

T-229LA-L User manual (Rev. 1.0)







Sinocastel Co., Ltd.

1. Product description

The T-229LA-L terminal can provide passenger car and commercial vehicle customers with a variety of Telematics services including location, security, diagnosis, driving behavior analysis, on-board access points, etc., and can provide data accumulation for vehicle manufacturers and related supporting enterprises. At the same time, it can also meet the requirements of government departments for monitoring and remote emission monitoring of new energy vehicles.

Packing List

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Accessory name		Quantity	Remarks
T-229LA-L terminal		1	●
Device connection line		1	●
OBD interface extension cable		1	○
USB setting cable		1	○

● Standard configuration ○ Optional configuration (If the optional configuration is not selected when ordering, the accessory will not be included in the box)

2. Technical index

2.1 External interface

OBD standard connector

Used to connect to the vehicle standard 16-pin diagnostic interface.

The vehicle-mounted OBD system can communicate with external devices that follow the same communication protocol through this interface.

Micro USB interface

Connect to the computer via USB cable.

SIM card holder

This interface is used to install the SIM card.

2.2 Status indication

Indication type	colour	Working status	Remarks
power supply /OBD	red	Flashing (on for 0.5s, off for 0.5s): not entering the car system Strobe: the platform issues control commands Steady bright: successfully entered the car system Off: sleep state	Flashing when power off
LTE	blue	Fast flashing (on for 0.5s, off for 0.5s): SIM card is not detected or network is not registered Slow flashing (on for 0.5s, off for 2.5s): Network registered Constant light: Successfully logged in to the service platform Off: GSM is off	
GPS	green	Blinking (on for 1s, off for 1s): GPS signal is good Steady on: searching for GPS signal Off: GPS is off	

2.3 technical parameter

Mechanical parameters	size	140mm (length) x 74mm (width) x 28mm (height)
	weight	200g
interface		2x20P connector: TE 1318384-2 SIM card interface: Micro SIM, Push-Push Type
storage		8MB FLASH, can store up to 96,000 GPS data
Data transmission method		GPRS/HSPA/LTE/SMS
Targeting		GPS
Diagnostic protocol		ISO 9141-2 ISO 14230-4 ISO 15765-4 SAE J1939 GB-17691
power supply	Operating Voltage	9-36V DC
	Working current	Average working current: <150mA@13.8/27.6VDC Sleep working current: <5mA@12V
	Built-in battery	500mAH
Six-axis acceleration sensor/gyro		Driving behavior detection
GPS		Receiving satellite frequency: 1575.42MHZ Receiving sensitivity: -165dBm 定位精度: 3m CEP Cold start: <23s Hot start: <1s
Support frequency band		Working frequency band (T-229LA, North America):

		FDD LTE B2/B4/B12 WCDMA B2/B4/B5 Network communication protocol: embedded TCP/IP protocol stack
Indicator light		GPS/LTE/OBD indication
Antenna	4G antenna	Built-in
	GPS antenna	Built-in or external
Environmental parameters	Operating temperature	-30°C ~ +70°C
	storage temperature	-40°C ~ +85°C
	humidity	5%~95% (no frost)

3. Setting parameters

3.1 PC Tool parameter setting

Download the USB driver and PC Tool from <http://www.sinocastel.com/Support/> and install it.

Connect the USB setting cable to the terminal and the computer, open the OBD PC Tool, click "Help -> User Manual" and refer to the user manual to set the relevant parameters.

4. Installation Guide

4.1 Install SIM card

1. Remove the equipment cover
2. Locate the SIM card cover and insert the SIM card according to the indicated direction
3. Replace the SIM card cover

4.2 OBD interface

The OBD interface is generally located in the cockpit and generally has an obvious "OBD" logo.





4.3 Install terminal

1. Before installing the terminal, make sure that the network parameters, working mode and other parameters are configured correctly;
2. When the vehicle is turned off, align the terminal with the OBD interface of the vehicle through the cable and insert it in place;
3. For vehicles that will affect the cover after the connector is inserted, please use an OBD extension cable and fix the terminal in a suitable position;
4. Start the engine, the terminal will start OBD communication, GPS positioning and GPRS networking, and indicate the working status of the terminal through the indicator light;
5. It is recommended to drive for more than 10 minutes after installation for the first time.

note:

*When the terminal is plugged in for the first time, it scans the OBD protocol according to the preset working mode (such as passenger car or commercial vehicle mode). The maximum scanning time is 10 minutes. If the OBD protocol is not detected during this period, the terminal will automatically change the working mode. In the tracker mode, if the OBD protocol is detected, the terminal maintains the preset working mode. After that, the terminal always works in a certain working mode. Even if it is plugged in again, the working mode will not change unless the working mode is modified through PC tools, SMS or service platform. If the terminal is preset to tracker mode, it will not scan the OBD protocol.

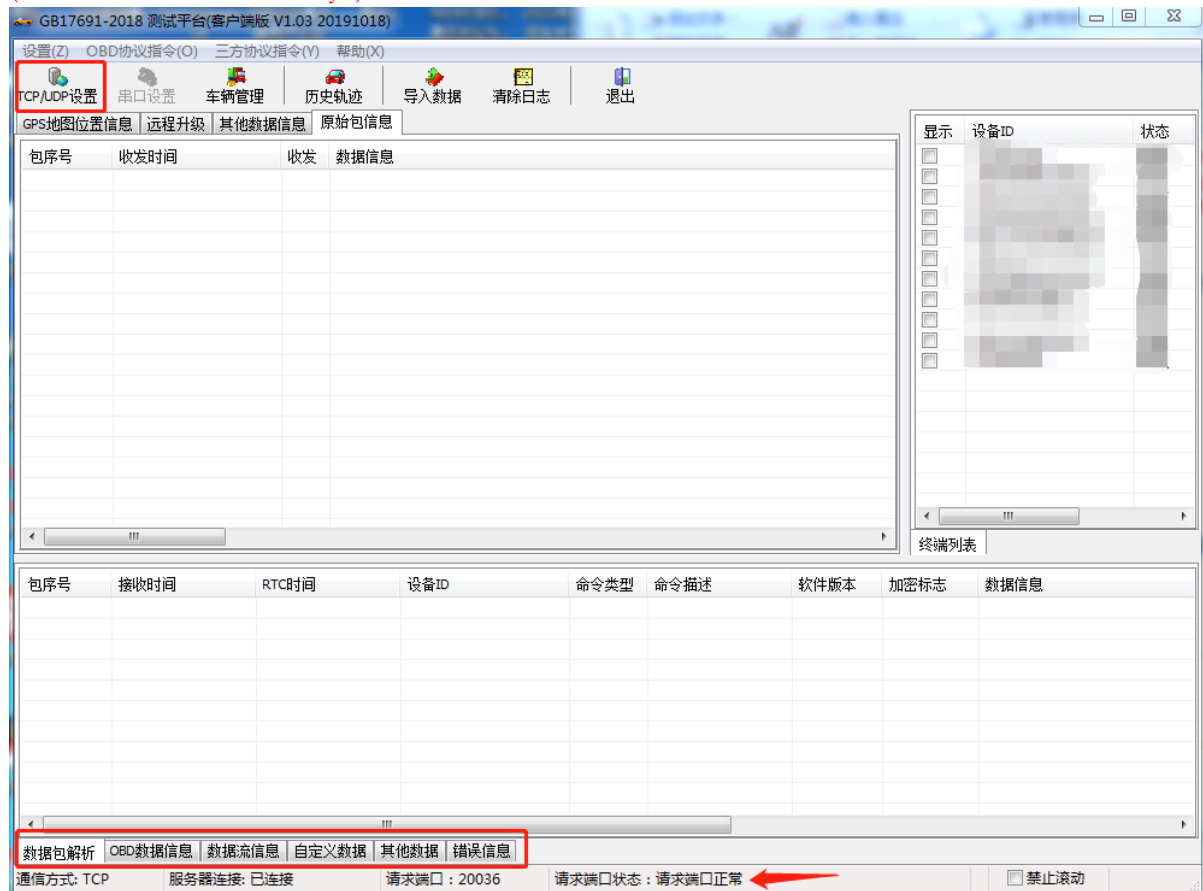
*If GPS cannot be located for a long time, please use an OBD extension cable and fix the terminal at a suitable location in the car to ensure good GPS signal reception.

*During the use of the terminal, when there is an abnormal indication of the meter, please remove the terminal and contact the Aerospace Wireless Technical Support

hold.

*Please do not plug or unplug the device when the engine is running, otherwise the vehicle may work abnormally.

*The terminal enters the dormant state after the flame is turned off, but the battery power is still consumed. The terminal dormant current is 5mA. In order to avoid battery loss, it is recommended to unplug the terminal before parking the vehicle for a long time (such as more than 5 days).



Vehicle test platform

5. Product features

5.1 Communication protocol

This product supports all OBD II standard protocols and is compatible with SAE J1939 protocol.

ISO 9141-2

ISO 14230-4 (KWP2000)

ISO15765-4 (CAN)

GB/T 32960

GB 17691-2018

SAE J1939 (commercial vehicle)

SAE J1587/J1708 (commercial vehicle)

5.2 Data encryption

The data transmission between the device and the server can be encrypted with AES 128bit.

The AES key is randomly generated by the device and sent to the server with RAS 2048bit

encryption. Every time the device logs in to the server, it will synchronize the AES key with the server. By default, encryption is disabled.

5.3 GPS report timing upload

The terminal collects GPS data and uploads it according to the set collection time interval and the number of upload packages. The time interval is 2-600s, and the default setting is 30s.

5.4 Statistics of mileage

In each report information, mileage statistics are included.

5.5 Driving fuel consumption statistics

Each report information contains fuel consumption statistics.

5.6 Driving behavior detection

Real-time detection of bad driving behaviors such as overspeed, excessive speed, rapid acceleration, rapid deceleration, and unstopped parking.

5.7 Alarms and incidents

When the following events are triggered and dismissed, an alarm will be sent to the service platform.

- (1) Ignition event
- (2) Flameout event
- (3) The engine speed is too high (trigger and release)
- (4) Overspeed (trigger and release)
- (5) Battery voltage is too low (trigger and release)
- (6) The coolant temperature is too high (trigger and release)
- (7) Accelerate quickly (step on the accelerator)
- (8) Sudden deceleration (sudden braking)
- (9) Sharp turn
- (10) Rapid change of lane
- (11) Collision
- (12) Vibration
- (13) Stopping without stalling (trigger and release)
- (14) Fatigue driving (trigger and release)
- (15) Towed
- (16) Fault indicator light (on and off)
- (17) Power on

The default alarm threshold:

- (1) The engine speed is too high: 4500 r/min
- (2) Speeding: 120 km/h

- (3) Low battery voltage: 10.5 V
- (4) The coolant temperature is too high: 98°C
- (5) Rapid acceleration: 0.4 g
- (6) Sudden braking: 0.6 g
- (7) Rapid lane change: 0.4g
- (8) Sharp turn: 0.5 g
- (9) Vibration: 1.5 g
- (10) Vibration: 0.08 g
- (11) Excessive engine idle time: 15 minutes
- (12) Fatigue driving: 240 minutes

5.8 Working mode

The terminal supports three working modes, namely: passenger car, commercial vehicle and tracker.

In the tracker mode, the terminal does not support diagnostic data, fault codes, fuel consumption during trips, and some alarms and events, including excessive engine speed, excessive coolant temperature, rapid acceleration, rapid deceleration, and unextinguished parking.

In the tracker mode, the terminal needs to wake up from sleep for 20 seconds of dynamic detection, and from work mode to sleep for 3 minutes of static detection.

5.9 Local setup and maintenance

Upgrade firmware through PC Tool, set and read various parameters.

6. Disclaimer

This manual only applies to T-229LA terminal.

This product complies with OBD II standards, SAE J1939, and China VI standards, but some cars do not meet these standards, so there is no guarantee that this product can provide diagnostic functions on every car.

This product has built-in GPS. When there is a cover in the electromagnetic shielding area or above, the positioning may be affected.

This product has a built-in wireless communication module. During use, keep it away from fuel warehouses, chemical factories, and other areas that may cause explosions. Some places sensitive to external radio frequency signals (such as petrol stations, hospitals and schools, etc.) may be equipped with radio frequency interference equipment. Some functions of this product may be affected within the range of interference.

This product uses mobile communication technology to transmit data. Users must select a SIM card that supports data services and supports roaming, and keep a sufficient balance in the SIM card account. Do not use a SIM card subject to regional restrictions.

To ensure the normal use of the product, please use the original accessories.

The content of this manual is based on the "current situation". Shenzhen Aerospace Wireless Communication Technology Co., Ltd. does not provide any guarantee for the correctness, reliability or content of this manual. Shenzhen Aerospace Wireless Communication Technology Co., Ltd. reserves the right to revise or retract this manual at any time without notice.

7. Product warranty

If the product has quality problems during the warranty period, please send the product, valid warranty card and valid certificate to the dealer where you purchased the product for warranty. Do not disassemble this product by yourself, otherwise the company will not be responsible for any problems or accidents caused by it.

From the date of purchase, the whole machine has a one-year warranty and lifetime maintenance. It is improper use or man-made damage, no warranty.

Open the GB17691-2018 test platform, TCP/UDP set the user name, password and port, enter the monitoring page to view the real-time data of the vehicle or switch different data columns to view different data items.

User name: Contact number: _____

mailing address: _____

Zip code:

Product serial number: Date of purchase: Year Month Day

Remarks:

Please keep this card in order to better serve you.

Dealer (seal):

Maintenance records

Product number:

date	Failure and maintenance records		Repair man	user
	Fault description	Maintenance records		

Note: The warranty unit must fill in this form carefully during warranty

8. statement

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Sinocastel Co., Ltd.

Address: 501, Building 11, Software Park (Phase 2), No. 1, Keji 2nd Road, Nanshan District, Shenzhen, Guangdong, China

Phone: (86)755-86156349

Fax: (86)755-86169366

<http://www.sinocastel.com>

FCC Caution

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.

Any Changes or modifications not expressly approved by the party responsible for compliance 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.

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 and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.