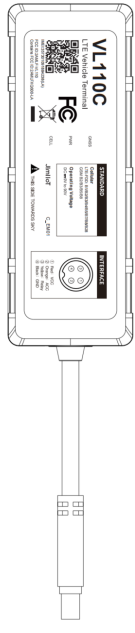
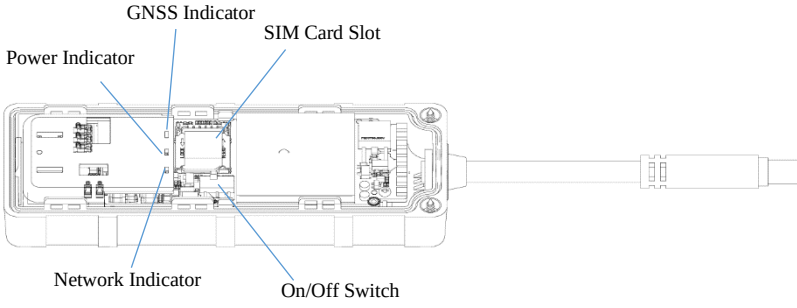
VL110C
LTE Vehicle Terminal
User Manual V1.0

Product Overview

The VL110C is a 4G compact LTE Vehicle GNSS Terminal designed for the management of vehicles of all types. The wide 9-90V input voltage range is compatible with almost all vehicles. LTE communication with GSM (2G) fallback ensures a solid connection in almost all cases. It is a perfect tracker for a wide range of use cases - stolen vehicle recovery and the management of motorcycles, passenger cars, and light commercial vehicles.





Packing List

VL110C	1	Unit	/
Power cable	1	Pcs	Cable length (1m)

Interface Specifications

Pin	Color	Description
VCC	Red	Power + (9–90VDC)
GND	Black	Power – / GND
ACC	Orange	Vehicle startup detection
Relay	Yellow	Cut off the vehicle fuel supply or power (need to used with external relay)

LED Indication

Red (Power)

On for 0.3s and off for 0.3s	Low internal battery
On for 1s and off for 3s	Fully charged

On for 0.1s and off for 3s	Work correctly
Solid on	Charging (whose priority is higher than that of the low internal battery item)
Off	Internal battery insufficient/internal failure

Blue (GNSS)

On for 0.3s and off for 0.3s	In search of GNSS signals
Solid on	Position fixed.
Off	The GNSS module is in sleep or not working.

Green (Cellular)

On for 0.3s and off for 0.3s	Network initialization
On for 1s and off for 3s	Receive network signals normally
On for 0.1s and off for 3s	Device online
Off	No cellular signals are received or no SIM card is attached.

External Battery Status

The red, green, and blue indicators are on for 3 seconds.	Connect or disconnect the external battery.

Note

The three indicators will go out after the terminal has been operating correctly for a while. They can be enabled to work for a while by disconnecting and reconnecting the external power supply, or you can send a command to make them always work.

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.

Introduction

Specifications

Communication network	4G & 2G
Frequency bands	VL111C_LA: Cat1 LTE-FDD B2/B4/B5/B7 GSM B2/B5 VL111C_EM: Cat1 LTE-FDD B1/B3/B7/B8/B20/B28; LTE-TDD B34/B38/B40/B41 GSM B3/B8
GNSS	GPS + BDS
Positioning accuracy	< 2.5m CEP
TTFF (open sky)	Avg. hot start: 2s Avg. cold start: 38s
LED indication	GNSS（Blue）, Cellular（Green）, Power（Red）
Battery	270mAh/3.7V industry-grade Li-polymer battery
Operating voltage	9–90VDC
Ingress rating	IP65
Operating temperature	–20℃ to +70℃
Product weight	44g
Dimensions	94x34x15mm

Functions

Live tracking	The terminal is accurate to within 2.5m （CEP） radius under open sky.
Power-off alert	This type of alert is triggered by a sudden power disconnection or a cut of the connection cable.
Low external battery alert	This type of alert will be triggered if the terminal detects the voltage of the external battery is lower than a preset threshold.
Power-off due to low external battery	If the terminal detects that the voltage of the external battery is lower than a preset threshold, it will automatically disconnect from the external battery to protect the vehicle battery from over discharge.
Remote fuel cutoff	If the terminal detects an exception of the vehicle, it will notify the user, who can send a command to request the terminal to cut off the fuel supply to the vehicle.
Vibrating alert	This type of alert will be triggered if the terminal detects any unexpected vibration of the ignition-off vehicle.

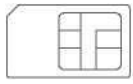
Installation

Terminal Check

Visually check if the terminal is in good condition and if all accessories are included.

SIM Card Attachment

Prepare a standard SIM card. For the card size, see the following figure:

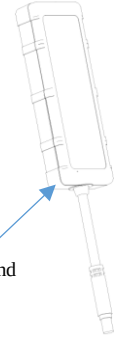


Standard ×

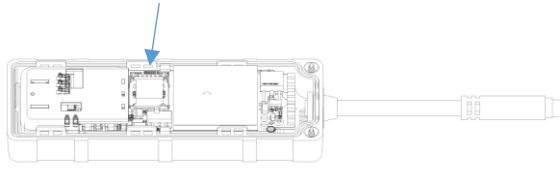
Micro ×

Nano √

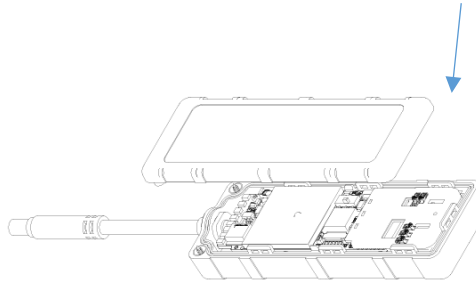
Attach the SIM card，as shown in the following figure:



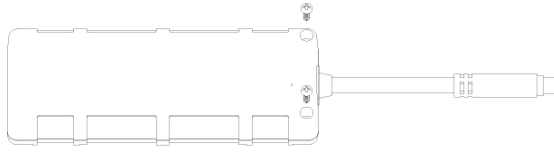
1.Remove the shell of device and make sure the switch is OFF



2.Insert SIM card into the slot and toggle the switch to ON.



3.Attach the shell back



4.Screw back the bottom 2 screws

Note:

The SIM card must be inserted correctly, has GPRS services activated, and is not in arrears. Before removing the SIM card, make sure that the external power supply is disconnected and that the internal battery switch is in the OFF position.

Wiring Diagram

Tips for finding the right wires:

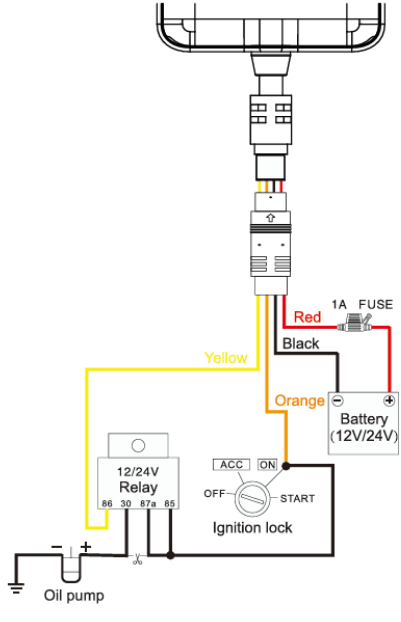
1. Use a multimeter to find out the positive and negative of vehicle

battery.

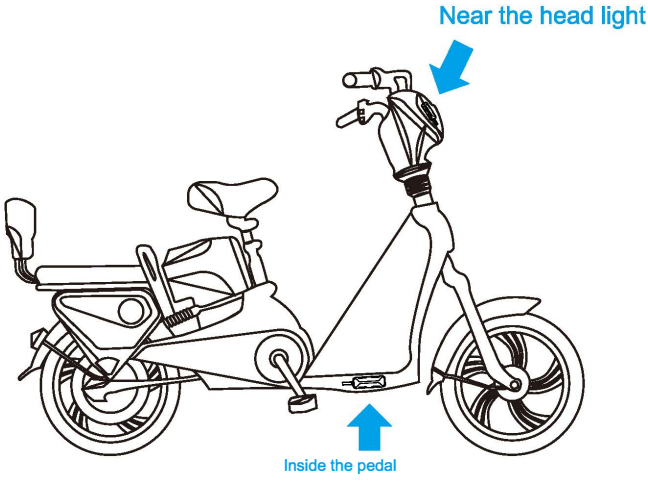
Note: The battery voltage will display on the multimeter regardless of the ignition status of the automobile.

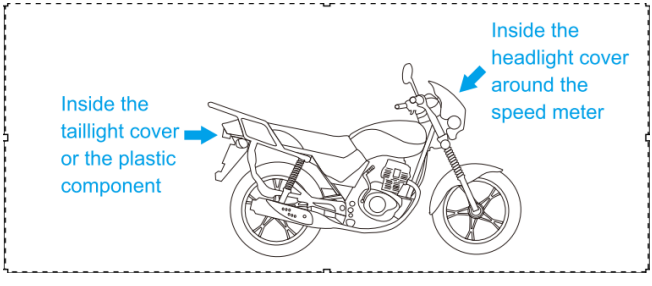
2. The way to find the ACC wire: Connect the black probe of the multimeter to the negative, and connect the red probe to a random wire. If the random wire is the ACC wire, then the reading on the multimeter is 0V if the ignition key is in the OFF position and the reading on the multimeter is the supply voltage when the ignition key is turned to the ON position.

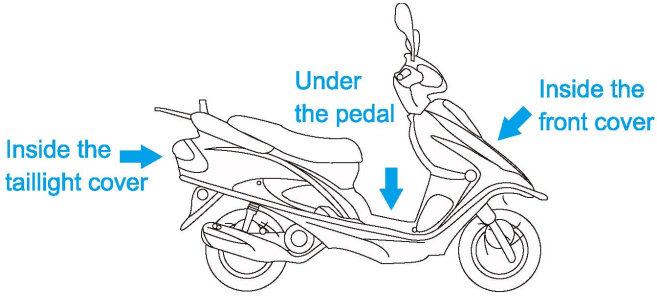
3. Connect the two connectors together, if the vehicle has no connector, please connect the terminal's wires to corresponding vehicle wires.



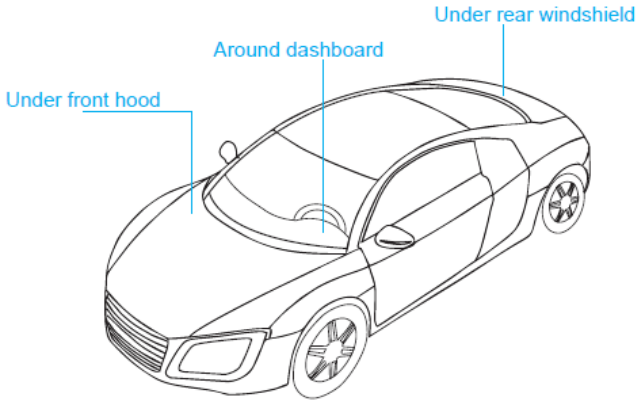
Installation Diagram for Motorcycles







Installation Diagram for Automobile



Note:
1. The device should face up to sky.
2. Metal thermal barrier or heating layer, which are always installed on windshield, may affect the signal, please avoid installing the device under these objects.

Platform Operations

Logging In to the Platform

You can configure and control the terminal via the platform designated by your dealer.

You can download the mobile app via the URL provided by your dealer.

iOS **Android**

Battery Safety

Please use batteries that are specified by the manufacturer of the terminal. The use of any non-original accessories will void the warranty services. The manufacturer will assume no repair liabilities for damages resulting from the use of non-original accessories.

・ Avoid metal objects as they may cause short circuits on battery contacts.

・ Do not bend or forcibly open the battery.

・ Do not soak the battery in water or expose it to fire..

・ It is forbidden to use batteries that are deformed, discolored, spilled, or package-damaged.

・It is forbidden to disassemble or modify the battery.

Troubleshooting

When a problem arises with the terminal, you can troubleshoot it by the following solution. If the problem persists, please don't hesitate to contact your dealer or service provider.

Issue	Description	Solution
Poor satellite signal	The terminal may be used in a place where the satellite signals cannot be perfectly penetrated, such as at lower stories of a high-rise building or in a basement.	Try it in a place where satellite signals can be well received.
	The terminal is facing downward or is blocked by metal objects.	Adjust the terminal so its front side facing upward or install it in another position.
Power-on failure	The internal battery is low.	Connect the device to an external power source to recharge the battery.
	Fuse burn-out	Contact your dealer for a replacement.
Failure to access the network	The SIM card is attached incorrectly.	Re-attach it.
	The metal side of the SIM card is stained.	Wipe it with a clean cloth.
	The SIM card is damaged or invalid.	Replace it.
	The terminal is out of the cellular service area.	Try it in a service area.
	The signal is poor.	Try it in an area with strong signals.

	The contact is poor.	Check if the power cable is connected securely.
Failure to query a location	Your SIM card has no GPRS services activated.	Please contact the network operator and activate GPRS services.
	The SIM card is in arrears.	Recharge it.
	The terminal doesn't respond to a command.	Check to ensure that the terminal can access the network and the SIM card is activated with text feature.

Warranty instructions

1. The warranty is valid only when the warranty card is properly completed, and upon presentation of the proof of purchase consisting of the original invoice indicating the date of purchase, model and serial No. of the product. We reserve the right to refuse warranty if this information has been removed or changed after the original purchase of the product from the dealer.

2. Our obligations are limited to repair of the defect or replacement the defective part or at its discretion replacement of the product itself.

3. Warranty repairs must be carried out by our Authorized Service Centre. The warranty will be void, even if a repair has been attempted by any unauthorized service center.

4. Repair or replacement under the terms of this warranty does not provide right to extension or renewal of the warranty period.

5. The warranty is not applicable to cases other than defects in material, design or workmanship.

Maintenance Record

Date		Service by	
Product Model			
IMEI Number			
Failure Description			
Comments			