



## Product overview

### Position tracking

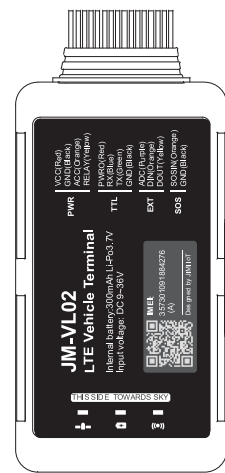
GPS & LBS positioning  
Real-time location query

### Anti-theft

Ignition detection  
Power/Fuel cut-off  
SOS emergency call  
Power supply disconnection alert  
Geo-fence alert  
Towing alert  
Vibration alert

### Configurable peripherals

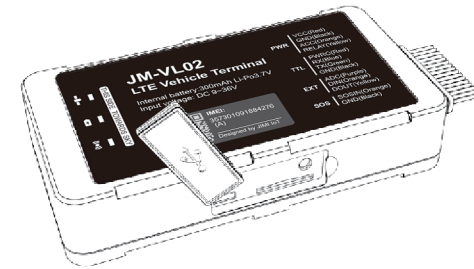
Vehicle door status alert  
Turn light/buzzer triggering  
Fuel level monitoring  
Temperature monitoring  
Driver behavior monitoring



## Specification

GSM	B5(850MHz)/B2(1900 MHz) B8(900MHz)/B3(1800MHz)
LTE	B1/B2/B3/B4/B5/B12/B13/B28/B66 (JM-VL02A) B1/B3/B5/B8/B18/B19/B20/B26 (JM-VL02E)
GNSS Type	MTK all-in-one multi-GNSS SOC
Sensitivity	Cold start: <32s Hot start: <1s
Position Accuracy (CEP50)	Autonomous: <10m
Dimensions	106mm x 56.8mm x 22mm
Weight	104g
Backup Battery	Li-Polymer, 300 mAh
Operating Voltage	9V to 36V DC
Operating Temperature	-30°C to +70°C -30°C to +85°C for storage
Transmit Protocol	TCP

## Product setup



### Insert SIM

Remove the soft plug on one side of the device and insert the SIM card into the card slot.

### Power on & off

Toggle the power switch besides the SIM slot to power on or off the device.

## LED indications

### Power Status (Red)

Behavior	Meaning
On for 0.1s and off for 1s	0%~20% remaining battery
On for 0.1s and off for 4s	20%~100% remaining battery
Solid on	Power supply connected

## GNSS Status (Blue)

Behavior	Meaning
On for 0.5s and off for 0.5s	GNSS synchronizing
On for 2s and off for 4s	Positioning
On for 0.1s and off for 4s	Positioned
Off	GNSS module is in sleep mode or not working

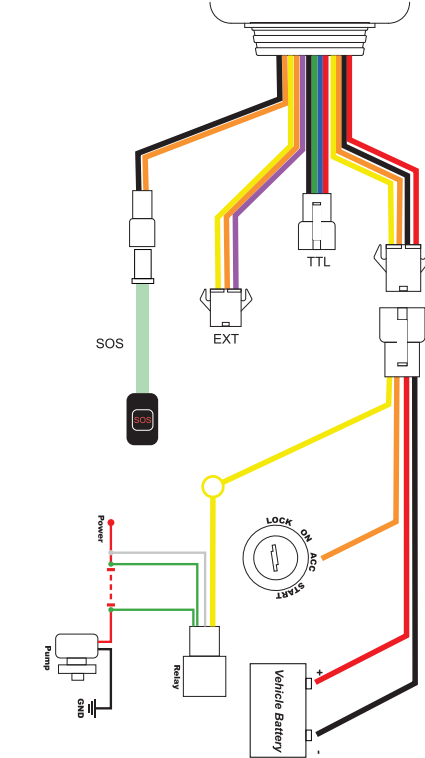
## Wireless Network & SIM Card Status (Green)

Behavior	Meaning
On for 0.5s and off for 0.5s	SIM card not recognized
On for 2s and off for 4s	Registered but no inbound acknowledgement
On for 0.1s and off for 4s	Network connected
Off	No signal received or no SIM card detected

## Interfaces

Interface	Color	Function
PWR	Red	DC 9 to 36v input
	Black	GND
	Yellow	Relay control to cut vehicle fuel support
TTL	Blue	TTL TX
	Green	TTL RX
	Red	DV 5v output max.500mah
EXT	Black	GND
	Purple	Analog detect 0v to 30v
	Orange	GND trigger digital input
SOS	Yellow	Extend relay control
	Orange	GND trigger digital input for SOS function
	Black	GND

## Wiring indication



## Power connection

The standard power supply ranges from 9V to 36VDC. During installation, negative side should connect to the ground. Do not connect with other ground wires simultaneously.

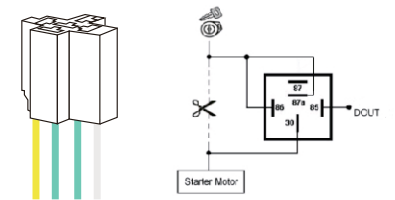
## Ignition wire

ACC line (orange) connects to vehicle's ACC, detecting ignition. Be sure to check if it's a real ignition wire i.e.power does not disappear after starting the engine.

## Relay wiring

Relay's white line (85) connects to the positive side of battery (12V) while the yellow line (86) connects to the device relay control (yellow line on the power cord).

Find the fuel pump in the vehicle and cut off its positive power line. The positive side of fuel pump connects to the green line (87a) while the side closing to starter motor connects to green line (30) , as the below chart. Switch of the two green lines have the same effect.



12V relay is standard. The device is suitable for vehicles with 12V supply. If the vehicle power supply is 24V, use 24V relay.

## Configuration

If you need to change the setting of the device, you can either text the command to the device, or use PC tool from supplier.

### Note:

Texting command might be filtered by local carrier network deployment. In this case you can text through web management center provided by the carrier.

## Common commands

Command	Description	Remark
APN	Set APN	In most countries, APN could be automatically adapted to local mobile operators. If not, please confirm your APN and do the setting. <b>APN, ApnName#</b> or <b>APN, ApnName,User.Password#</b> Auto set APN will be turned off when set APN manually. <b>APN#</b> Query current APN
SERVER	Platform server setting	If you need to use your own server, make sure you have changed the server setting. <b>SERVER,1,domain name,port#</b> <b>SERVER,0,IP,port#</b> Default: <b>SERVER,1,GPSDEV.TRACKSOLID.COM,21102#</b> <b>SERVER#</b> Check the current sever settings

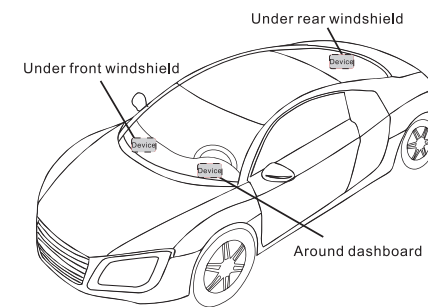
Command	Description	Remark
PARAM	Query device parameters	
GPRSSET	Query platform server and APN Setting	
STATUS	Query status	

## Package & Standard accessories

### Standard package

JM-VL02 device
Power cable
I/O cable
Relay (12V/24V)
SOS button cable

## Installation recommendation



- 1) The device should face up to the sky.
- 2) Metal thermal barrier or heating layer of the windshield affects the signal.

## Troubleshooting

Type	Use
Unable to connect to tracking platform	Check the APN and IP settings. Check whether the data service of SIM card is enabled. Check the balance of SIM card.
Tracker shows offline	Check whether external power is still connected. Check if the vehicle entered network blind area. Check the balance of SIM card.
Unable to locate	Make sure the top side facing upward without metallic things shielded. Make sure it's not in area with no satellite coverage.
Location drift	In area with poor GNSS signal (tall building around or basement) , drifting may happen. Check whether vibration happens around to trigger the accelerator.
No command reply	Make sure command format is correct. Vehicle may be in network blind area. Make sure SIM card is well inserted and has SMS service.

## 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 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. Warranty cover will be void, even if a repair has been attempted by any unauthorized service centre.
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 and workmanship.

## Maintenance Record

Date	Service by
Product Model	
IMEI Number	
Fault Descriptions	
Comments	

# JM-VL02

## LTE CAT M1 & NB2

### VEHICLE TERMINAL

#### User Manual

V1.0