

GPS Tracking Device

Model NO.: QL-1000

User Manual

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Notes:

- Please mount the device steadily on the flat place before using;
- Please make sure the voltage value is right before connecting with battery, and placing the wires to where shouldn't be trodden;
- Please power off when plugging or taking out of any module or connector;
- Please keep the device dry and don't let any liquid fall into the device in case any damage caused in the device or circuit;

If any problem caused as follows, please turn to professional technician:

- When power wire, keyboard, or socket are damaged;
- When liquid infiltrating into the device;
- When the device work unusually or cannot resume to normal even operated according to the instruction;
- When the device cannot work as usual after falling, throwing or breaking;
- When there is obvious damage in the device.

Warning:

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,
- (2) this device must accept any interference received, including interference that may cause undesired operation.









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

RF exposure warning :






This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment shall be installed and operated with minimum distance 20cm between the radiator & body.

1. Characteristics

1.1 Features Description:

-  Real time tracking at intervals
-  Check Ignition Status
-  G-Sensor for Driver Behavior Monitoring
-  External Power Disconnected Alarm
-  GEO-Fences
-  Alarms (Emergency, Overspeed, Parking, Idling)
-  I/O Interface
-  OTA Control

1.2 Specifiactions:

-  96mm (L) × 52mm(W) × 19mm(H)
-  Operating Voltage: 8VDC~50VDC
-  Rechargeable Li-polymer battery 260mAh
-  Operating Temperature: -20℃—70℃
-  Weight: 0.25 Kg/Set

1.3 Chipset and Parameters

Description	Parameters
GSM Module	Quectel M26
Operation Band	850/900/1800/1900 MHZ
LBS Positioning Accuracy	100-500m
GSM Antenna	Built-in
GNSS Chipset	U-blox 7020 All-in-one GPS receiver,
GNSS Chipset Sensitivity	-159 dBm
GNSS Frequency	L1, 1575.42 MHZ
Channels	35 channels examine track
Positioning Accuracy	<2.5m
GNSS Antenna	Built-in
Speed Accuracy	0.1m/s
Time Accuracy	Synchronize with GPS
Max Altitude	18000m
Max Speed	515m/s
G-Sensor Chipset	GMA305KU
SIM Card Type	Micro

2. Interface Definition

The QL-1000 has a 8 PIN interface connector which contains the connections for power, I/O, microphone, sos key, etc.



Figure 1. The 8 PIN connector on the QL-1000

Table 1. Description of the 8 PIN connections

Index	Description	Content
1	MIC POSITIVE	Single end, 2-2.2K microphone.
2	INPUT	Digital input, negative trigger
3	SOS INPUT	SOS Key input, negative trigger
4	POWER POSITIVE	External DC power input, 8-50V
5	OUTPUT 2	Open drain, 150mA max
6	ACC	Ignition input, positive trigger
7	OUTPUT 1	Open drain, 150mA max
8	GND	Power and digital ground

Table 2. Cable Color Definition

Definition	Color	Cables	Color	Definition
MIC +	Red		Blue	OUT 2
IN	Green		White	ACC
SOS IN	Red		Yellow	OUT 1
PWR	Red		Black	GND

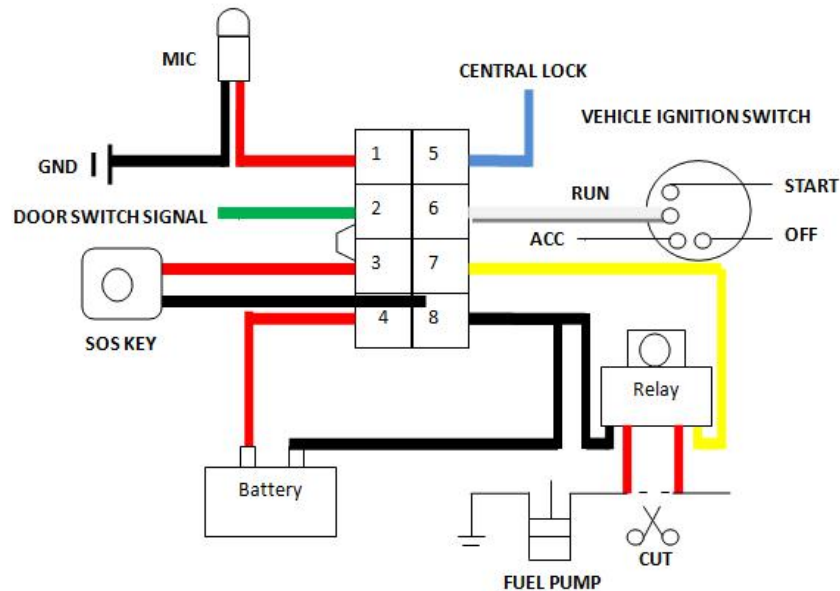
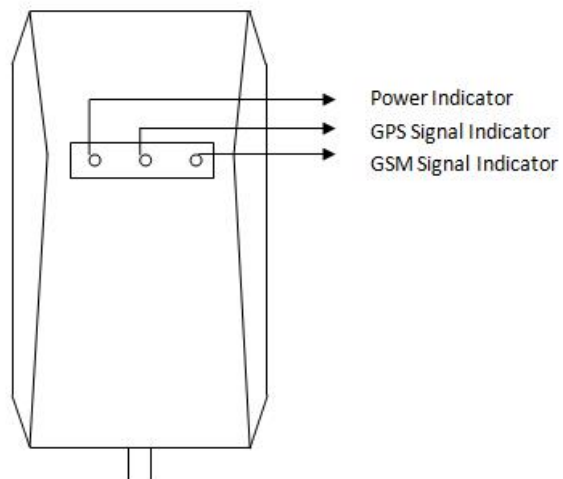


Figure 2. The 8 PIN connections

3. Status LED Definition



3.1 RED LED (Power Indicator)

LED Status	Meaning
Always keep on	Working normally
Continuously in dark state	Power off/Internal fault

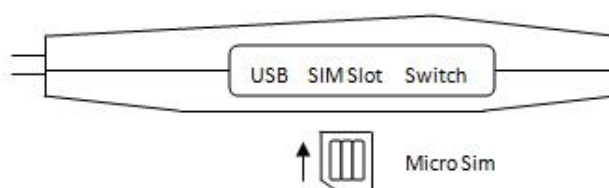
3.2 BLUE LED (GPS Singal Indicator)

LED Status	Meaning
Fast Flashing (bright 0.1s dark 2.9s)	GPS located
Slow flashing(bright 1s dark 2s)	Searching GPS signal
Continuously in dark state	Power off/Internal fault

3.3 GREEN LED (GSM Singal Indicator)

LED Status	Meaning
Fast Flashing (bright 0.1s dark 2s)	GSM working
Slow flashing(bright 1s dark 2s)	Start GSM
Continuously in dark state	Power off/Internal fault
Always keep on	Under Call (voice monitoring)

4. USB, SIM Slot & Switch



5. Method of installation

5.1. Preparation before installation

5.1.1 Open the packing box to check whether the type of device is correct and whether the accessories are included, or else please contact your distributor.

5.1.2 Choose SIM card: each device needs to insert a GSM SIM card.

Please refer to the distributor's suggestions to choose the SIM card.

5.1.3 Installing SIM card into the tracker from SIM slot at the side (do not insert the SIM card backwards).

Note:

Power off before installing or removing the SIM card

The SIM card should have GPRS credit

Ensure the SIM card is able to send and receive SMS

5.2 Installation

The device installation is conseal. Please refer installation to an auto electrical contractor.

NOTE:

5.2.1 To prevent theft of the device, it should be installed as covertly as possible. Covertly installation is suggested.

5.2.2 Avoid placing the device close to higher power electrical devices, such as reversing radar,

anti-theft device or other vehicle communication equipment;

5.2.3 The device should be fixed into position with cable ties or wide double-side tape.

5.2.4 The device has built-in GSM antenna and GPS antenna. During installation, please make sure the receiving side is upwards sky without metal object above the device to interfere with GPS reception. The following places are suggested for installation:

- shelter in the decorated board below the front windshield;
- shelter around the front instrument panel (non-metallic material face);
- in the decorated board below back windshield;
- the distance between the installation position of this product and the human body is greater than 20cm.

6. Web based tracking online activation

The GPRS web based tracking platform allows real time tracking with the latest Google maps.

6.1 Set IP and PORT

SMS command format :

ss,APN,APN's username,APN's password,IP,PORT,Device ID,Password

E.g.:

ss,quicklink.claro.co.ec,user,pass,158.69.119.37,4099,13800000001,123456

Notes:

If no username and password, please leave it blank without space,

e.g: ss,quicklink.claro.co.ec,,,158.69.119.37,4099,13800000001,123456

the device ID on the platform should be the 11digital number ,start from the serial number assigned by supplier

7. SMS Configuration

Function	Command	Notes
Change Password	pwd,old_pwd,new_pwd Eg : pwd,123456,666666	Default password is 123456 Replied SMS: Config OK=Set successfully Config failed=fail to set
Set SOS Alert Numbers	service,phone1,phone2,phone3,password Eg: service ,13512345001,13512345002,13512345003,123456,	If configured OK, when press SOS button, the device will sent notification SMS to the preset 3 numbers. SOS alert content: Your vehicle triggered emergency alarm, now the location of the car is http://maps.google.com/maps?q=Latitude, longitude
Delete SOS Alert Numbers	service, , , ,password If you want to delete any one of the three numbers, please leave it in command blank without space. Eg: (Delete All) service, , , ,123456	You can choose to delete some or all the SOS alert numbers.
Checking Parameters	param,password Eg: param,123456	Replied SMS: TCP, APN, APN user name, APN password, port, system number

		if the password is wrong, it will reply: Get status failed.
Remotely Restart	Restart,password Eg: restart,123456	The device will restart after 1min after receiving this command,
Recover Default Password	ResetPwd Eg: resetpwd	Password will be recovered to default password if set successfully.
Check GPS Location	tgoogle,password Eg: tgoogle,123456	The device will reply with Google link after receiving the command
Disable Engine	disable eng, password Eg: disable eng,123456	The device will disable the engine of the car after receiving the command in the condition that the speed of car is under 15km/h
Enable Engine	enable eng,password Eg: enable eng,123456	The device will enable the engine after receiving the command
Door Open	door,open,password Eg: door,open,123456	The device will send signal to control the output 2
Set Output Signal Duration	signal,x,password (x=ms) Eg: signal,500,123456	The output 2's signal will last as per the set duration

Voice Monitoring	tap,password Eg: tap,123456	The device will call back to the phone number who sent the command
Enable Defence	arm,password Eg: arm,123456	Config OK=Set successfully Config failed=fail to set If defence enabled, you are able to get illegal start alarm when ignition is on.
Disable Defence	disarm,password Eg: disarm,123456	Config OK=Set successfully Config failed=fail to set
Online Configuration	ss,APN,APN's username,APN's password,IP,PORT,Device ID>Password Eg: ss,quicklink.claro.co.ec,,,158.69.119.37,4099,13800000001,123456	Config OK=Set successfully Config failed=fail to set
Check Stauts	status,password Eg: status,123456	Replied SMS: GSM=31 GPRS=1 GPS=10 ACC=N0 SPEED=120 ACCON=30S ACCOFF=120S VCC=12V IMEI=356823031234501 If the password is worng, it will reply: Get status failed
Check Sevice Number	GetService,password Eg: getservice,123456	The device will reply with the service numbers
Enable Auto Answer Call (Voice Monitoring)	AUDIO-EN,password Eg: audio-en,123456	Config OK=Set successfully Config failed=fail to set
Disable Auto Answer Call	AUDIO-DIS,password Eg: audio-dis,123456	Config OK=Set successfully Config failed=fail to set
Recover to Default Settings	Reset,password Eg:Reset,123456	It will recover the parameters to default information

Set Interval	interval,x1,x2,password Eg: interval,30,100,123456 30=Ignition ON 100=Ignition OFF	X1=Ignition ON interval (second), X2=Ignition OFF interval (second).
Enable/Disable Harsh Acceleration Alarm	A Harsh Accel,ON/OFF,password Eg: A Harsh Accel,ON,123456 A Harsh Accel,OFF,123456	The device will enable/disable the harsh acceleration alarm
Enable/Disable Harsh Braking Alarm	A Harsh Brake,ON/OFF,password Eg: A Harsh Brake,ON,123456 A Harsh Brake,OFF,123456	The device will enable/disable the harsh braking alarm
Set Speed Chaning Range Threshold of Harsh Behaviour	speed,x,password (x=0-250km/h) Eg: Speed,10,123456	When device enabled harsh acceleration alarm or harsh braking alarm, it will trigger alarm when the speed changing range of harsh behaviours over the set value
Enable sleep mode	sleep enable,password Eg: sleep enable,123456	Config OK=Set successfully It's for save battery purpose
Diabie sleep mode	sleep disable,password Eg: sleep disable,123456	Config OK=Set successfully
Enable Limit for Voice monitoring,	LisLimit,ON,password Eg: LisLimit,ON,123456	It will limit the voice monitoring phone number within the preset SOS alert number
Disable Limit for Voice monitoring	LisLimit,OFF,password Eg: LisLimit,OFF,123456	Default setting

8. Trouble shooting

8.1 After installing it in the first time, if device cannot get connected with platform server, at this time it is "logged off" status in platform.

Follow the instructions one by one as below:

8.1.1 Call the device to see what happens.

If ring: go to the next step.

If not ring:

- Check whether the SIM card is installed correctly or not. Check whether the connection of power-line is correct or not . (Details: If the users are testing the device in office or at home, they have to connect device with 12V DC external power supply. If it is tested in the car, make sure the installer connect all the cable correctly.)
- Check the LEDs' status. In normal working status, the red LED is in bright flash 0.1s dark 2s, yellow GSM LED bright flash 0.1s dark 2s and blue GPS LED bright flash 0.1s dark 2s
- Check whether the vehicle is in no GSM area, such as basement;

8.1.2 Check whether the device reply after sending SMS command.

If reply:

- a. Check whether the APN is correct or not,
- b. Whether the port is correct or not,
- c. check whether the SIM card support GPRS.
- d. check the IMEI number is correct or not

If not reply: check the SMS command format, make sure it is correct.

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

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