

GV500CNA User Manual

LTE Cat1

TRACGV500CNAUM001

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0. Revision History

Version	Date	Author	Description of Change
1.00	2024-06-17	Rik Xia	Initial

1. Introduction

GV500CNA is a vehicle tracking device that plugs into a vehicle's OBD II port. Its compact design allows easy installation. Its built-in GNSS receiver has superior sensitivity and fast time to first fix. It supports LTE CAT 1 B2/4/5/12/13/66/71 allowing the GV500CNA's 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. 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, driver behaviour or scheduled GNSS position and many other useful functions.

1.1. Reference

Table 1: GV500CNA Protocol Reference

SN	Document Name	Remark
[1]	GV500CNA @Track Air Interface Protocol	The air protocol interface between GV500CNA and backend server.

1.2. Terms and Abbreviations

Table 2: Terms and Abbreviations

Abbreviation	Description
PWR	External Power Supply
GND	Ground
OBD	On-Board Diagnostics

2. Product Overview

2.1. Description

GV500CNA is a GNSS vehicle tracking device based on the OBD II interface. It has compact design and is easy to install. GV500CNA contains a 5-pin micro USB connector, an internal LTE antenna, two internal GNSS antennas and three LEDs.



Figure 1. Appearance of GV500CNA

2.2. Parts List

Table 3: Parts List

Name	Picture
GV500CNA Locator	50mm*49mm*24mm
Specialized Micro 5-pin USB Cable	

2.3. Interface Definition

GV500MG has an OBD II connector. The sequence and definition of the OBD II connector are shown in the following figure.



Figure 2. OBD II Connector on GV500MG

Table 4: Description of OBD II Connections

Index	Description	Remark
1	NC	No Connect
2	NC	No Connect
3	NC	No Connect
4	GND	Power and digital ground
5	GND	Power and digital ground
6	NC	No Connect
7	NC	No Connect
8	NC	No Connect
9	NC	No Connect
10	NC	No Connect
11	NC	No Connect
12	NC	No Connect
13	NC	No Connect
14	NC	No Connect
15	NC	No Connect
16	PWR	External DC power input, 8-32V

2.4. Motion Sensor Direction

GV500CNA has an internal 3-axis accelerometer supporting driving behaviour monitoring, power conservation and motion detection. The following shows the directions of the motion sensor.



3. Getting Started

3.1. Opening the Case

Insert the triangular-pry-opener into the gap of the case as shown below, and push the opener up until the case is unsnapped.

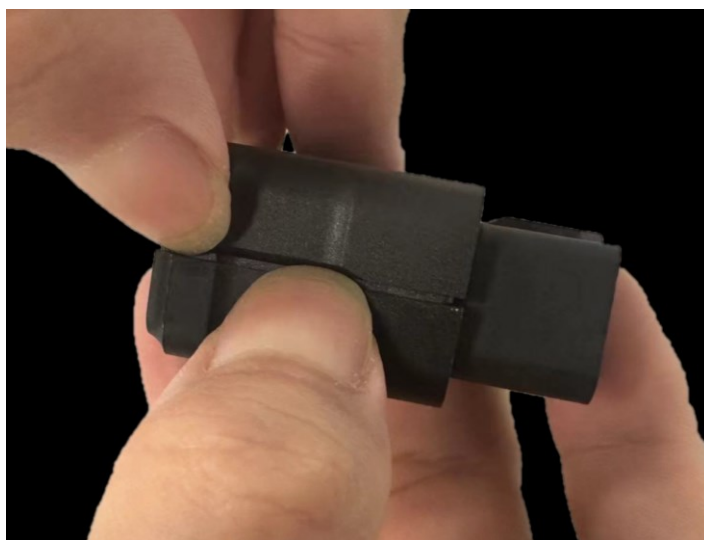


Figure 3. Opening the Case

3.2. Closing the Case

Close the case as shown below.



Figure 4. Closing the Case

3.3. Installing a SIM Card

Open the rubber plug and insert the SIM card into the holder as shown below.

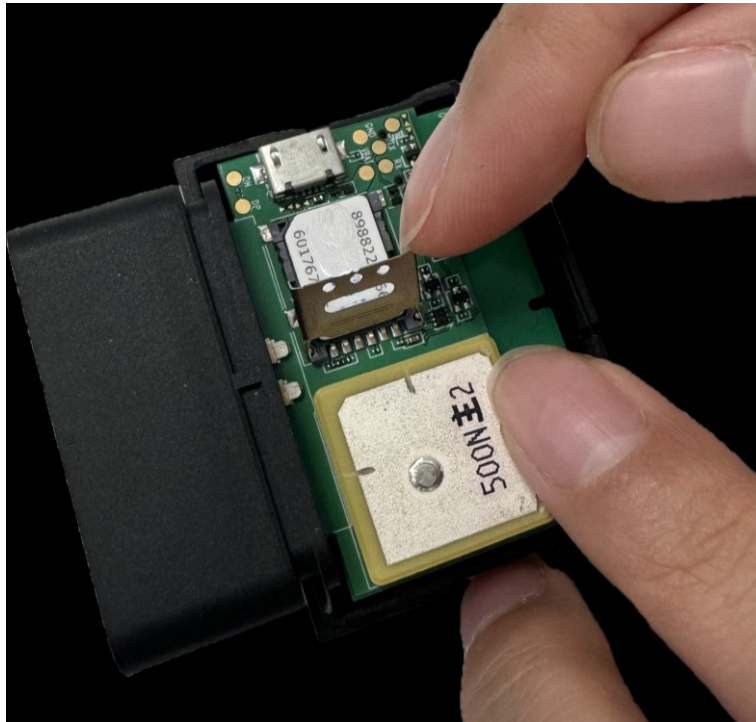


Figure 5. SIM Card Installation

3.4. Device Status LED



Figure 6. GV500CNA LED on the Case

Table 5: Definition of Device Status and LED

LED	Device Status	LED Status
Cellular LED	The device is searching for network.	Fast flashing(Note2)
	The device has been registered to on network.	Slow flashing(Note3)
	The SIM card needs pin code to unlock.	ON
GNSS LED	GNSS is turned off.	OFF
	The device has got GNSS location information.	ON
	The device is searching for GNSS signal.	Fast flashing
	GNSS sends no data or data format error occurs.	Slow flashing
PWR LED	No external power and internal battery voltage is lower than 3.84V.	OFF
	No external power and internal battery voltage is above 3.84V.	Slow flashing
	External power in and internal battery is charging.	Fast flashing
	External power in and internal battery is fully charged.	ON

Note:

1. Cellular LED and GNSS LED can be configured to turn off after a period of time using the Manage Tool.
2. Fast flashing: for Cellular LED, it is about 100 ms ON/200 ms OFF; for GPS LED and PWR LED, it is about 100 ms ON/100 ms OFF.
3. Slow flashing: for Cellular LED, it is about 200 ms ON/1000 ms OFF; for GPS LED and PWR LED, it is about 600 ms ON/600 ms OFF.

FCC Caution.

a、 § 15.19 Labeling requirements.

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.

b、 § 15.21 Changes or modification warning.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

c、 § 15.105 Information to the user.

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.

*RF warning for Mobile device: 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.

This equipment complies with IC 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 Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement