



# DR310

# User Guide

**Doc : v1.0**

**APP : v1.0.0**



# Table of Contents

<b>1. Software and Hardware Set Up .....</b>	<b>3</b>
<b>2. Hardware information .....</b>	<b>5</b>
<b>3. DR310 App .....</b>	<b>6</b>
<b>A. Main function menu .....</b>	<b>8</b>
<b>B. BT connection .....</b>	<b>10</b>
<b>C. Satellite information .....</b>	<b>12</b>
<b>D. Map .....</b>	<b>12</b>
<b>E. GPS signal/NMEA .....</b>	<b>16</b>
<b>F. Car information .....</b>	<b>17</b>
<b>G. Find My Car .....</b>	<b>17</b>
<b>H. Command tab .....</b>	<b>18</b>
<b>I. Log NMEA data(LOG) .....</b>	<b>20</b>
<b>J. About .....</b>	<b>20</b>
<b>K. Offline warning .....</b>	<b>20</b>
<b>L. Exit/ Quit .....</b>	<b>21</b>
<b>4. Document change list .....</b>	<b>23</b>

## 1. Software and Hardware Set Up

- 1). Install DR310 App.
- 2). Turn off your car and plug in B310/ G310 OBD device on your car.
- 3). Fixed B310(-U) / G310(-U) host device on the central console with back sticker.
- 4). Plug in cigarette charger and connect the USB cable.
- 5). Start up ignition on vehicle.
- 6). Check if the **red** light is ready on B310(-U) / G310(-U) host device,  
==> Means B310(-U) / G310(-U) is working now.
- 7). Open DR310 App.
- 8). Pairing and connecting B310(-U) / G310(-U) host device with 'BT Connection' in DR310 App.  
==> Check if the pair and connection are successful.
- 9). Check if the satellite reception is good and position fixed on DR310 App.[ GPS signal/NMEA]
- 10). Open 'Map' in DR310 App to start seamless navigation with B310(-U)'s / G310(-U)'s position data. [Map]

### Note:

**1. App will start to set based on Android OS setup when NOT to set Mock-Location with DR310.**

**2. There is a “DR-RESET” button on the right bottom corner of DR310 App. for USE switching to different vehicle model and moving B310(-U) / G310(-U) device.**

### \* Quick Installation:

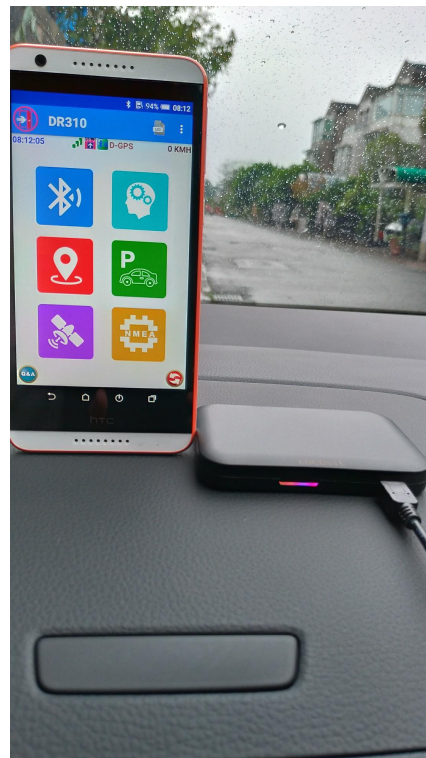
A. Plug in OBD-II device. **(Only for ADR B310 / G310)**



B. Well-placed and fixed the B310(-U) / G310(-U) device.



C. Execute DR310 App.



## 2. Hardware information

### A. Bluetooth device name:

LOCO DR or LOCO BLE DR

### B. OBD-II protocol: (Only for ADR B310 / G310)

#### a. Protocol supports:

ISO15765-4 (CAN)

ISO14230-4 (KWP2000)

ISO9141-2

J1850 VPW

J1850 PWM

**Note: These OBD device(built in ELM327 chip) products are only available when your car supports ECU protocol.**

#### b. Protocols:

- 1) SAE J1850 PWM ( 41.6 KB/sec )
- 2) SAE J1850 VPW ( 10.4 KB/sec )
- 3) ISO9141 - 2 ( 5 baud initialization , 10.4 Kbit/s )
- 4) ISO14230 - 4 KWP ( 5 baud initialization , 10.4 Kbaud )
- 5) ISO14230 - 4 KWP ( fast initialization , 10.4 Kbaud )
- 6) ISO15765 - 4 ( 11-bit 、 500 Kbaud )
- 7) ISO15765 - 4 ( 29-bit 、 500 Kbaud )
- 8) ISO15765 - 4 ( 11-bit 、 250 Kbaud )
- 9) ISO15765 - 4 ( 29-bit 、 250 Kbaud )

### 3. DR310 APP

1). Smartphone requirements:

- \* Android version 4.3 and above.
- \* Supports Bluetooth Low Energy (BLE)

2). Execute DR310 APP:

Execute DR310 APP (Fig.1), connects and pairs your smartphone with B310(-U) / G310(-U) Bluetooth to enter main menu.

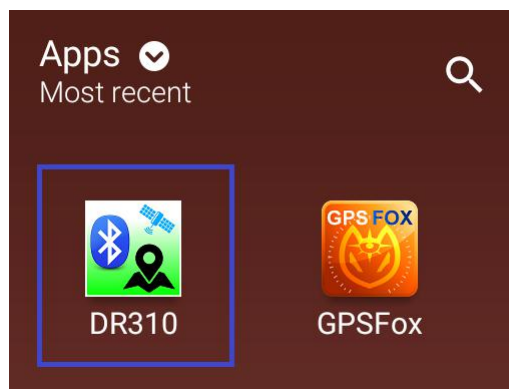








Fig.1 - Execute DR310 App

3). Main menu (Fig.2) :

- a. **BT connection**() : Search, Pair and Connect (Disconnect) Bluetooth.
- b. **Satellite information**() : Display satellite information.
- c. **Map**() : Display current position of B310(-U) / G310(-U) device.
- d. **GPS Signal/NMEA**() : Indicate signal strength by histogram(**Only for sentences with GSA and GSV**) and NMEA messages.
- e. **Car Information** () : Display car speed, RPM, voltage, temperature and fuel information.  
(**Only for ADR B310 / G310**)
- f. **Find My Car**() : Keep and store the last position data of B310(-U) / G310(-U) device.



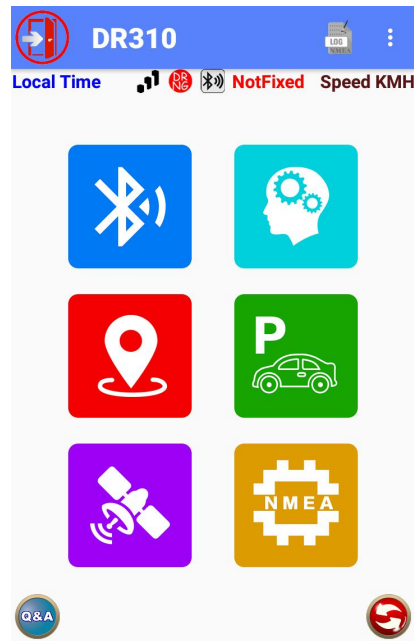


Fig.2 - Main Menu

Please allow B310(-U) / G310(-U) to access your location, photos, media and files and also turn Bluetooth on your smartphone as Fig.3.

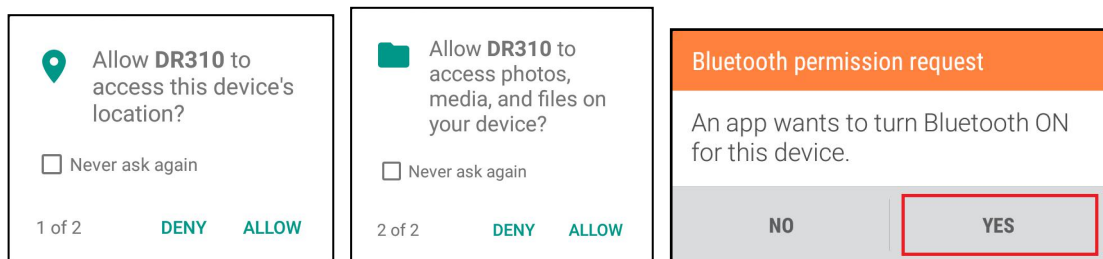


Fig.3 - Authorize and active Bluetooth

**Note: (Only for ADR B310 / G310)**

The OBD device doesn't detect speed from vehicle after connecting with B310/G310 10 seconds later and also displayed the message - 'OBD device cannot access car speed signal.'. (Fig.4). Meanwhile displayed 'this car is not Dead Reckoning (DR) supported.'

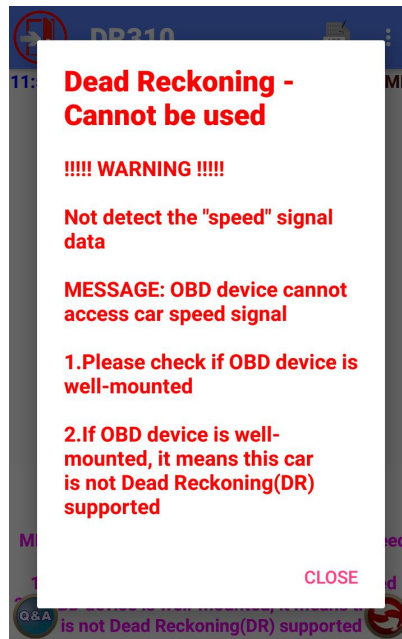


Fig.4 - OBD-II cannot access car speed signal.

#### A. Main menu : (Fig.5)

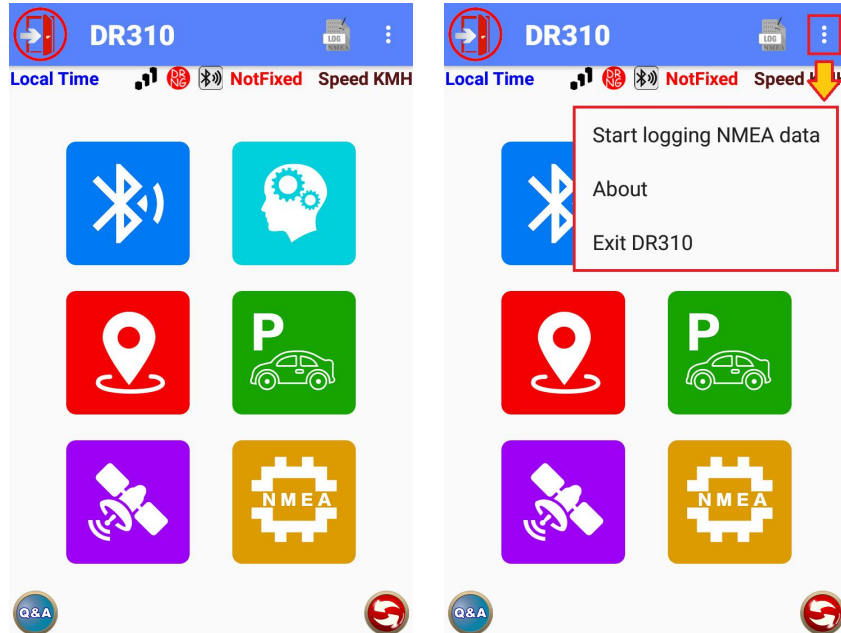


Fig.5 – Main Menu



: Smartphone and B310(-U) / G310(-U) Bluetooth is not connected.



: Smartphone and B310(-U) / G310(-U) Bluetooth is connected.





: Dead Reckoning (DR) calibration is not completed yet. (**DR Disabled**)



: Dead Reckoning (DR) calibration completed. (**DR Enabled**)



: RSSI signal between smart device and B310(-U) / G310(-U) is "0"(not connected).



: RSSI signal between smart device and B310(-U) / G310(-U) is "weak".(far)



: RSSI signal between smart device and B310(-U) / G310(-U) is "medium".  
 (medium)



: RSSI signal between smart device and B310(-U) / G310(-U) is "strong".(close)

**13:55:46** : Change GPS UTC time to local time.

**0 KMH** : GPS speed. (Km/Hr)



: Open "User Guide".



: Clear existing DR calibration data (Fig.6)

**(It's necessary to recalibrate after the data being clear so that DR enabled next time.)**

**Password**

Enter Password '000000' Agree to "Clear Calibration data"

\*\*\* DR Function Must To Re-calibrate \*\*\*

**Enter Password**

000000

---

AGREE TO CLEAR CALIBRATION DATA

CANCEL

Fig.6 - Clear DR calibration data.



、 Start logging NMEA data : NMEA data is not logging, press to start logging.



、 Stop logging NMEA data : NMEA data is logging, press to stop logging.



: Quit DR310 app.

## B. Bluetooth connection



DR310 APP. will start searching BT device once opening, connect '**LOCO DR**' (or '**LOCO BLE DR**') after searching is done (Fig.7.1), it will show below information after successfully connect to B310(-U) / G310(-U). To use this function, you must set the 'Set location-mode (GPS)' to 'Device Only' mode to enter BT window. The setting procedure is to click 'Settings' → 'Device & Privacy' → 'Location' → 'Device Only' (or 'High Accuracy') of the device (Fig.7.2). "Mode", this setting will depend on the vary device and the Android version as difference. Information shown: local time, RSSI signal strength, DR calibration status, Bluetooth connection status, positioning status and current speed. To disconnect B310(-U) / G310(-U) device just need to click the "Disconnect" button from B310(-U) / G310(-U) device. The smart device stops using the location data provided by the B310(-U) / G310(-U) device.

**SEARCHING**

: Start to search for B310(-U) / G310(-U).

**STOP SEARCHING**

: Stop searching for B310(-U) / G310(-U).

**Connect to 310**

: Connect to B310(-U) / G310(-U).

**DISCONNECT**

、 **Disconnect** : Disconnect B310(-U) / G310(-U).

Automatically connect to B310(-U) / G310(-U) (Through BT address saved.) Start to navigate and automatically open the map after connecting.

After you click the 'Connect to 310', the pop-up window will ask you whether save BT address for future using when find no matched BT address with B310(-U) / G310(-U) (Fig.7.3).

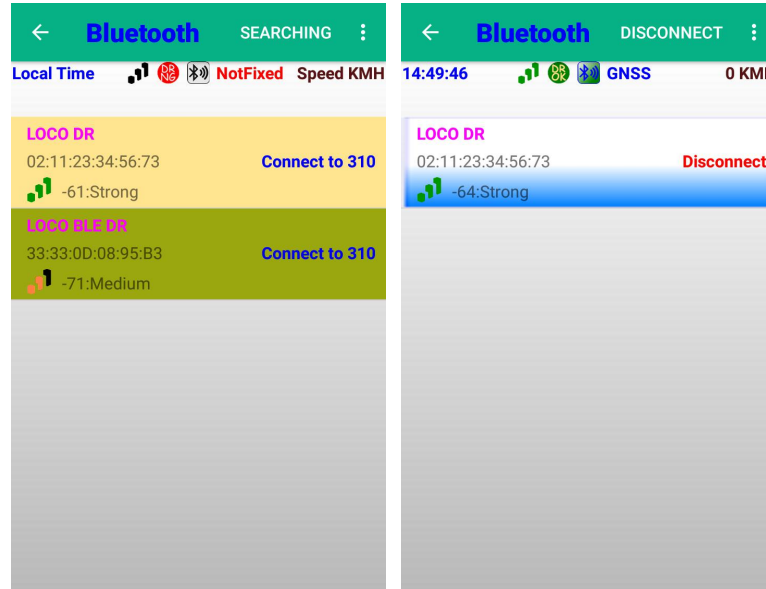


Fig.7.1 - Search and connect to B310(-U) / G310(-U) device.

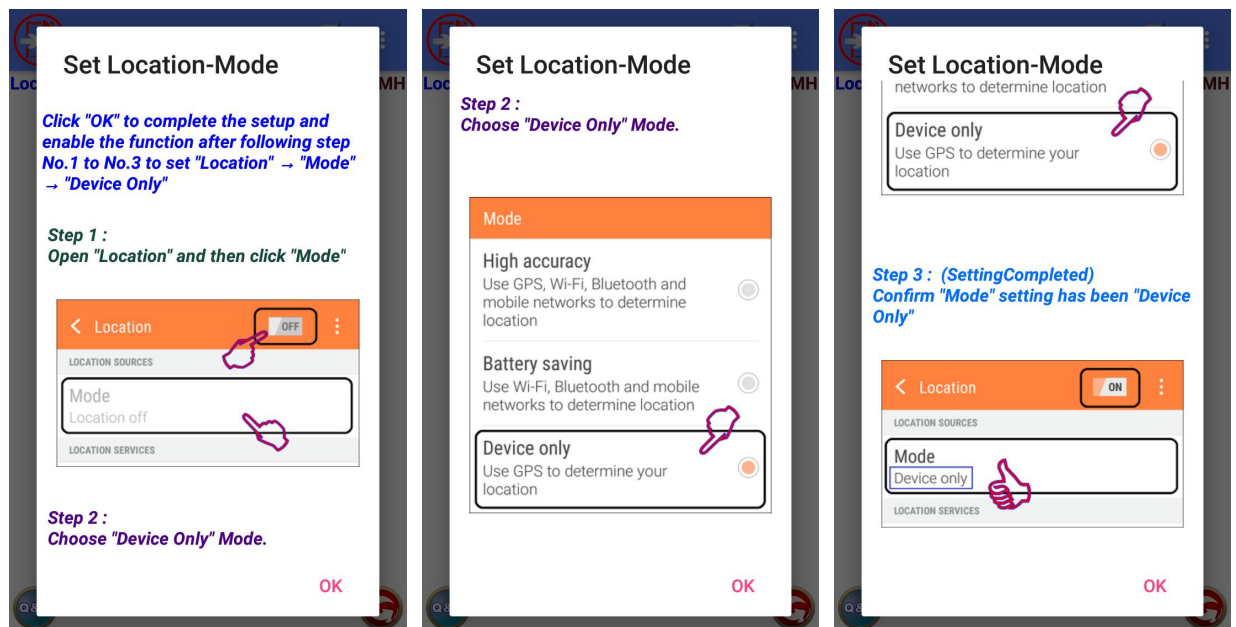
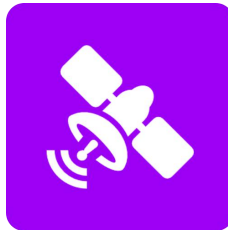


Fig.7.2 - Set 'Device Only' on Set Location-Mode.



Fig.7.3 – Save B310(-U)'s / G310(-U)'s BT address for automated connecting

### C. Satellite information



Text view in GNSS data, signal source, longitude, latitude, altitude, speed, course, satellite in view, satellite in used, UTC time, local time, etc. (Fig.8)

### D. Map



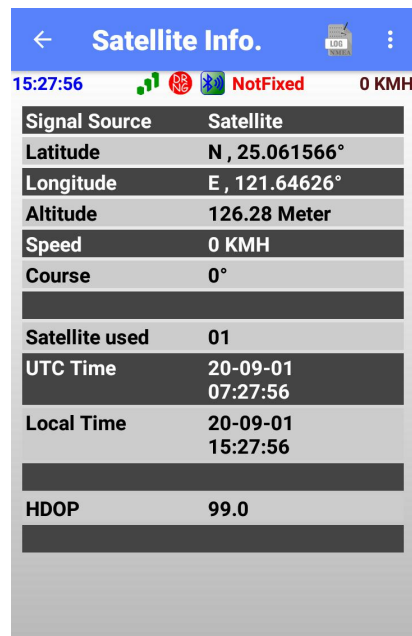
#### **B310(-U) / G310(-U) Device positioning data and navi-map**

1. Successfully connect with B310(-U) / G310(-U) device.
2. Switch the mode of the location (GPS) function to 'Device Only' (or 'High Accuracy').

Steps: click Settings' → 'Device & Privacy' → 'Location' → 'Device Only' (or 'High Accuracy') of the device (Fig.7.2). (The setting might be different due to variant devices / Android ver.)

### 3. Set Mock-Location with DR310 :

If the DR310 is not selected for the first use, the APP will display the "Settings" box (Fig.9.1.1). After following the three setting steps in the box, click "OK" button APP will jump to the "Developer Options" page to give the user the option to 'the select mock location' on set Mock-Location (Fig.9.1.2). Then setting the select mock location APP after setting the DR310, the APP will activate the navigation maps for real-time seamless positioning navigation (Fig.9.2).



Signal Source	Satellite
Latitude	N , 25.061566°
Longitude	E , 121.64626°
Altitude	126.28 Meter
Speed	0 KMH
Course	0°
Satellite used	01
UTC Time	20-09-01 07:27:56
Local Time	20-09-01 15:27:56
HDOP	99.0

Fig.8 - Satellite information

When Smartphone's language of system setting is 'Non Simplified Chinese', Google map will applied for navigation. When set language to 'Simplified Chinese', Amap will be applied for navigation.

#### Note:

Please enter 'About' and find the software info, and click 7 times 'Build Number' or keep clicking it until 'You are now a developer!' displayed. (Fig. 9-3)

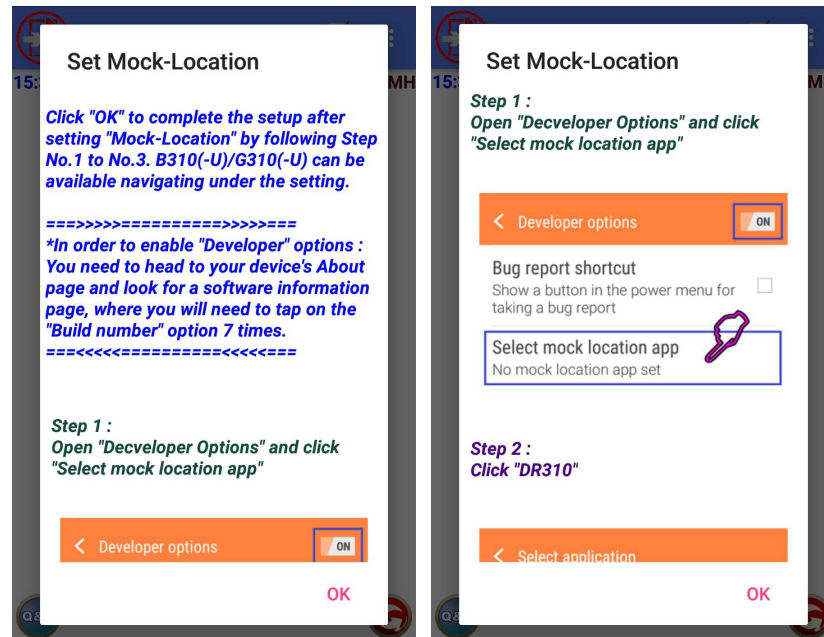


Fig. 9-1-1 – Set 'DR310' as Mock-Location

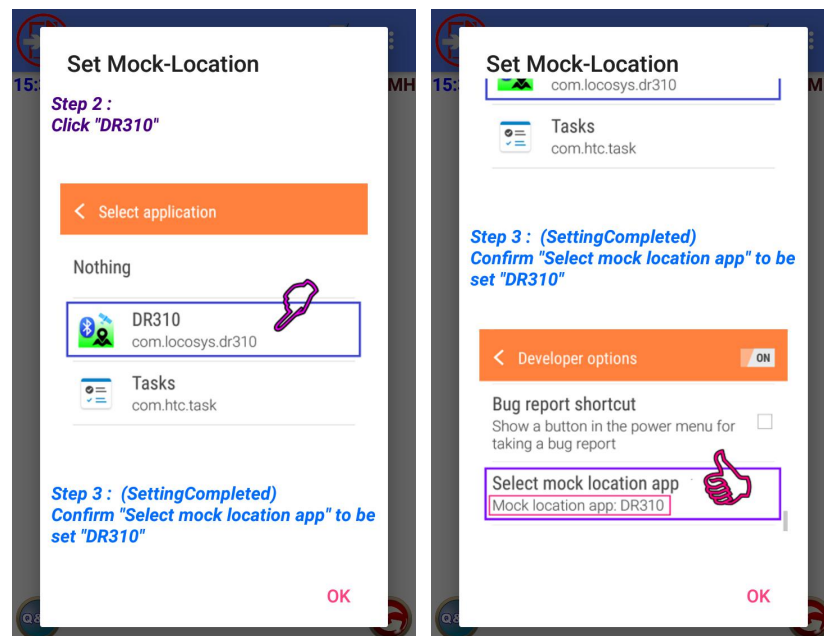


Fig. 9-1-2 - Set 'DR310' as Mock-Location



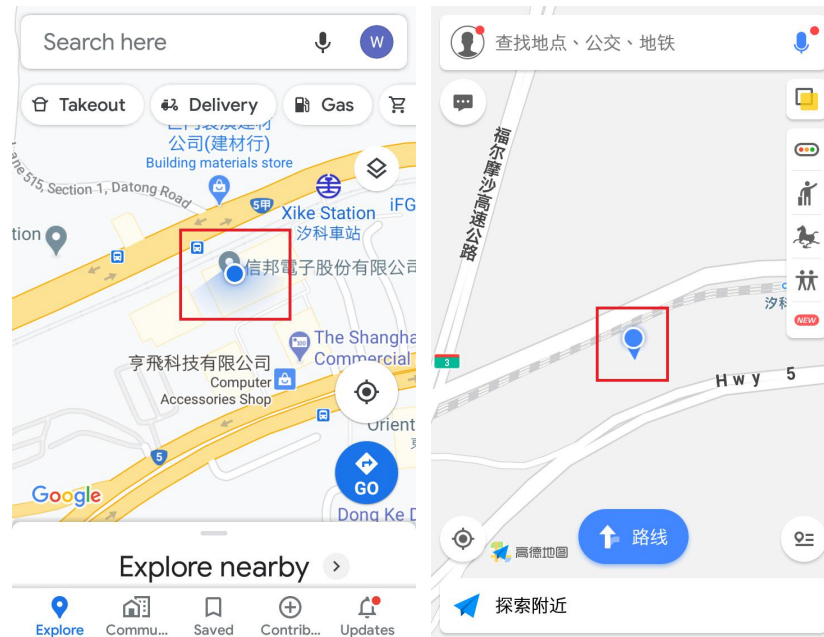


Fig. 9-2 –Google map and Amap.

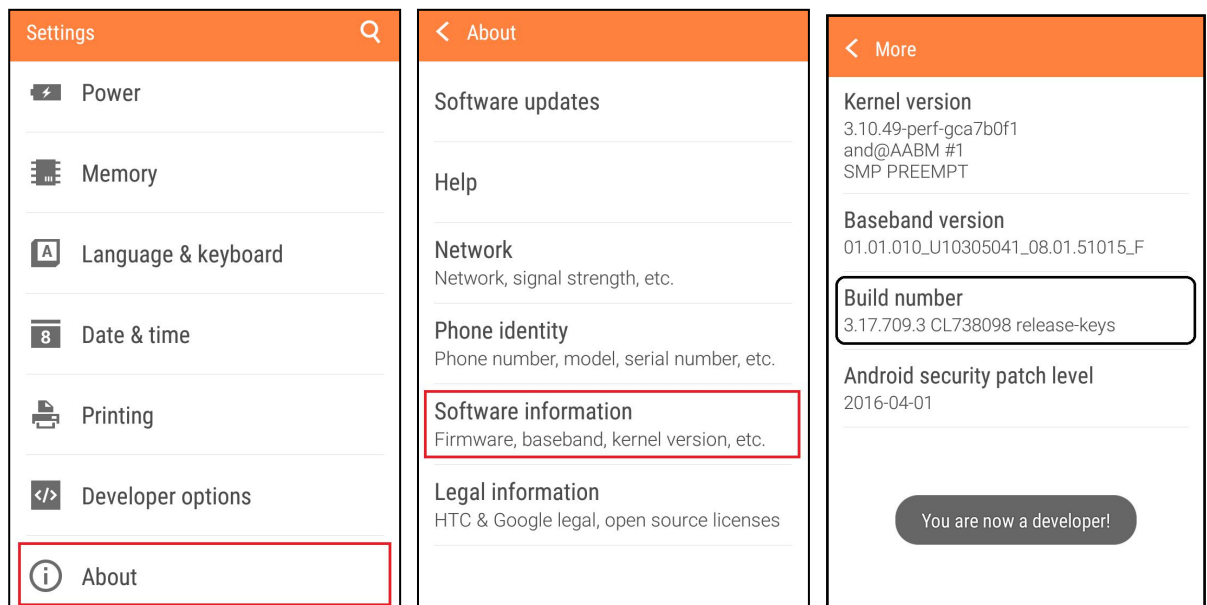


Fig. 9-3 - Developer

### E. Signal/NMEA:



Display current NMEA messages, satellite signal strength in histogram. (Fig.10). Click the histogram to resize.



: Pause NMEA rolling messages.



: Continue NMEA rolling messages.



: 'NO SPEED INPUT' warning OFF.

**(Only for ADR B310 / G310)**



: Click it to resize **(Only for sentences with GSA and GSV)**

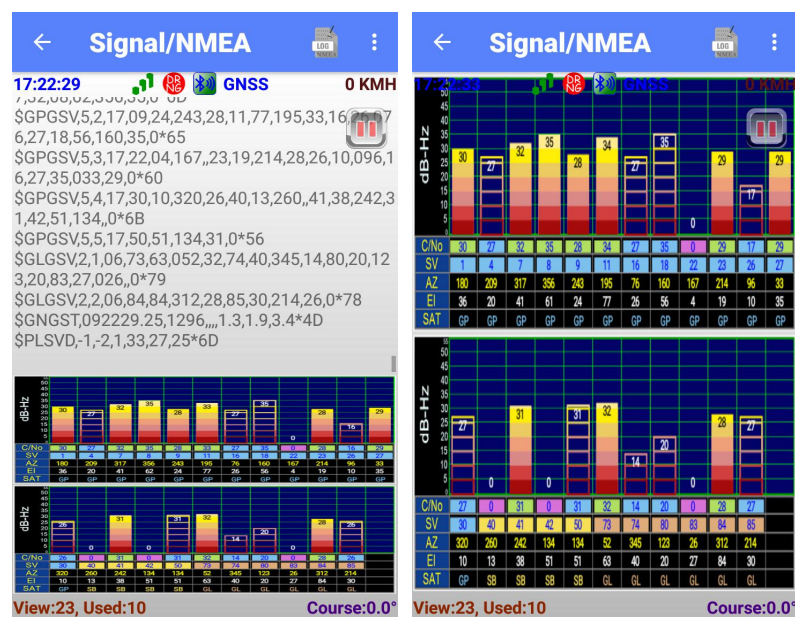


Fig.10 - NMEA and Signal strength

## F. Car information (Only for ADR B310 / G310)



Display OBD-II device got car speed, engine RPM, battery voltage, engine temperature and fuel level. (Fig.11)

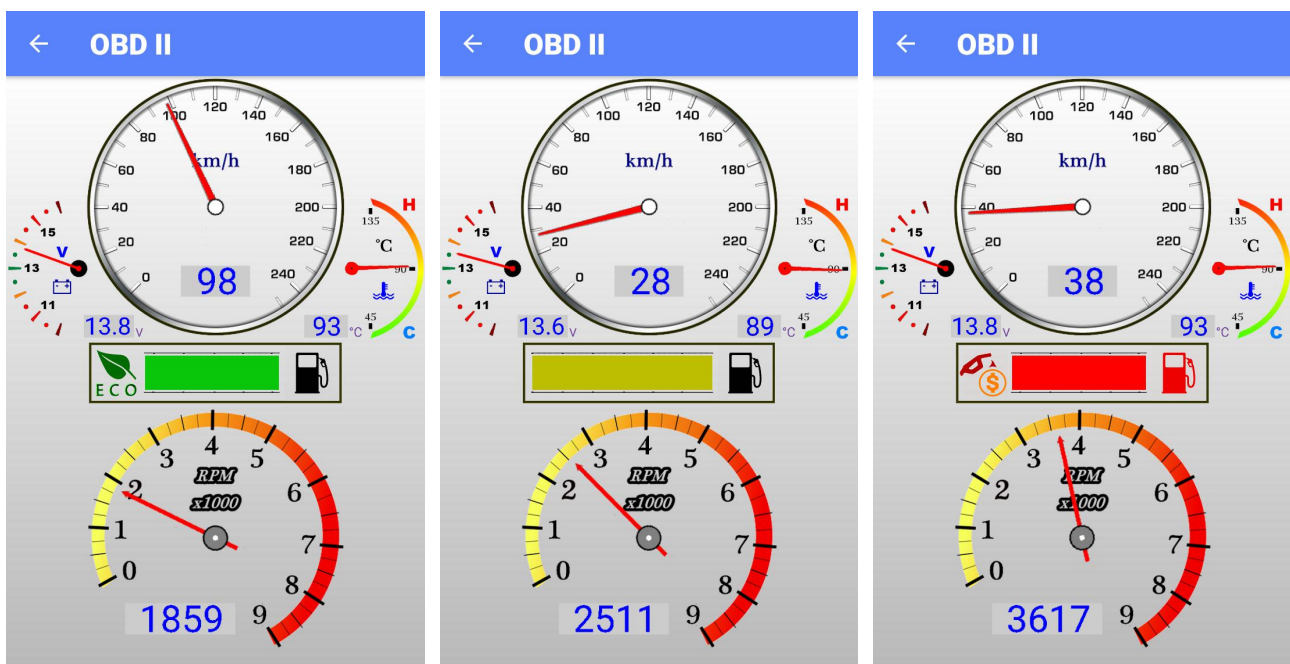


Fig.11 – Car Information

## G. Find My Car:



Display the last position of B310(-U) / G310(-U) device (on vehicle) and current position of your smart device on DR310 APP.

DR310 APP records ‘Last position of B310(-U) / G310(-U) device’ and receives satellite data. When B310(-U) / G310(-U) device disconnect at same time will show position data (longitude, latitude, yy-mm-dd hh:mm:ss) and current position of smart device. (Fig.12.1)

Smart device’s language of system defaults as “Simplified Chinese” will use Amap map for navigation. But “non-Simplified Chinese” will use Google map for navigation.

\* It is also available to use ‘Find My Car’ if your smartphone is not connected to B310(-U) / G310(-U) device.

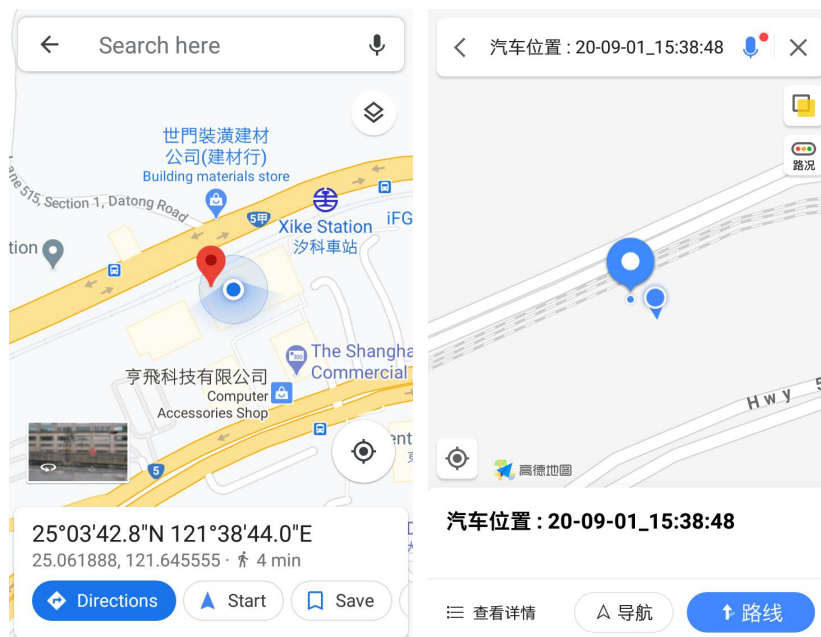



Fig.12.1 – GPS position of car and smartphone.

### Note:

‘Car Position Function’ should be activated under outdoor and open-sky environment due to there’s Cell-ID positioning mostly applied while indoor environment and might come the variant and huge errors. Please operate it carefully (Fig.12.2).

### H. Command tab:

Send command to B310(-U) / G310(-U), only available on ‘Satellite information’ and ‘Signal/NMEA’. Press(  ), select Command as Fig. 13.1. and command options as Fig. 13.2. (ADR and UDR commands will be different)

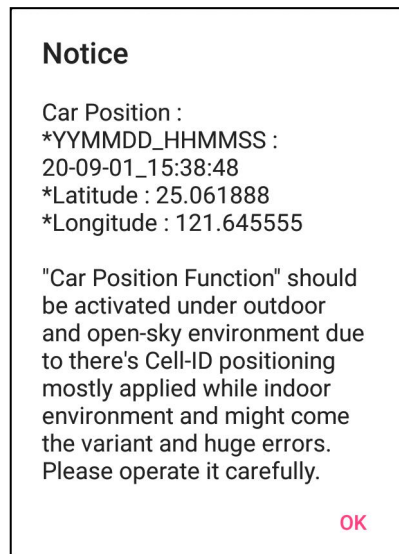


Fig.12.2 – Notice for remaindering user to fix the position under open-sky environment.

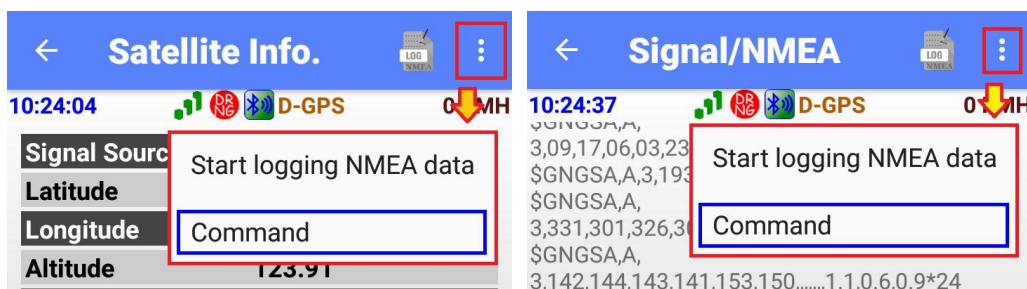


Fig. 13.1 - Command bar

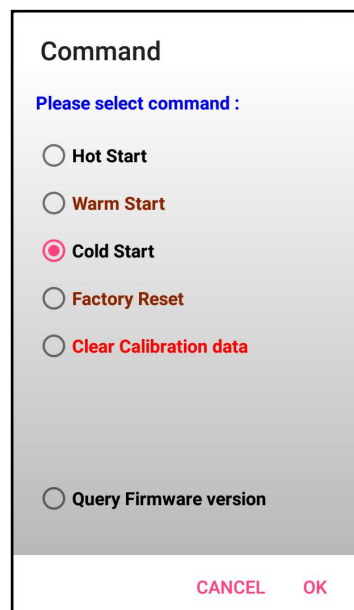


Fig.13.2 - Command options

## I. Log NMEA data(LOG) :

Press to start/stop logging NMEA data(LOG).



: Start logging NMEA data(LOG).



: Stop logging NMEA data(LOG).

Route:

Internal Storage/**DR310**/DR310\_NMEA\_YYMMDD\_HHMMSS.txt (Fig.14.1, 14.2)



Fig.14.1 - NMEA logging route

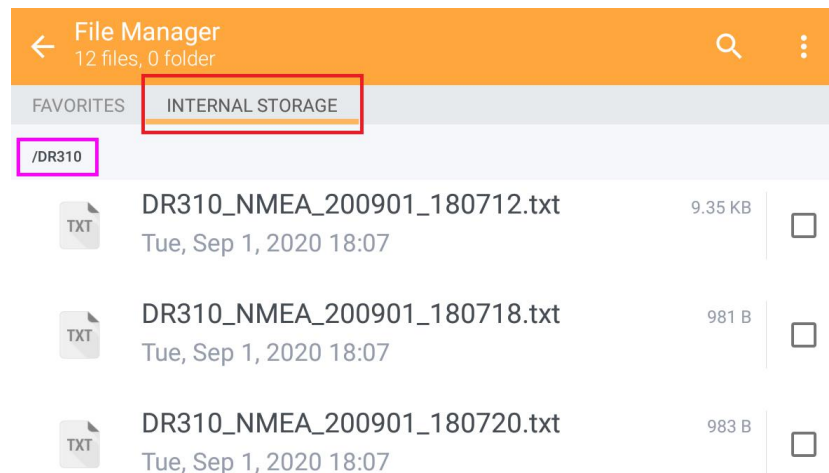


Fig.14.2 – The files of NMEA logging.

## J. About:

Display DR310 APP version and compile date. (Fig.15)

## K. Offline warning:

An unexpected disconnection between B310(-U) / G310(-U) device and smart device will



pop out a warning to notice disconnecting B310(-U) / G310(-U) already (Fig.16). The sound can be shut down by pressing the volume key on smart device or automatically stop after 6 seconds.



Fig.15 – DR310 APP version

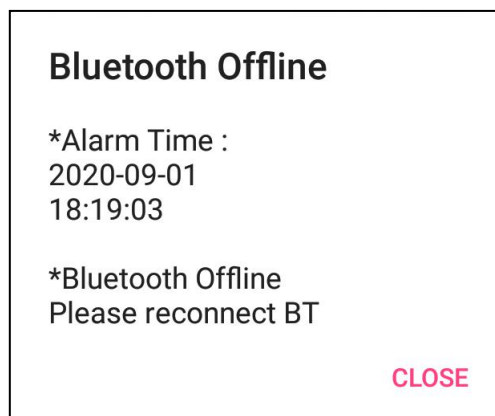


Fig.16 - Offline warning

#### L. Exit / Quit:

Exit DR310 App. (Fig17.1, Fig.17.2)

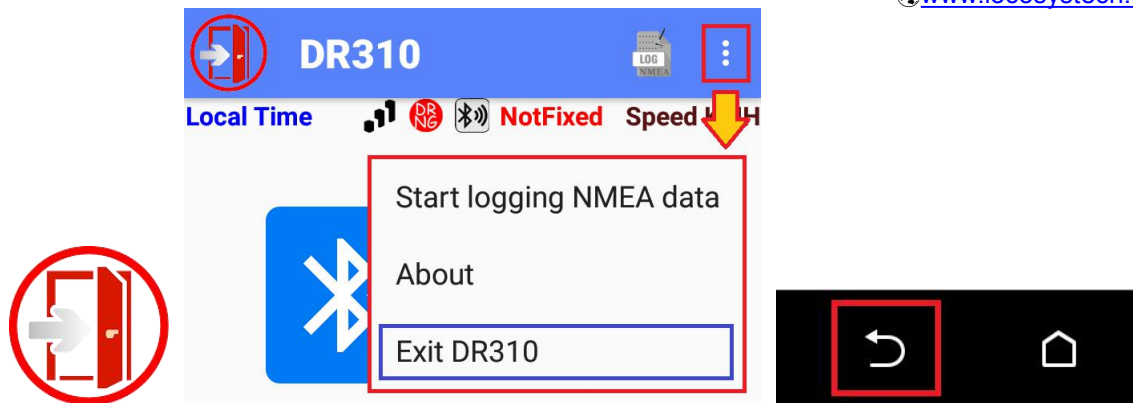


Fig.17.1 - Exit/Quit DR310 app.

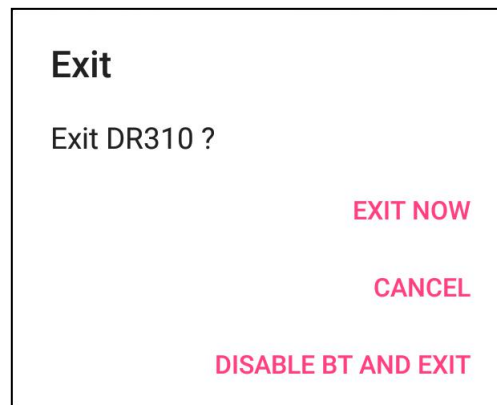


Fig.17.2 - Exit/Quit DR310 APP.

- \***EXIT NOW** : B310(-U) / G310(-U) shuts off app immediately, but Bluetooth on your smart device keeps on. <Automatically disconnect form B310(-U) / G310(-U) device>
- \***CANCEL** : Continue to use B310(-U) / G310(-U) APP.
- \***DISABLE BT AND EXIT** : B310(-U) / G310(-U) will disable BT then quit the app.  
 <Automatically disconnect form B310(-U) / G310(-U) device>

## 4. Document change list

### Revision 1.0

- First release on Sep. 10, 2020.