

IDD-213E User Manual

(Rev. 1.3)

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1. Introduction

IDD-213E is an intelligent on-board diagnostic device with OBD II and SAE J1939/J1708 (Heavy duty) compliant, it features plug-and-play technology, could read diagnostic info from vehicle ECU and capture location data with built-in GPS, then send them to backend server for real-time remote diagnostic and tracking purpose.

Packing List

Parts name		Quantity	Note
IDD-213E OBD Dongle		1	●
Installation Guide		1	●
USB Configuration Cable		1	○
OBD II extension cable		1	○
9-Pin deutsch wiring harness		1	○
6-Pin deutsch Wiring harness		1	○
Power cable (including 3A Fuse)		1	○
SOS button		1	○

Note: ● Standard configuration ○ Optional configuration

(Optional accessories will not be included if there is no indication in the order)

2. Specifications

2.1 External Interface

Product appearance as follows:



Standard OBD Connector

Connect to the 16 pin on-board Diagnostic Link Connector (DLC).

Mini USB interface

Connect to PC through USB configuration cable.

SOS button Interface

This is a SOS button interface, to connect the SOS button for emergency, interface type is MMCX.

SIM Card slot

Insert SIM card.

2.2 Status Indicator

Indicator	Color	Status
Power/OBD LED	Red	Blinking (on 0.5s, off 0.5s) - Trying to access OBD system or power off Solid on - Successful OBD communication Solid off - Tracker mode or in sleep
Cellular LED	Orange-red	Fast blinking (on 0.5s, off 0.5s) - No SIM card or network searching Slow blinking (on 0.5s, off 2.5s) - Registered network Solid on - Logged into the server Solid off - Cellular off
GPS LED	Green	Blinking (on 1s, off 1s) - GPS signal is good Solid on - Searching for GPS signal Solid off - GPS off
Buzzer	Beep	One beep - Power on Two beeps - Successful OBD communication Three beeps - Successful log in Four beeps - Trip end and stop OBD communication Five beeps - Power off Six beeps - Fail to access OBD system Five beeps (short beep) - Alarm indication

2.3 Technical Parameters

Mechanical	Dimension	63mm (L) x 48mm (W) x 28mm (H)
	Weight	50g
Interface		OBD interface: 16 pin standard OBD II Configuration interface: Mini USB SOS button interface: MMCX SIM card interface: Push-Push Type
Storage		2MB FLASH, can store up to 24000 GPS data
Data Transmission		Packet data (GPRS or HSPA) and SMS
Positioning Mode		GPS
OBD Protocol		SAE J1850 PWM SAE J1850 VPW ISO 9141-2 ISO 14230-4 ISO 15765-4 SAE J1939 (Heavy duty) SAE J1587/J1708 (Heavy duty)
Power	Working Voltage	9-36VDC
	Working Current	Average Current: <150mA@13.8/27.6VDC Max. Current: <200mA@13.8/27.6VDC Sleep Current: <10mA@12/24VDC
	Internal Battery	3.7V/160mA Lithium battery
3-axis Accelerometer		+/-2g、 +/-4g、 +/-8g、 +/-16g
GPS		Channels: 48 Sensitivity: -163dBm Accuracy: 5m CEP Time to first fix: Cold start: <35s (typ.) Hot start: <1s (typ.)
Cellular		Frequency: GSM/GPRS/EDGE: 900/1800MHz UMTS/HSDPA: 900/2100MHz Network protocol: Embedded TCP/IP stack

		Sensitivity: -111dBm@UMTS -109dBm@GSM 900MHz -110dBm@GSM 1800MHz Output power: Class 4 (2W, 33dBm)@GSM 900MHz Class 1 (1W, 30dBm)@GSM 1800MHz Class 3 (0.25W, 24dBm)@UMTS Class E2 (0.5W, 27dBm)@EDGE 900MHz Class E2 (0.4W, 26dBm)@EDGE 1800MHz Certification: CE, GCF (Europe)
LED Indicator		OBD/Cellular/GPS
Buzzer		System status/Alarm indication
Antenna	Cellular Antenna	Built-in
	GPS Antenna	Built-in
Environment	Working Temperature	-30°C ~ +70°C
	Storage Temperature	-40°C ~ +85°C
	Humidity	5%~95% (no frog)

3. Device Configuration

3.1 PC Tool

Download USB driver and PC Tool at <http://www.sinocastel.com/en/Downloads/>.
Install the USB driver and PC Tool on your PC.

Connect device to PC through USB configuration cable, open the OBD PC Tool, click on “Help->User manual” for configuration reference.

3.2 SMS Instructions

SMS command is mainly for remote maintenance. The message content is text format. Default secret key is the last 6 digits of the device ID. The key can only be changed through PC Tool. SMS format is defined as follows:

3.2.1 Set IP parameters

Send SMS `*SecretKey#set gprs#APN,User,Password,IP,Port*`, device will reply `*set gprs#ok*` or `*set gprs#fail*`.

e.g.: `*123456#set gprs#cmnet,,113.98.241.66,11088*`

3.2.2 Read IP parameters

Send SMS `*SecretKey#get gprs#*`, device will reply `*get gprs#APN,User,Password, IP,Port*`.

e.g.: `*123456#get gprs#*`

3.2.3 Set domain parameters

Send SMS `*SecretKey#set domain #APN,User,Password,IP,Port*`, device will reply `*set domain#ok*` or `*set domain#fail*`.

e.g.: `*123456#set domain# cmnet,,obd.livetelematics.com,11088*`

3.2.4 Read domain parameters

Send SMS `*SecretKey#get domain#*`, device will reply `*get domain#APN,User, Password,domain,Port*`.

e.g.: `*123456#get domain#*`

3.2.5 Get current location

Send SMS *SecretKey#position#*, device will reply

position#http://maps.google.com/?q=latitude,longitude.

e.g.: *123456#position#*http://maps.google.com/?q=22.536934,114.021425*

3.2.6 Set working mode

Send SMS *SecretKey #set workmode#mode*, device will reply

set workmode#ok/fail.

mode = passenger 、 heavyduty 或 tracker

e.g.: *123456#set workmode#tracker*

3.2.7 Read working mode

Send SMS *SecretKey #get workmode#*, device will reply

get workmode#mode.

mode = passenger 、 heavyduty 或 tracker

e.g.: *123456#get workmode#*

4. Installation Instruction

4.1 SIM Card Installation

Remove the SIM card cover, insert the SIM card into the device and press gently, and then insert the SIM card cover back.

4.1.1 Remove the SIM card cover



4.1.2 Insert the SIM card into the device



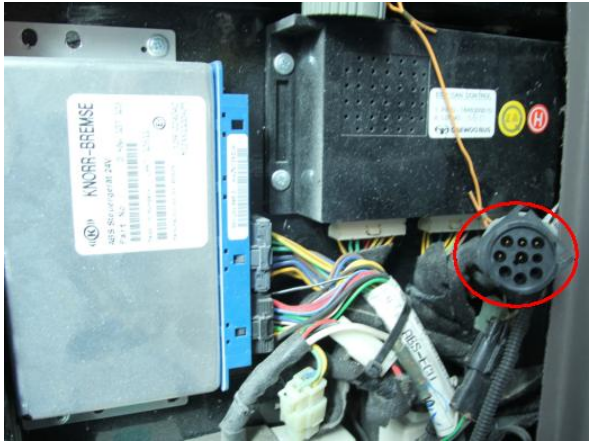
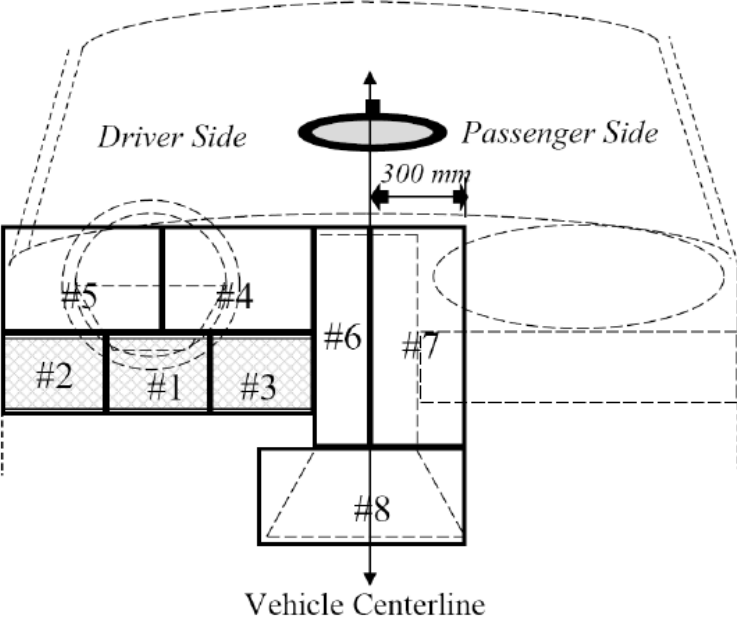
4.1.3 Insert the SIM cover



Note: There is a backup battery in the device, please make sure all lights are off before inserting or removing SIM card.

4.2 OBD Port

In general, the OBD port is located in the driver or passenger cabin, from the edge of dashboard on driver side to the border of 300mm. It is easy to touch by sitting in the driver's seat; the preferred location is within the area from steering post to the vehicle centerline.



4.3 Device Installation

Before installing the device, please make sure device has been configured with necessary parameters including network parameters and working mode.

Park the car and make sure engine is off, align the OBD connector of the device with the engine diagnostic port and simply push in place, ensuring the device is secure. There comes one beep indicating device is power on.



If the OBD port cover can not be closed back after device plugged in, please use OBD extension cable and mount the device in proper place.

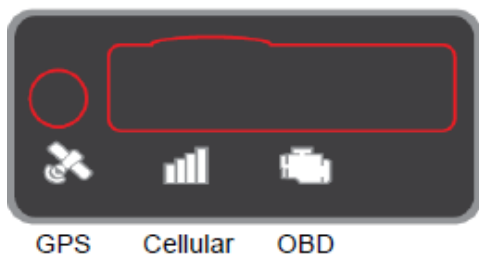


Most heavy duties may need 9-Pin or 6-Pin deutsch wiring harness.



For vehicles do not have an OBD port, please use power cable to connect vehicle battery and configure the device with tracker mode.

Start engine, then device starts OBD communication, acquiring GPS info and Cellular network connection. Various status can be indicated by lights and beeps.



OBD communication: The OBD light change its status to solid on and comes 2 beeps with successful OBD communication.

GPS function: The GPS light becomes blinking indicates that device has got its location.

Cellular connection: The Cellular light change its status to slow blinking indicates registered network, becomes solid on and comes 3 beeps indicate logged into the server.

We advise you to drive the car for at least 10 minutes with the first installation.

Note:

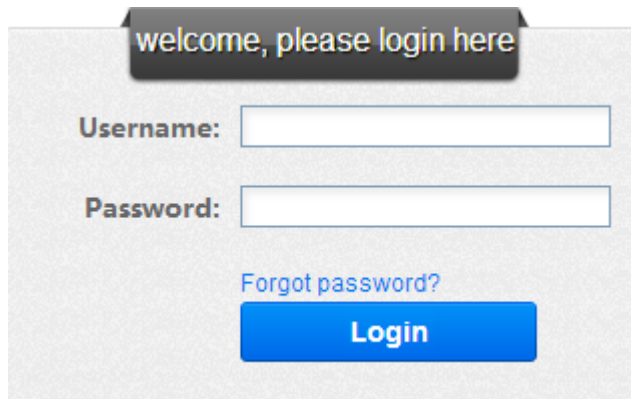
***When working with passenger or heavy duty mode, if OBD light keeps blinking and comes 6 beeps it means that device is not compatible with the vehicle, please change working mode. If it does not work with both passenger and**

heavy duty modes please change to tracker mode. To change working mode: 1) Remove the device, configure with PC Tool and install again. Or, 2) Send SMS ***secretkey#set workmode#mode***, **secretkey** is the last 6 digits of device ID as default, **mode** can be **passenger** or **heavyduty** or **tracker**, device will reboot and work with configured working mode. SMS should be sent within 10 minutes after device plugged in, or it will go into sleep. With tracker mode, diagnostic functions are not provided, device simply gets power from OBD port. When plugged in there comes 6 beeps indicating it is working with tracker mode, if engine keeps off or idle state device will go into sleep after 3 minutes.

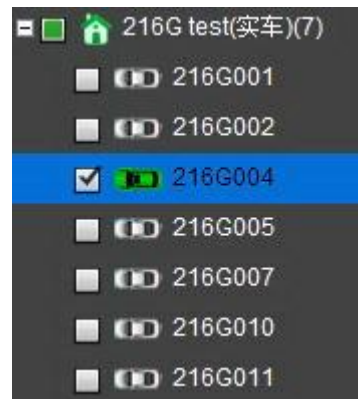
***If GPS does not work**, please use OBD extension cable and mount the device in a proper place to make sure GPS signal can be well received.

***If dashboard lights are abnormal after installation, please remove the device and contact CASTEL technical team.**

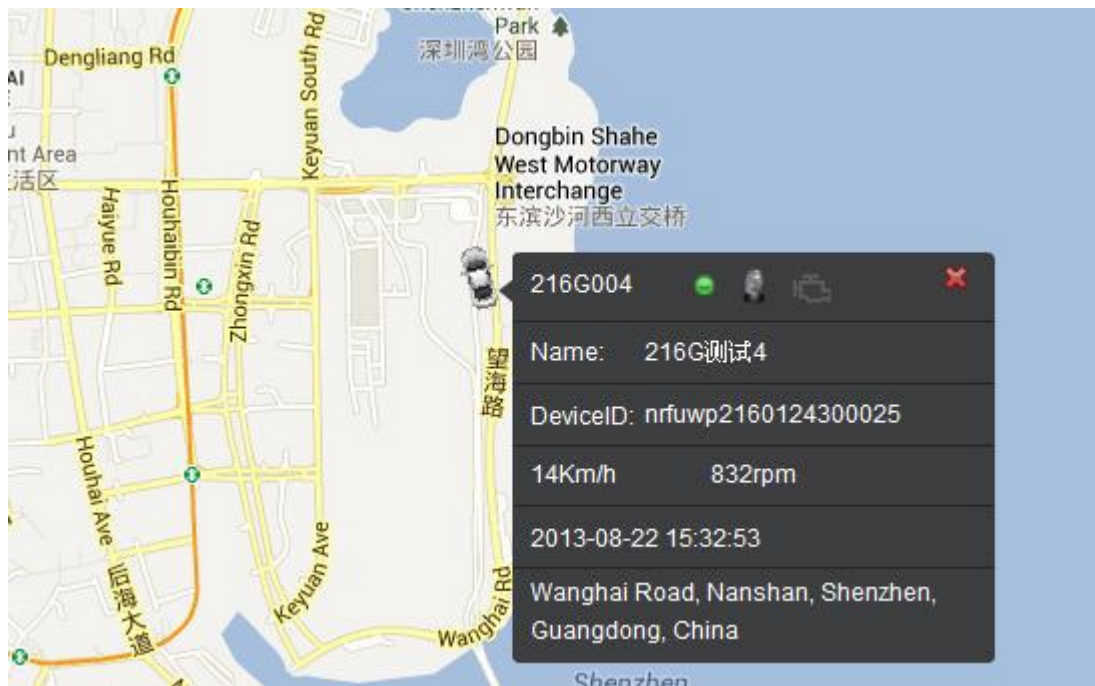
Log into www.livetelematics.com to check real-time monitor and trip reports.





Login



Vehicle monitoring list



Vehicle real time location

	Status	Lic.#	Name	Received time	ACC
 	Online Positioned	216G004	216G测试4	2013-08-22 15:33:53	ON

Vehicle real time status

5. Functions

5.1 OBD Protocols

Device supports all legislated OBD II protocols, it is also SAE J1939 and SAE J1708 compliant.

- SAE J1850-PWM
- SAE J1850-VPW
- ISO 9141-2
- ISO 14230-4 (KWP2000)
- ISO 15765-4 (CAN)
- SAE J1939 (Heavy duty)
- SAE J1587/J1708 (Heavy duty)

5.2 Location Inquiry

Upon receiving location inquiry command from server or via SMS, device reports GPS data immediately.

5.3 Regular GPS Data Reporting by Time Interval

Device reports GPS data according to configured time interval.

5.4 Regular GPS Data Reporting by Distance

Device reports GPS data according to configured distance interval.

5.5 Regular GPS Data Reporting by Heading Change

Device reports GPS data according to configured heading change.

5.6 Regular G-Sensor Data Reporting

Device reports G-Sensor data according to configured time interval.

5.7 Regular Diagnostic Data Reporting

Device is able to read variety of vehicle diagnostic data, including vehicle speed, engine RPM, engine coolant temperature, mass flow air, etc, and reports up to 10 types of diagnostic data according to configured time interval.

5.8 DTCs Reporting

Device is able to read vehicle pending and stored DTCs, and freeze frame data. The backend server analyzes and displays the DTCs for users on time to avoid high repairing cost.

5.9 Cell ID Reporting

Device reports Cell ID every 30 seconds when it loses GPS signal.

5.10 GPS Data Reporting in Sleep Mode

Device reports GPS data according to configured time interval during sleep.

5.11 Data storage/Supplementary Report in Dead zones

When there is no Cellular signal or Cellular signal is poor, GPS information are stored, and reported after signal recovery. Supplementary report can be last for 15 minutes at most after ignition is off.

5.12 Trip Mileage

Device reports driving mileage in each reported message.

5.13 Trip Fuel Consumption

Device reports fuel consumption in each reported message.

5.14 Driving behavior monitoring

Real-time monitor poor driving behavior, including Speeding, High RPM, Hard Acceleration, Hard Brake, Excessive Engine Idle Time

5.15 Alarms and Events Reporting

Alarms and Events are reported when they are triggered or eliminated and there comes short beeps.

- Engine On
- Engine Off
- High RPM (triggered and eliminated)
- High Speed (triggered and eliminated)
- Low Battery Voltage (triggered and eliminated)

- High Engine Coolant Temperature (triggered and eliminated)
- Hard Acceleration
- Hard Brake
- Excessive Engine Idle Time (triggered and eliminated)
- Fatigue Driving (triggered and eliminated)
- Towed
- MIL (On and Off)
- Excessive Exhaust Emission (triggered and eliminated)
- Power On
- Power Off
- Emergency

5.16 Working Mode

Device supports 3 types of working mode: Passenger car, Heavy duty and Tracker mode.

With tracker mode, device does not support diagnostic data, DTCs, trip fuel consumption and some alarms reporting including high RPM, high engine coolant temperature, hard acceleration, hard brake, excessive engine idle time and exhaust emission.

With Tracker mode, device wakes up from sleep on detecting motion state last for 20 seconds, and goes into sleep on detecting static state last for 3 minutes.

5.17 SMS Alert

If user mobile phone numbers are configured, device sends SMS to each user number when alarms are triggered or eliminated.

5.18 Google Map Link

Latitude and longitude in location SMS can be directly linked to Google map.

5.19 Remote Configuration

Users can configure device or update firmware through website:

<http://www.livetelematics.com>.

5.20 SMS Configuration

Users can configure device via SMS commands.

5.21 PC Tool Configuration

Users can configure device or update firmware through PC Tool.