

GB100MG User Manual

GPS Tracker

TRACGB100MGUM001

Version: 1.00



Document Title	GB100MG User Manual
Revision	1.00
Date	2020-03-20
Status	Release
Document Control ID	TRACGB100MGUM001

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Contents

Contents	2
Table Index	3
Figure Index.....	4
0. Revision History.....	5
1. Introduction	6
1.1. Reference.....	6
2. Product Overview.....	7
2.1. Check Parts List.....	7
2.2. Parts List	8
2.3. Interface Definition	8
3. Getting Started	9
3.1. Open the Case	9
3.2. Close the Case	10
3.3. Install a SIM Card.....	11
3.4. Power Connection	12
3.5. LED Status.....	13
3.6. Motion Sensor Direction	14
4. Bluetooth.....	15
5. Certification.....	15
5.1. FCC Certification	15

Table Index

Table 1. GB100MG Protocol Reference	6
Table 2. Parts List.....	8
Table 3. Description of 2-Pin Power Cable	8
Table 4. Definition of Device Status and LED.....	13

Figure Index

Figure 1. Appearance of GB100MG	7
Figure 2. Open the Case	9
Figure 3. Close the Case	10
Figure 4. Install a SIM Card.....	11
Figure 5. Typical Power Connection	12
Figure 6. GB100MG LED on the Case	13
Figure 7. Motion Sensor Direction	14

0. Revision History

Version	Date	Author	Description of Change
1.00	2020-03-20	Young Chen	Initial

1. Introduction

The GB100MG 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. It's built-in GNSS receiver has very high sensitivity, a fast time to first fix and supports 10Hz location sampling during vehicle motion. It's built-in Bluetooth can be used for data transmission. It's multiband LTE Cat-M1 and Cat-NB1 allow the GB100MG location to be monitored in real time or periodically tracked by a backend server and mobile devices. It's built-in 3-axis accelerometer allows motion detection, 100Hz 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. GB100MG Protocol Reference

SN	Document Name	Remark
[1]	GB100MG @Track Air Interface Protocol	The air protocol interface between GB100MG and backend server.

2. Product Overview

2.1. Check Parts List


Before starting, check all the following items have been included with your GB100MG. If anything is missing, please contact your supplier.



Figure 1. Appearance of GB100MG

2.2. Parts List

Table 2. Parts List

Name	Picture
GB100MG Locator	

2.3. Interface Definition

The GB100MG 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, and make sure the silicon rubber seal ring is in the gap of the front case and the power cable wire holder in the rubber groove of the rear case..

Step_2: Insert the battery connector into the socket.

Step_3: Place the cover on the bottom.

Step_4: 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: Open the case and pull out the battery connector from the socket to ensure the device is not powered.

Step_2: Slide the holder to the left to open the SIM card holder.

Step_3: Put 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.

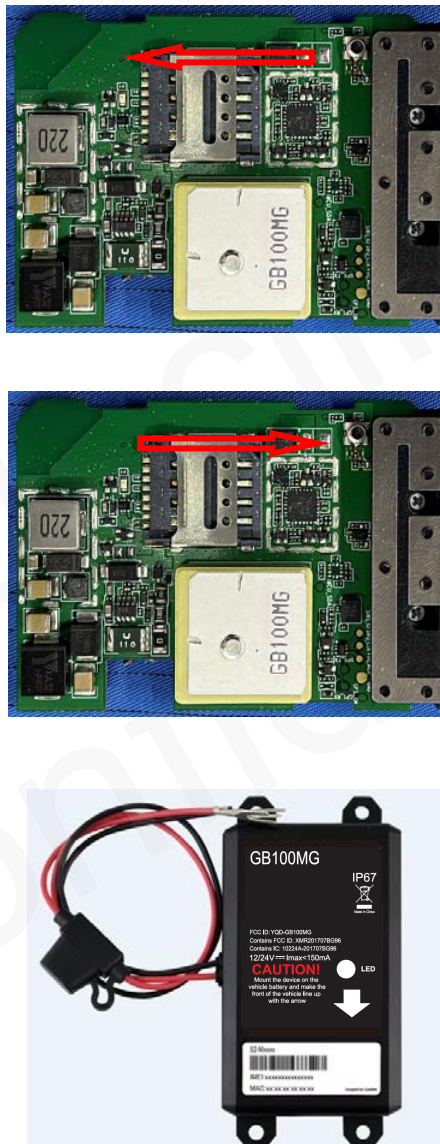


Figure 4. Install a SIM Card

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.

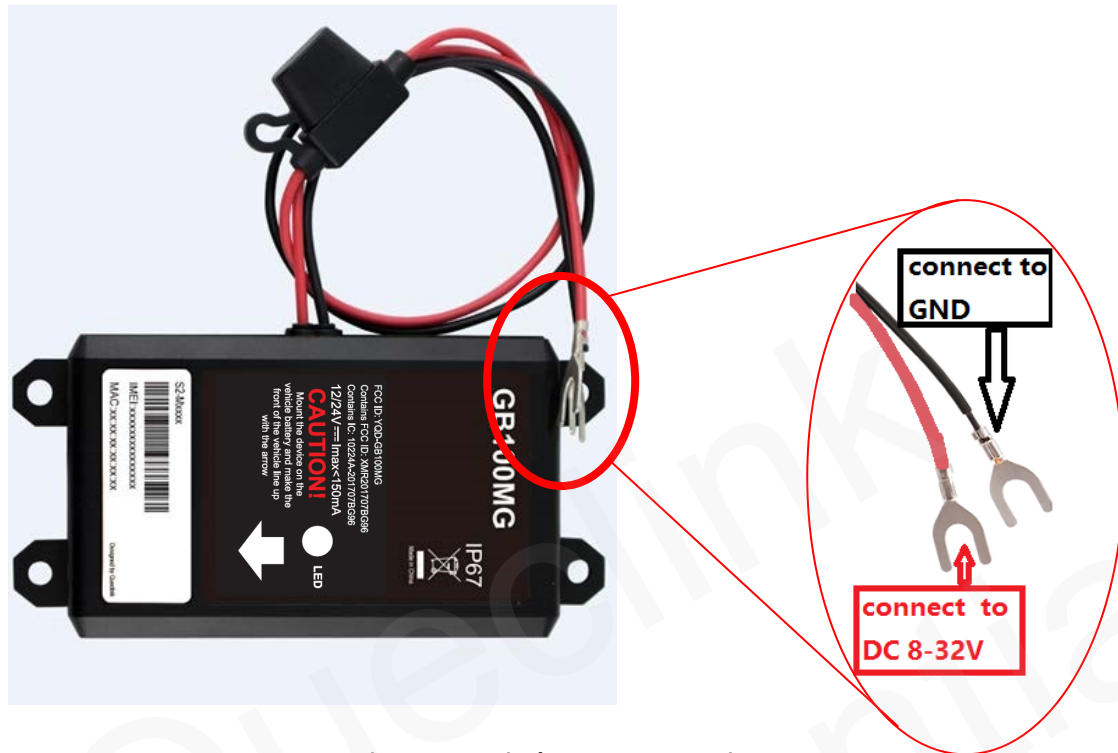


Figure 5. Typical Power Connection

Note:

1. Do not connect any external cable on the GB100MG device.
2. The GB100MG 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.

3.5. 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
Device power off or sleep mode	Off



Figure 6. GB100MG LED on the Case

3.6. Motion Sensor Direction

GB100MG 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 faces outwards vertically.



Figure 7. Motion Sensor Direction

4. Bluetooth

The device role of Bluetooth could be Master and Slave.

When the device role is Slave, the device will provide below services: device information service, battery information service, virtual serial port service. Other devices can read or use these services after connecting devices.

When the device role is Master, the device will provide below services: the others devices can read or use the above services after connecting devices, connect the designated device to read the data or related information of the designated Bluetooth devices. After reading the data, the server can be reported to the server by the corresponding message.

5. Certification

5.1. FCC Certification

The product contains a LTE module FCC ID: XMR201707BG96

FCC Compliance Statement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. 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, and
- (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.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.