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FL-2000G User's Manual

----For Fleets Management

Statement

Thanks for your selection of FL-2000G Fleets vehicle tracking Terminal from C2STEK

Pls read this user's guide carefully and make sure you will use the original accessories provided by C2STEK in avoid of any unexpected damage for this product. If you are not using this product with the right procedure and method or not using original accessories to make damage for this product, C2STEK will not be responsible for your loss.

FCC Statement

This equipment complies with Part 15 of FCC RF Rules. Operation is subject to the following two conditions:

- 1) This device may not cause interference and
- 2) This device must accept any interference, including interference that may cause undesired operation if the device.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment

- 1) This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- 2) This equipment complied with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Caution!

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operated the equipment.

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Chapter 1 Product Introduction

FL-2000G is a well-defined GPS/GPRS/SMS tracking device for fleets management Application. It featured with small size, easy installation and satisfied most features expectations from solution integrators. It is equipped with 32Channel Industrial High sensitivity GPS module and State-of-art GSM/GPRS module.FL-2000G support both SMS and GPRS communication modes for all functions. FL-2000G has user-configuration software with Serial cable to adjust the device exactly to your needs; those parameters configuration is possible remotely or on-site.

FL-2000G is with powerful expanded capability for all kinds of Accessories, like Camera for pictures, Temperature sensor, moving Sensor, Fuel Sensors, LED Ads Board, LCD Dispatch Display.

Its standard features as below:

- Real-time Position Enquiry
- Remote Listening-in monitoring (Authorized)
- Periodically position report with time interval adjustable
- GSM/GPRS null zone Events/Position history data storage(Memory size for 40000 Data records)
- ACC ON/Off Position reporting
- GEO Fence Setup
- Over-speed Alert
- Over-time Alert
- Remote Vehicle Engine Stop enable and disable
- Remote GPRS communication Parameters Setting
- Emergency Help Call
- Hijack SOS Alert
- Automatically pickup for calls from Control Center
- Towering alarm
- Driver Idle Alarm

Expanded Optional features:

- LCD Dispatch Display
- LED Ads Board for advertisement application
- Fuel Monitoring
- Camera Image take and storage
- Temperature Sensor

1. Product Package

The package of FL-2000G includes following accessories, pls check:

- FL-2000G Mainframe
- GPS and GSM Antenna
- SOS Button
- Microphone
- Audio Speaker
- Wiring Harness
- Immobilizer Relay Harness

2. Advantages

- Compatible with both 12V and 24 Voltage Vehicle
- Low Cost with great and reliable quality
- Handsfree Car telephone Function
- Support SMS and GPRS dual communication modes.
- Powerful expanded function for special application

3. Application Range

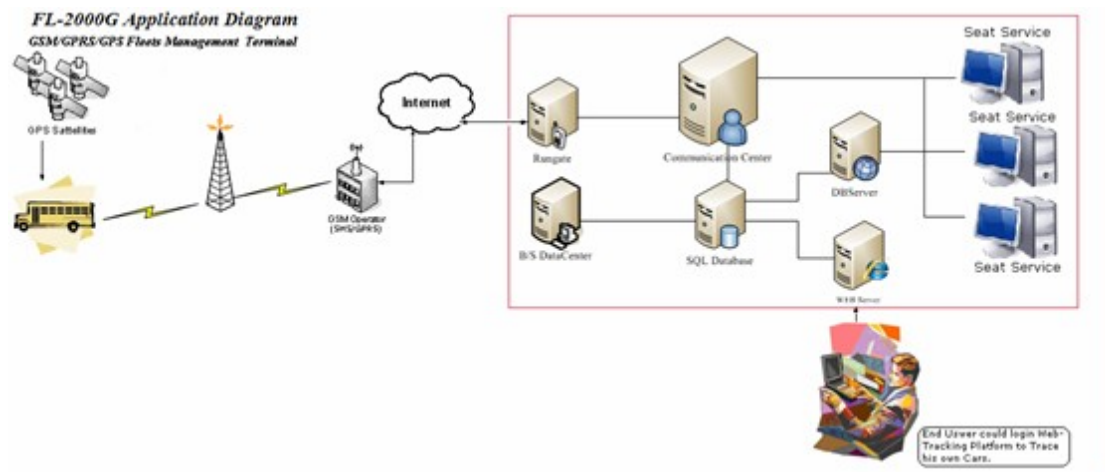
- Company, Groups Cars
- Rental Vehicles, Fleets Vehicles
- Security and Surveillance Vehicles

4. Specification:

Datacommunication			
GSM Module	Huawei		
Frequency	850MHz/1900MHz		
Sensitivity			
Data		Class 8	
	Coding Schemes	CS1-CS4	
SMS	Point-to-Point Mobile Originated & Mobile Terminated		
	Cell Broadcast		
Power Consumption	0.5W(sleep)-Max 6W		
GPS Receiver			
GPS Receiver	Ublox		
Frequency	L1 1.57442Ghz		
Acquisition Time	TTFF	Cold Start	34S
		Warm Start	33S
		Hot Start	<3.5S
		Reacquisition	<1S
Position Accuracy	2.5-5 Meters (50% probable)		
	10 Meters (95% probable)		
Sensitivity	Tracking		-158dBm
	Acquisition&Reacquisition		-148dBm
	Cold Starts		-142dBm
Timing Accuracy	RMS	50ns	
	99%	<100ns	
	Granularity	43ns	
Operational Limits	Altitude		18000Meters
	Velocity		515m/S
	One of the limits maybe exceeded but not both		
Antenna	Active Patch		
Physical			

Mainframe	Size	MM
	Weight	800g
Environmental		
Enclosure	Aluminum with silver anodized finish	
Operating Temperature	-20°C -75°C	

5. System Application Diagram



Chapter 2 Operation Guide

1. Outer Structure



Indicator

1	Work Indicator	Power On: Solid on Login GPRS: blink slowly
2	GPS Indicator	Not-Positioned: Indicator is Off Positioned with valid GPS signal: Solid On
3	GSM Indicator	NO GSM Signal: Off Has GSM Signal: Blink In GPRS: Blink fast

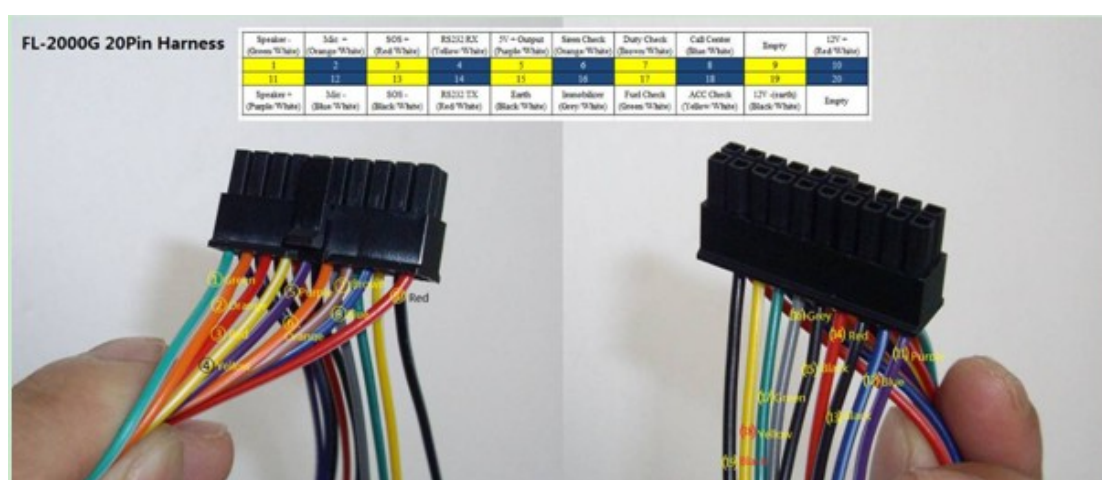
Mainframe and Accessories



2. Power Supply

FL-2000G works with two power supply mode: External Power Supply from car battery and Internal Backup Battery. Device normally works in external power supply mode. When External power supply was disconnected, the device will automatically switch to work in internal battery mode and send "main Power failure alert to expected targets. When external power supply connection well and ACC ON, device will keep charge interval rechargeable lithium battery. When charge full, it will stop charge.

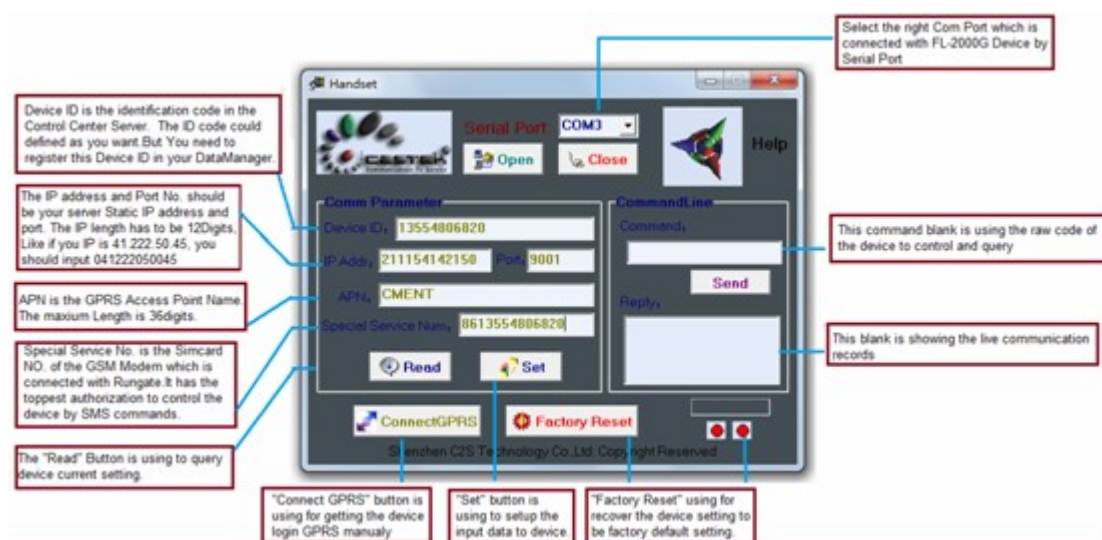
3. Wiring Diagram



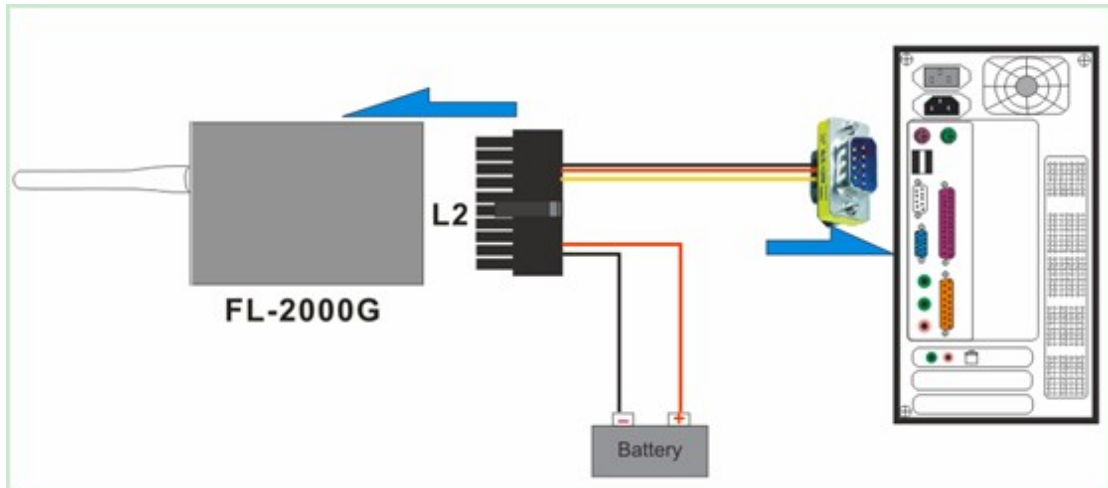
4. SOS Button Usage

When vehicle is in Hijack or other emergency situation, the driver could press the SOS button for help. After the SOS is pressed, device will send alert to control center.

5. Using VHandset to setup Device Parameter:



For more details, pls refer to Vhandset Tool Help file.
Device connecting with PC Serial Port Diagram:



6. How to Register Device in Server:

Pls refer to C2STek Data Manager User's manual.

Chapter 3 Main Features

By this chapter, you could get a full understand with FL-2000G for full functionality and features.

1. Vehicle Positioning

In GSM/GPS network coverage area, the Control Center could enquiry the vehicle real time GPS position information at any time. When the vehicle terminal received the position inquiry commands which was sent from Control Center, the vehicle terminal will report it's current GPS location information and vehicle status information to Control Center.

The vehicle terminal has two communication channels to report the location info to Control Center: SMS and GPRS. In system real practicing and product application, GPRS always take the priority for communication when both SMS and GPRS existed. GPRS is the main communication method for data sending, and SMS is the assistant way. When the vehicle terminal made the GPRS connection with central control center gateway successfully, it will automatically check the network connection status periodically. If the GPRS is not online, this communication will be finished by SMS. And the vehicle terminal will process connecting operation periodically till to make it be connected.

2. Real Time Tracking Data Report

The control center could send continuous tracking commands to vehicle terminal. And the device will keep sending real time GPS position data to control center with appointed time interval.

3. Continuous Position Data Report

If the central control center wants to monitor the vehicles continuously when vehicle is running, the CONTROL CENTER could switch on the timing position report feature remotely. This timing report function switch on/off and timing gap setup only could be processed by CONTROL CENTER. The vehicle terminal just response and proceed those commands.

After setup, the vehicle terminal will report GPS location information and vehicle status according to the preset time gap to CONTROL CENTER. In null GSM/GPRS zone, the vehicle terminal will store that location info on the built-in memory. When the GPRS or GSM signal is available, the vehicle terminal will transmit those history data to CONTROL CENTER.

4. Immobilizer Enable/Disable

In GSM/GPRS coverage area, the control Center could send Commands to immobilize the vehicle for running and release the immobilization.

5. GEO Fencing

This function allows the system to restrict the vehicle terminal running at a certain area. The restricted area could be setup as a quadrilateral area. If the vehicle terminal runs out of the setting area, the vehicle terminal will send a alerting to CONTROL CENTER in real time.

6. Over Speed Alert

The vehicle device allows the CONTROL CENTER to setup over-speed management. By switching this function on, if the vehicle driving speed over to the preset speed restriction, the vehicle terminal will send an over-speed alert to CONTROL CENTER.

7. Car Battery Voltage Lower Alert/Power Failure Alert

The device will check vehicle battery periodically if it's in status of low voltage output or no voltage output. If the output is too low or the device cannot get power supply from the car battery, it will send "Battery low output" or "Power Failure" alert to control center..

8. SOS Emergency Help

When the vehicle are in Hijack situation, the driver could jam on the panic button and the vehicle terminal will quietly sending this alarming alert together with vehicle GPS location information to Central Control Center. The Control Center could get into listening-in mode and monitoring what's going on inside the car. The Control Center could do helps:

- a) Call the policemen for help
- b) Remote stop the vehicle engine/Oil supply

9. Voice Monitoring

If the device is triggered with alarm events, control center to send command to device asking for voice monitoring. The device will call back appointed Telephone No. and get into voice monitoring mode automatically.

10. Central Control Center Remote Control Support

The central control center could remotely sending commands to device realizing remote control for the device like device reboot, immobilization, change device parameters.

11. ACC On/Off Report

After switch on this function, the vehicle terminal will report one GPS location info to CONTROL CENTER every time when Vehicle ACC ON/Off.

12. Travelling History storage in device memory

If you need to store vehicle running GPS data on memory and output them when you need it, you can switch on this function from CONTROL CENTER. After switch on this function, the vehicle terminal will store the GPS location data according to preset time gap in memory, the memory size capability is to store more than 10,000Points. On request by CONTROL CENTER, the vehicle terminal will send those history data to CONTROL CENTER.

13. Central Control Center Call in and Device auto pickup function

FL-2000G has dual audio talking function available. But it only support authorized to call the device and put through the phone talking.

FL-2000G allow to setup one Call center Service No.

you can setup it via Raw source code command to do this setting by Vhandset:

Command:4*X...X#

Exmpale: 4*008675583986972#

Call Service No. Max. Length 16Numbers.

*4# Inquiry SMS Service NO.

14. Vehicle Towing Alert

For the towing alert means when the vehicle is travelling without Ignition on for 1Minute, and the device will send alarms to control center.

15. Driver Idle Behavior Alert:

For this function means if the driver with Ignition on and vehicle in not moving status for 5minutes up. Then the device will send Driver idle alert to control center.

Chapter 4 Installation, Maintenance and Technical Support

1) Installation and Repair

Our products installation, repairing should be proceed by our well trained professional technical workers or by our authorized company to finish. If not by our agree, we suggest not to uninstall or repairing the products in avoid of Warranty Service invalidation

2) Water Protection

FL-2000G is designed for Splash water protection with IP5 standard of dust protection.

3) Technical Support

If you have any technical questions or you have problem in using our product, pls feel free to contact us for help.