GV57CG User Manual

GSM/GPRS/LTE Cat1 GNSS Tracker

TRACGV57CGUM001

Version: 1.00

Driving Smarter IoT

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History

Version	Date	Author	Description of Change
1.00	2023-04-25	Daniel Cheng	Initial.

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1. Introduction

The GV57CG is a compact GNSS vehicle tracking device that supports EGPRS and LTE Cat 1. It is designed for a wide variety of applications such as stolen vehicle recovery, motorcycle monitoring and other basic tracking applications. The built-in GNSS receiver has superior sensitivity and fast initial positioning. The full-featured @Track Air Interface Protocol provides the complete documentation, so it's easy to learn system integration. The protocol supports a wide variety of reports including emergency alarm, geo-fence boundary crossings, external power supply monitoring and position reports.

1.1 Reference

Table 1: GV57CG Protocol Reference

SN	Document Name	Remark
[1]	GV57CG @Track Air Interface Protocol	The air protocol interface between GV57CG and backend server.

1.2 Terms and Abbreviations

Table 2: Terms and Abbreviations

Abbreviation	Description
AIN/IN1	Analog Input/Digital Input1
VIN	External DC Power Input
GND	Ground
OUT	Digital Output
IGN	Ignition

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2. Product Overview

2.1 Overview

To get started, please check the parts list first. If anything is missing, please contact your sales representative.

Figure 1. Appearance of GV57CG

2.2 Parts List

Table 3: GV57CG Parts List

Name	Picture
GV57CG Locator	
User Cable	
GV57CG USB_Cable_1M (Optional)	

Note: The **GV57CG USB_Cable_1M** is an optional accessory and may not be delivered along.

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2.3 Interface Definition

The GV57CG has a 5-PIN pitch connector cable for connecting power and I/O. Please view the following **Figure 2** and **Table 4** for details.

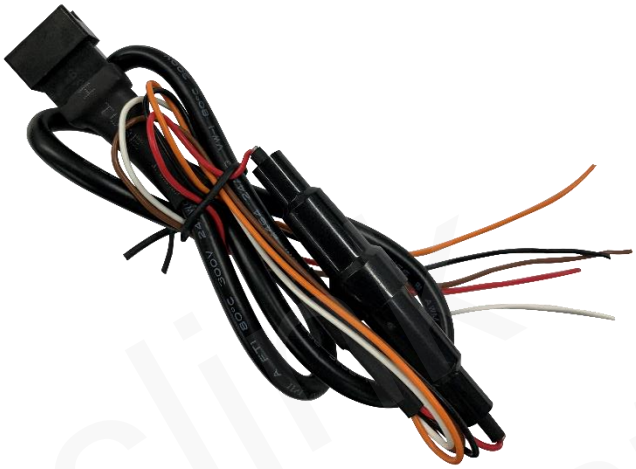

Figure 2. GV57CG 5-PIN Pitch Connector Cable

Table 4: Description of 5-PIN Connections

Index	Description	Color	Remark
1	AIN/IN1	Orange	Analog Input/Digital Input1, negative trigger
2	VIN	Red	External DC Power Input, 9-90V
3	GND	Black	Ground
4	OUT	Brown	Digital Output, open drain, 150mA max
5	IGN	White	Ignition input, positive trigger

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3. Get Started

3.1 Install a SIM Card

Step 1

Open the top cover.

Note: Please unplug the USB cable and ensure that the device is not powered on.

DO NOT disassemble the device repeatedly, otherwise, the waterproof performance of the device may be affected.

Step 2

Make sure the small notch in the corner of the SIM card matches the one in the SIM card tray so that it fits properly. Place the words or logo side of the SIM card facing up. Then slide the SIM card tray back into the SIM card slot.

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Step 3

Press to close the top and bottom covers until you hear a snap. Make sure that there is a tight fit between the covers and the seal ring.

Step 4

Tighten the screws on the four corners with the screwdriver to close the device.

3.2 USB Interface

The GV57CG has a USB interface that is used for firmware download by using the **USB_Cable_1M**.

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Note: Make sure that the USB cable of the GV57CG is oriented correctly when plugged into the corresponding connector. The cable should be vertically down, as shown in the following figure.

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3.3 Power Connection

PIN 2 (VIN, red) and PIN 3 (GND, black) are used for power input. The power supply connected to the PIN must be 9V to 90V for the GV57CG to work properly.

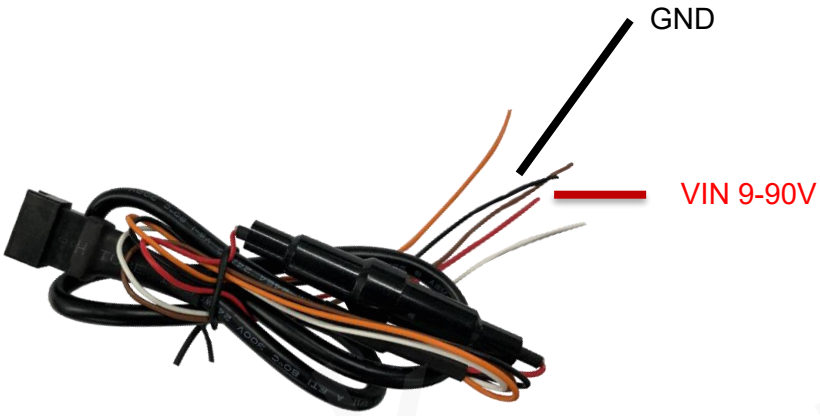

Figure 3. Typical Power Connection

3.4 Ignition Detection

Table 5: Electrical Characteristics of Ignition Detection

Logical Status	Electrical Characteristics
Active	5.0V to 32V
Inactive	0V to 3V or open

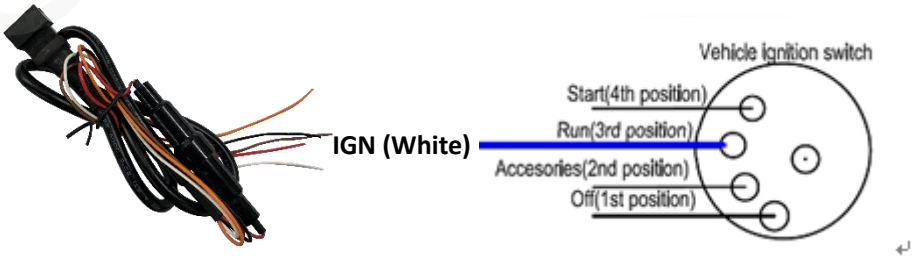

Figure 4. Typical Ignition Detection

PIN 5 (IGN, white) is used for ignition detection. We recommend connecting the PIN 5 to the RUN position of the vehicle ignition switch, as shown in **Figure 4**.

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If you are looking for an alternative, we recommend that you find a power source that is only available when the vehicle is started, such as a power source for the FM radio. The device will send messages to the backend server as the IGN signal completes configuration when the ignition is on, and switch to the power saving mode when the ignition is off.

3.5 Digital Input/Analog Input

There is an input on the GV57CG that can be configured as an analog input or a digital input.

For the digital input , it is a negative trigger.

For the analog input, the range of input voltage is from 0V to 16V.

Table 6: Electrical Characteristics of Digital Input

Logical Status	Electrical Characteristics
Active	0V to 0.8V
Inactive	Open

Figure 5. Typical Digital Input Connection

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3.6 Digital Output

PIN 4 (OUT, brown) is an open-drain digital output. The maximum drain current for the device is 150mA.

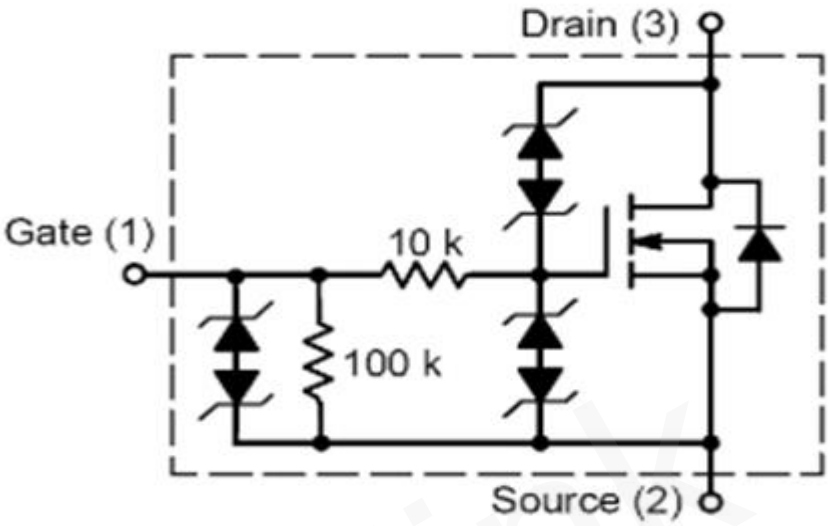

Figure 6. Internal Driver Circuit for Digital Output

Table 7: Electrical Characteristics of Digital Output

Index	Description	Remark
1	Enable	<1.5V @ 150mA
2	Disable	Open drain

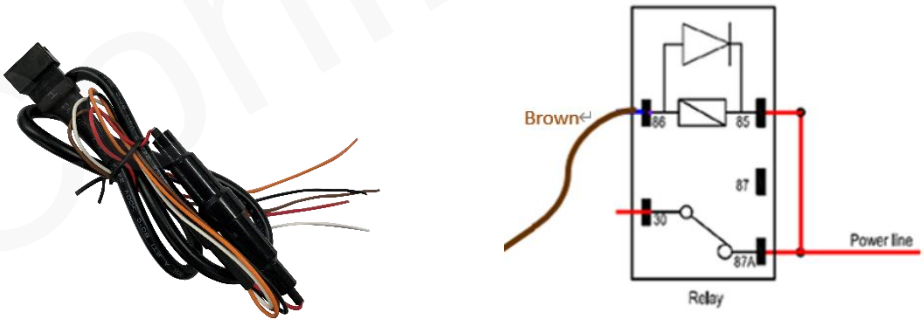

Figure 7. Typical Connection with a Relay

Note:

Many modern relays already have the freewheeling diodes inside. If the relay has this diode, make sure the polarity of the relay is connected correctly when using it. If not built in, the diode should be added outside the relay. A common diode such as a 1N4004 will work in most circumstances.

3.7 LED Status

The GV57CG has two status LEDs, namely Cellular LED and GNSS LED.

Figure 8. GV57CG LEDs on the Case

Table 8. Definition of Device Status and LED

LED	Device Status	LED Status
Cellular LED (Green)	The device is searching for network.	Fast flashing
	The device has been registered on the network.	Slow flashing
	The SIM card needs pin code to unlock.	Solid green
GNSS LED (Blue)	GNSS is turned off.	OFF
	The device has got GNSS location information.	Solid blue
	The device is searching for GNSS signal.	Fast flashing
	GNSS sends no data or data format error occurs.	Slow flashing

Note:

1. The fast flashing of the Cellular LED is about 100ms when the LED is on and 800ms when it is off.
2. The slow flashing of the Cellular LED is about 100ms when the LED is on and 2000ms when it is off.
3. The fast flashing of the GNSS LED is about 100ms when the LED is on and 100ms when it is off.
4. The slow flashing of the GNSS LED is about 600ms when the LED is on and 600ms when it is off.

3.8 Motion Sensor Direction

The GV57CG has an internal 3-axis accelerometer that supports motion detection. The following figure shows the directions of the motion sensor. The Z-axis points vertically up.

Figure 9. Motion Sensor Direction

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4. Troubleshooting and Safety Information

4.1 Troubleshooting

Problem	Possible Reason	Solution
The Cellular LED flashes fast all the time when the device is on.	1. The cellular signal strength is weak. 2. The device isn't registered on the network.	Please place the device in an area with good network coverage.
Messages can't be reported to the backend server.	The IP address or port of the backend server is wrong.	Please check and make sure the IP address is identified by the Internet.
The device can't be powered off.	The device is connected to the ignition wire.	Please disconnect the ignition wire and try again.
The device can't get successful GNSS fix.	The GNSS signal is weak.	1. Please place the device in an open area. 2. Let the side without LED face up.

4.2 Safety Information

- DO NOT disassemble the device by yourself.
- DO NOT place the device in an environment with high temperature and high humidity. Avoid exposure to direct sunlight. The high temperature will damage the device and even cause a battery explosion.
- DO NOT use the device on the airplane or near the medical equipment.

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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.

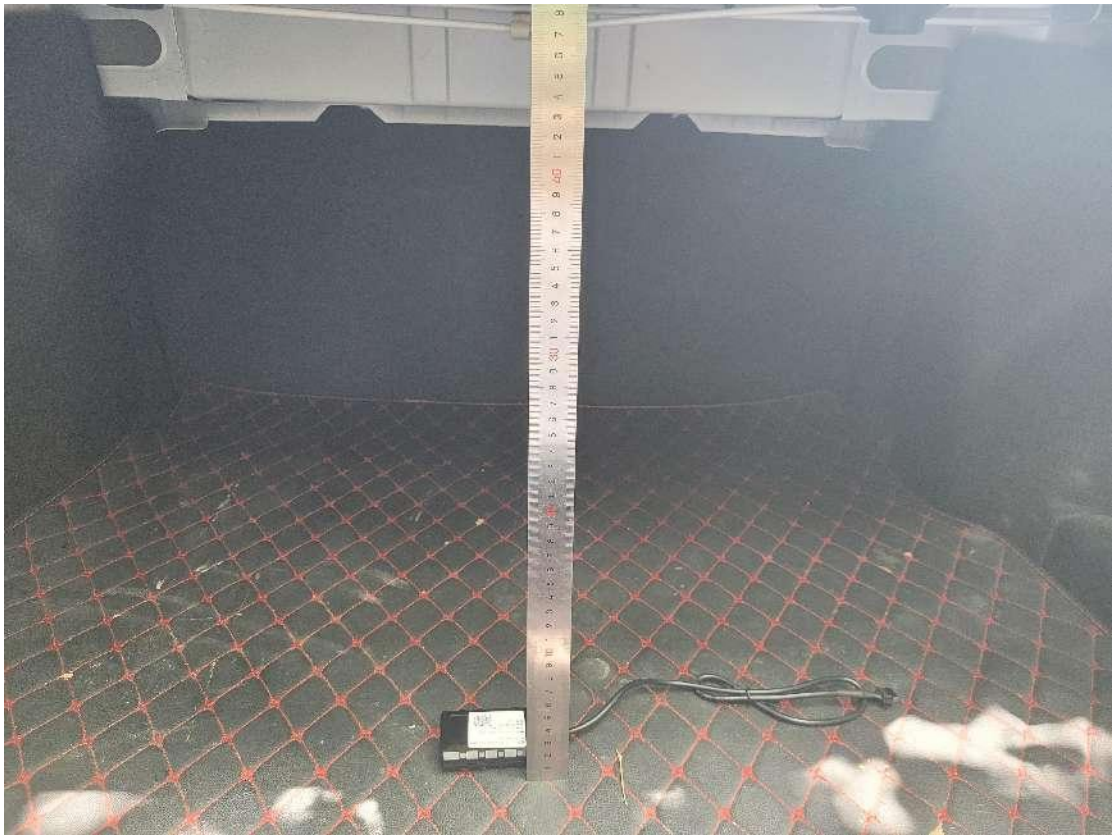
This device is packed in the trunk.like Below mark.

Right

Left

Front

Back



TOP

The device is mounted on a shelf.Below mark.

Right

Left

Front

Back

Top