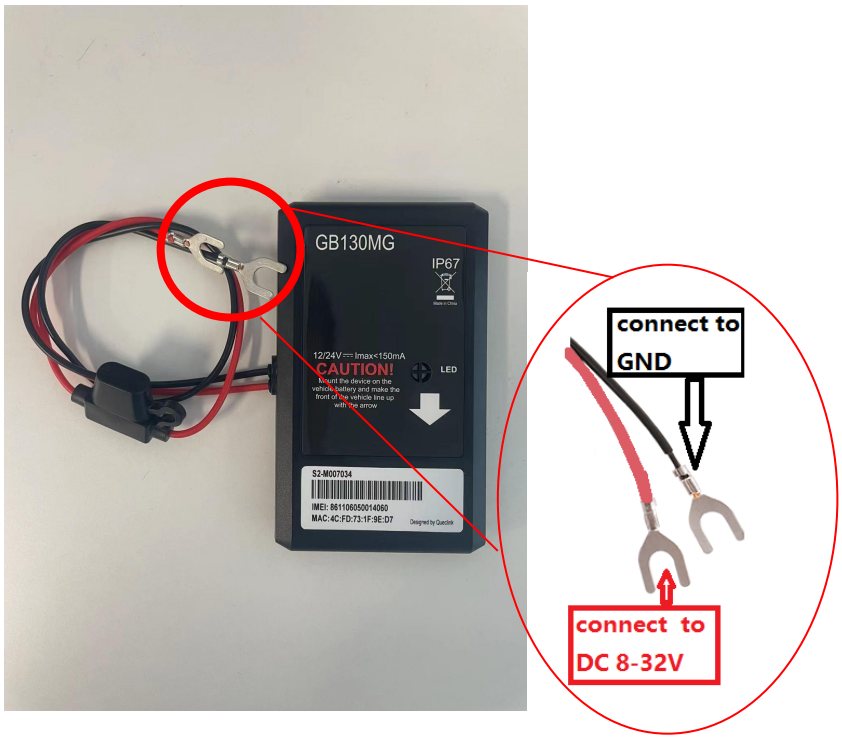


Figure 5. Typical Power Connection

Note:

1. Do not connect any external cable on the GB130MG device.
2. The GB130MG simply mounts directly onto the vehicle's battery with only two wires to attach. It should be installed and operated with a minimum distance of 20cm from human body.

LED Status

Table 4. Definition of Device Status and LED

Device Status	LED Status
Working normally	Continuous on
PDP context not activated	Flashing pattern 1: 100ms On, 2s Off
Network not registered or SIM card not inserted	Flashing pattern 2: 100ms On, 500ms Off, 100ms On, 2s Off
GNSS location not fixed	Flashing pattern 3: 100ms On, 500ms off, 100ms On, 500ms Off, 100ms On, 2s off
PDP context not activated and GNSS location not fixed	Flashing pattern 4: 100ms On, 2s Off, 100ms On, 500ms Off, 100ms On, 500ms Off, 100ms On, 2s Off
Network not registered or SIM card not inserted and GNSS location not fixed	Flashing pattern 5: 100ms On, 500ms Off, 100ms On, 2s Off, 100ms On, 500ms Off, 100ms On, 500ms Off, 100ms On, 2s Off
SVR Paired successfully	Flashing pattern 6: 2s on, 2s off, for 40 seconds.
Device power off or sleep mode	Off

Figure 6. GB130MG LED on the Case

3.5. Motion Sensor Direction

GB130MG has an internal 3-axis accelerometer supporting driving behaviour monitoring and motion detection. The following shows the directions of the motion sensor. The Z axis points vertically outward.

Figure 7. Motion Sensor Direction

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.

This device complies with part 15 of the FCC rules and RSS-247 of Industry Canada. 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.

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.

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
- This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.