

TIRE INSIGHT

Bluetooth Low Energy TPMS Retrofit Kit
User Manual

VS-80R002

TIRE INSIGHT
www.cubautoparts.com



Bluetooth Low Energy TPMS Retrofit Kit User Manual

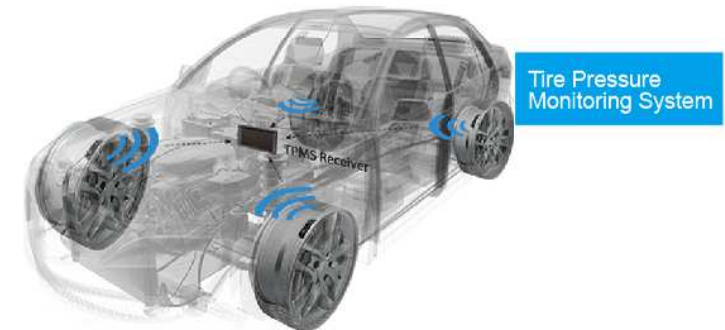
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1. Product Introduction

New technology product: Bluetooth Low Energy Tire Pressure Monitoring System Retrofit Kit (hereinafter referred to as BLE TPMS), the driver could get the real-time tire pressure and temperature through smart phone by using this kit while driving. When the system detects the abnormal status, it will alarm the driver actively, and show the abnormal data and its tire location on BLE TPMS APP (hereinafter referred to as APP).

BLE TPMS includes four sensors. It could be connected wirelessly to a smart phone by Bluetooth technology. The BLE TPMS sensor could detect the tire data and transmit it to the connected smart phone, showing the tire data of the corresponding tire on the BLE TPMS APP and the driver could access the data in real time.



2. Notice

2.1 Federal Communications Commission (FCC) Statement

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment. 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, and
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

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.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

2.2 Product Warning

1. Do not operate APP while driving. The company is exempt from all consequences because of driver's carelessness and improper operation.
2. The system adopts the wireless transmission of signals. In some special environments, frequency interference, wrong operation or wrong installation may make signal weaker, or no signal receiving. If the insulation adhesive sticker of the windshield contains metallic material, it will affect the signal reception. When the alarm sounds and shows abnormal data, please drive the vehicle away from the current location (there may be signal interference in the surroundings) or drive the vehicle to a tire shop to check.

3. If the battery status of the TPMS sensor is low (if abnormal conditions exist, the battery may make the TPMS sensors continuously emit signals to warn the driver, so that the battery life will be shorter than expected), please go as soon as possible to the specified service station to confirm whether the TPMS sensor needs to be replaced.
4. Please change the sensor when the low sensor battery warning is displayed, it may cause the TPMS not working normally. You will take all risks and responsibilities for this!
5. Temporary resealing or re-inflation product injected through the valve hole may adversely affect the operation of the sensor. The company is exempt from all consequences
6. Do not place the TPMS sensor in contact with any chemicals,. They might damage the sensor and prevent it from functioning properly.
7. Please close any other APPs or web pages which are not in use when using BLE APP. Data receiving condition on the APP will probably be affected by the system loading of the smart phone.

3. BLE TPMS Specification

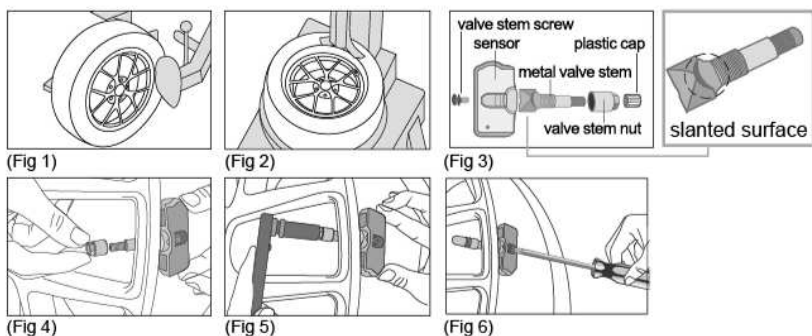
BLE Sensor Specification	
Operating Voltage	3V
Operating Humidity	95% MAX
Operating Current	< 15 mA at DC 3V
Storage Temperature	-40°C to 85 °C
Operating Temperature	-20°C to 85 °C
Monitored Pressure Range	0 to 92 psi (0 to 640 kPa)
Monitored Temperature Range	-20 °C to 85 °C
Operating Frequency	2.4GHz
Transmission Power	4 dBm MAX
Battery Life	Estimated 3 years (under normal operating condition)
Battery Capacity	540 mAh
Weight	45 ± 3 g (including valve)

4. BLE TPMS Package

Part Name	Quantity
BLE TPMS Sensor	4 PCS
Valve	4 PCS
Screw	4 PCS

5. BLE TPMS Sensor Installation

- (Fig 1) Loosen the tire. Fix both sides of the tire and press, and make it bulge.
- (Fig 2) Remove the tire. The valve faces the mounting arm in the one o'clock direction, remove the tire.
- (Fig 3) Remove the sensor. Loosen the fixing screw, allow the sensor separate from the valve, and release the nut to take it apart from the valve.
- (Fig 4) Insert sensor, metal valve stem and valve screw into wheel. Place the slanted surface of the stem face to the rim surface. Hold in place in hand. Loosely screw into place so sensor drop angle can be adjusted. From outside wheel, put on valve stem nut.
- (Fig 5) Holding sensor down against wheel bottom, tighten valve stem nut to 4.0Nm with torque wrench.
- (Fig 6) Holding sensor down against wheel bottom, tighten valve stem screw to 2.0Nm with torque wrench, place the valve cap.
- Note: Mount the tire. Grip the rim edge, and the valve is opposite to the mounting arm, avoid hitting the sensor during arm operation.



6.2 How to download

You search in the Google Play Store or APPLE APP Store by the keyword "Tire Insight" or "BLE" or "TPMS" or "CUB", in order to find the free APP



Open the APP after installation is completed. A statement window will pop up if Bluetooth is not activated, please make Bluetooth activate to enable the APP.

**Turn On Bluetooth to Allow
"TPMS" to Connect to
Accessories**

Settings

OK

In iOS mobile phone, please make the "Location Services" activate, which is located in "Settings / Privacy"

TPMS

Location Service Disabled To enable, please go to phone Settings, select Privacy and turn on Location Services for this app.

Confirm

After installation, please download the APP to your smart phone, and proceed with all settings. (Please check the 7.1 Initial Setting)

Note 1 : After installation, recalibrate the rim set on balance machine to avoid shaking during driving.

Note 2 : The "sensor valve" and "screw" are not included in product warranty. When replacing the sensor, it is suggested to use a new sensor valve and screw.

6. APP Download and Installation



6.1 Operation System Required

TPMS system supports both Android & iOS mobile phone.

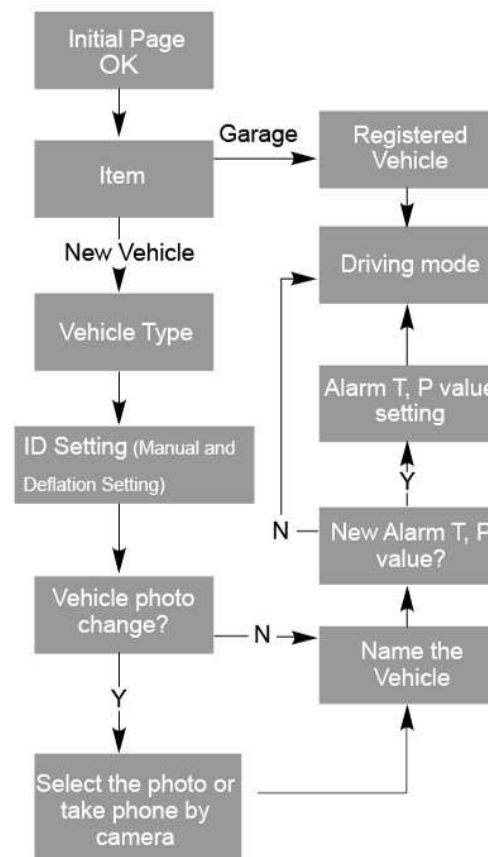
APP Download	Operation System	Compatible Mobile Phone
APPLE APP Store	iOS 8.0.2 or later	iPhone 4S, 5, 5S, 6, 6 Plus or later
Android Google Play Store	Android 4.4 or later	Android Smart Phone

7. Learning Setting (Android / iOS)

Double click APP, then please check the Bluetooth function is activated.

	<p>Initial Page</p>
	<p>Product notice items and warning symbol, please press "OK" for following procedure</p>

7.1 New Vehicle Adding Procedure



1. Double click APP to the initial page of TIRE INSIGHT Bluetooth Low Energy TPMS APP.

2. Press "OK" icon, then it has two choices "Garage" and "New Vehicle". Please choose the existing vehicle from "garage" then go into the "Driving mode", or add a new vehicle and follow the setting procedure.
3. New Vehicle Adding Procedure
 - 3.1 Please choose the target vehicle type:
 1. Motorcycle 2 wheels
 2. Trailer: 2 wheels
 3. Passenger Car: 4 wheels
 4. Trailer: 4 wheels
 5. Pick-up: 6 wheels
 6. Passenger Car 4 wheels + Trailer 2 wheels
 7. Passenger Car 4 wheels + Trailer 4 wheels
 - 3.2 It has two choices for ID Learning after vehicle is chosen.
 1. Manual Learning
 2. Deflation Learning
 - 3.3 It has three choices for vehicle photo setting after ID learning finishing.
 1. Use camera
 2. Use existing photo
 3. Use default vehicle photo
 - 3.4 Give a name for new vehicle
 - 3.5 Alarm tire pressure or temperature value setting
 - 3.6 It goes to "Driving mode" after finishing procedure

Default Vehicle Photos



Motorcycle 2 wheels



Trailer: 2 wheels



Passenger Car: 4 wheels



Trailer: 4 wheels



Pick-up: 6 wheels (2 wheels on the front axle, 4 wheels on the rear axle)

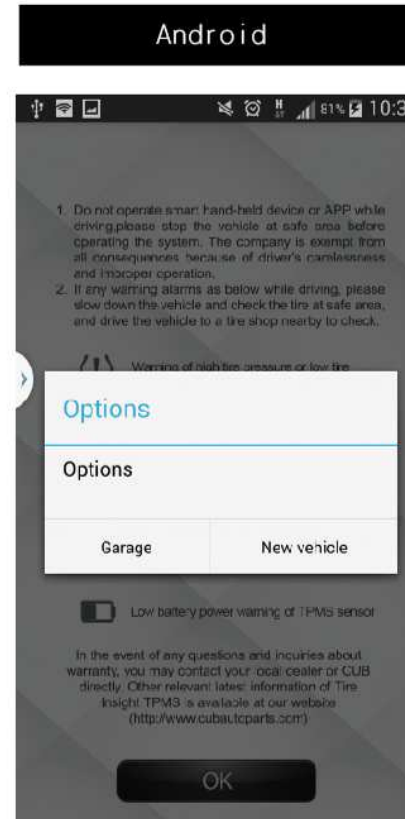


Passenger Car 4 wheels + Trailer 2 wheels



Passenger Car 4 wheels + Trailer 4 wheels

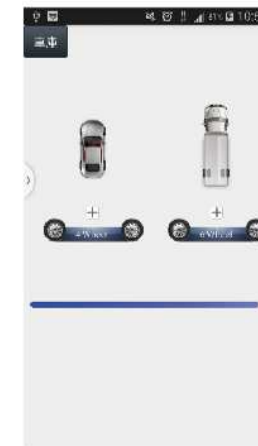
The following setting process of APP is based on "Passenger Car" type for an example.

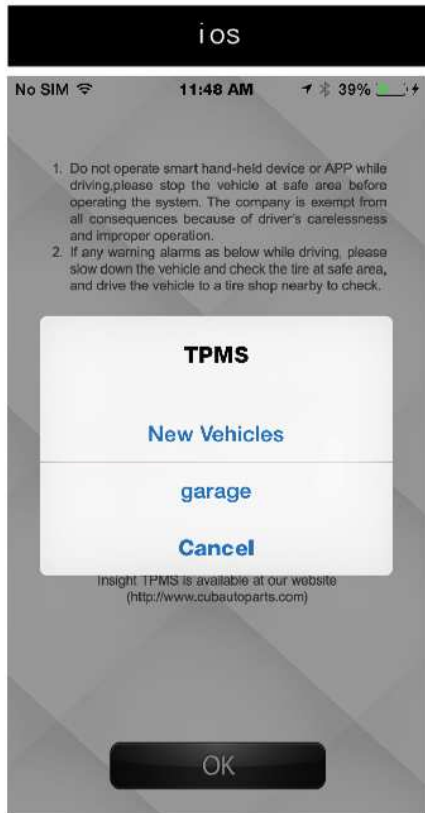


Double click "Garage", choose the existing vehicle then go into the "Driving mode".



Double click "New Vehicle", then following the setting procedure.





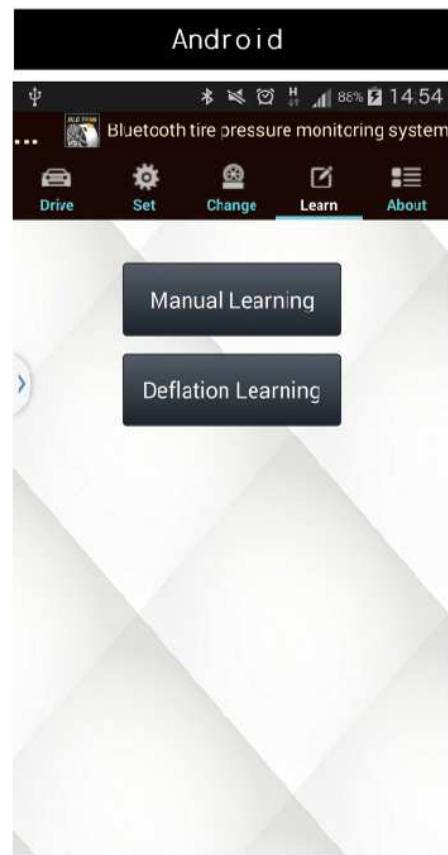
Double click "Garage", choose the existing vehicle then go into the "Driving mode".



Double click "New Vehicle", then following the setting procedure.



After choosing the target vehicle on "new vehicle", it goes to ID learning page.



ID Learning Page

Manual Learning:

Choose the tire, a blank space pops out. Please key in the five-character sensor ID, which might include "0~9", "A-F", or "a-f".

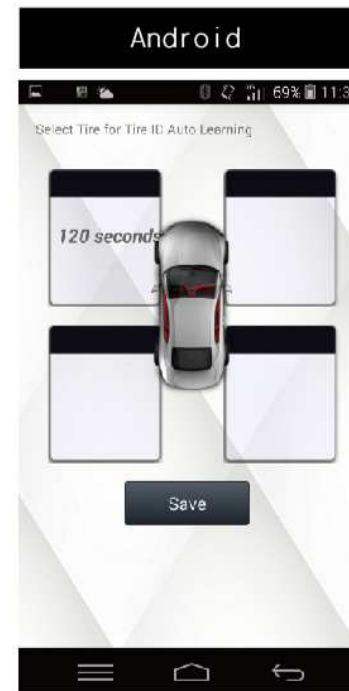
Note: the ID number of the motorcycle sensor is 7. Please key-in complete 7 character or number in Android mobilephone, but key-in the last 5 character or number of the sensor ID in iPhone.



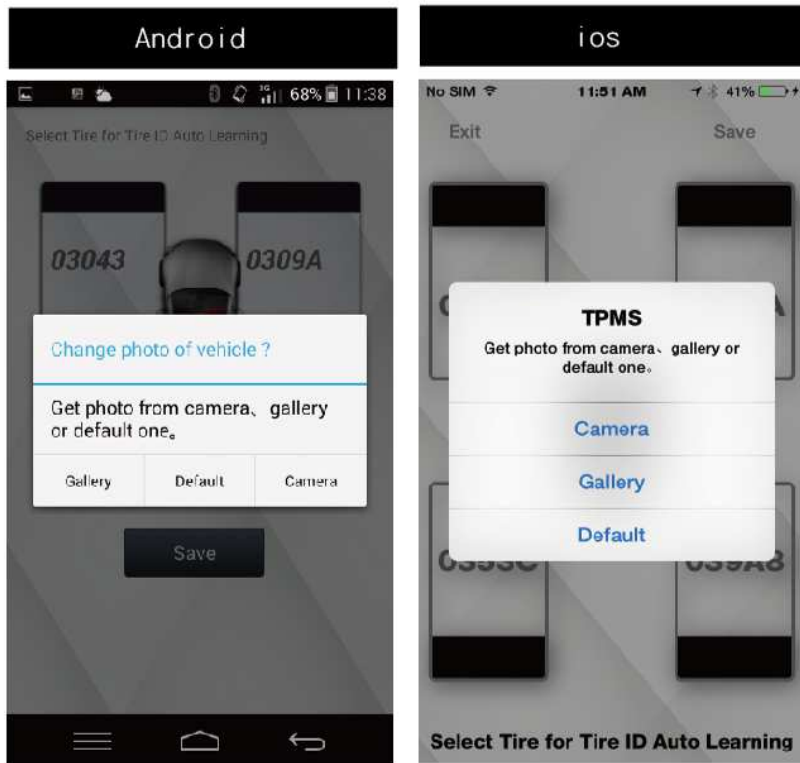
Deflation Learning:

Choose new tire 1 (LF), deflate the tire pressure for 20 seconds, the APP will look for the sensor signal, showing the "Learning" on the dialogue display of the tire. When it finds the signal, it will show a new ID number on the dialogue display. You could press "OK" for finishing this step or press "Cancel". This function will give 120 seconds of time span to perform this step.

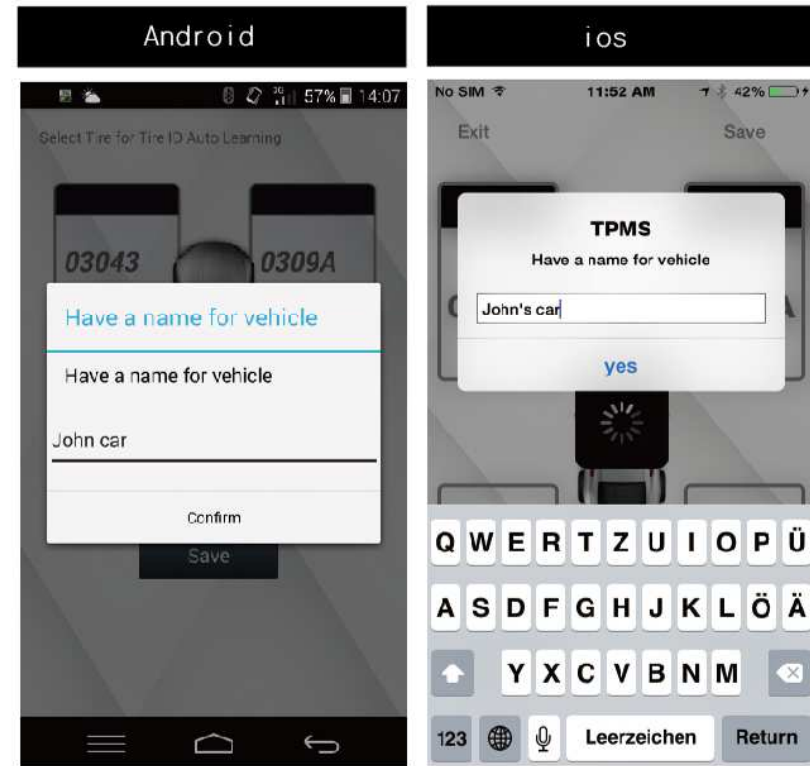
By this method, set up the ID learning for tire 2 (RF), tire 3 (RR) and tire 4 (LR) in sequence. Press "save" when all sensors learning are completed.



After finishing the ID learning, it will pop out a dialogue display, ask if you want to change the vehicle photo. The photo could be used by taken from camera or gallery, or default vehicle photo.

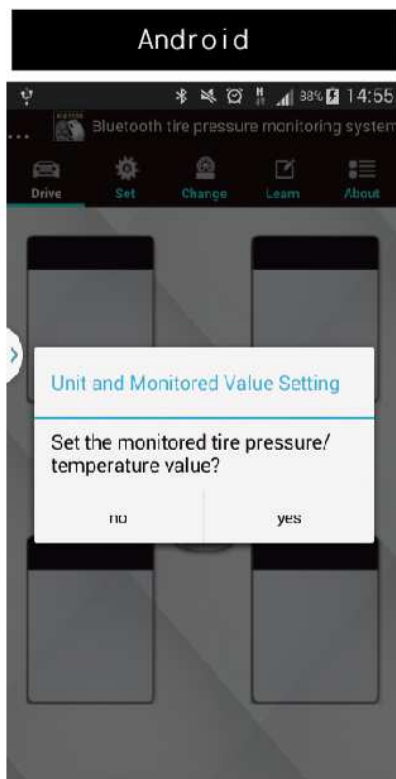


After vehicle photo is set, please give a name for this vehicle for identification purpose.



Press "Yes" for new alarm tire pressure and temperature value setting, press "No" for default value.

Then go to "Driving mode" at last.



Driving mode:

It has five icons on the top row of the page in Android system, while on the bottom in iOS system.

Drive: display tire pressure and temperature of 4 wheels and warning symbol.

Set: System value setting.

Rotate: Tire Rotation setting.

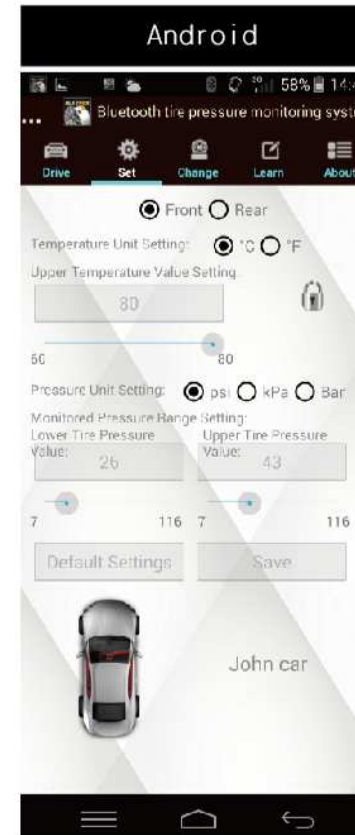
Learn: manual learning and deflation learning for sensor ID.

About: Product information.

PS 1: If mobile phone could not get the signal of one tire for lasting 10 mins, it shows the TPMS system warning symbol on the tire. But if it loses all of sensor signal, it means the vehicle is in "stop" status, the symbol will disappear



8. System Setting



Unit Setting:

Unlock the system setting by touching the "lock" icon on the up-right side of main display, change settings on the "front wheel" and "rear wheel", the press "Save" to save settings. You can press "Default Value" to reset all settings to default values.

1. Pressure unit: Bar \ kPa \ psi, 3 different units.
2. Temperature unit: °C \ °F, 2 different units.

High tire pressure

psi: 7-92

kPa: 50-637 (default =300)

Bar: 0.5-6.37

Low tire pressure

psi: 7-92

kPa: 50-637 (default =180)

Bar: 0.5-6.37

Temperature upper limit

C: 60-80 (default =80)

F: 140-176

PS 1: For the standard tire pressure value, please refer to the placard located at the side of driver seat.

PS 2: Touch the vehicle photo for photo changing.



Unit Description :

kPa	Pressure reading in Kilo Pascal
psi	Pressure reading in pound per square inch
Bar	Pressure reading in Bar
°C	Temperature reading in degrees Celsius
°F	Temperature reading in degrees Fahrenheit

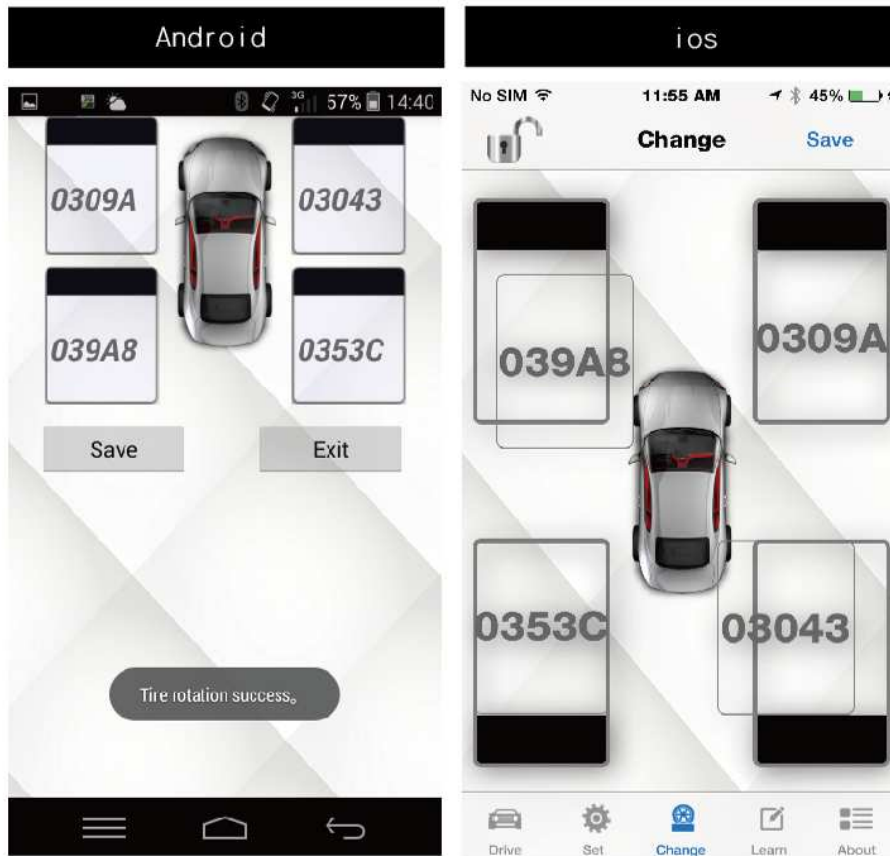
9. Tire Rotation Setting

Tire Rotation:

Unlock the system setting by touching the “lock” icon on the top-middle side of the main display. It displays the tire ID in each wheel.



Drag the dialogue display of the tire to the desired location for all desired exchanged wheels, then press the “save” icon, it will display the new wheel position.



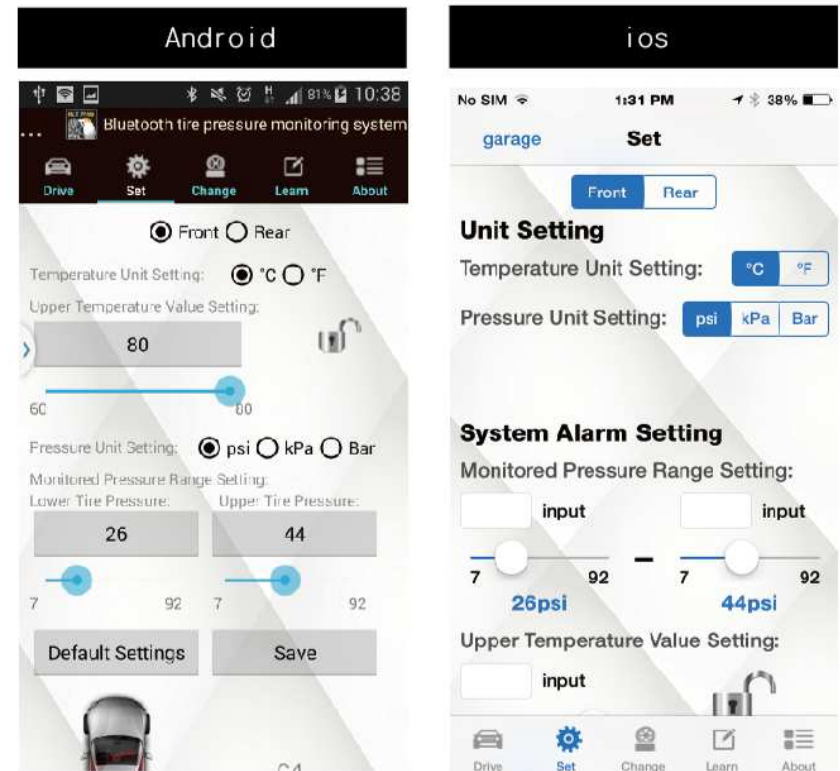
10. Additional Function :

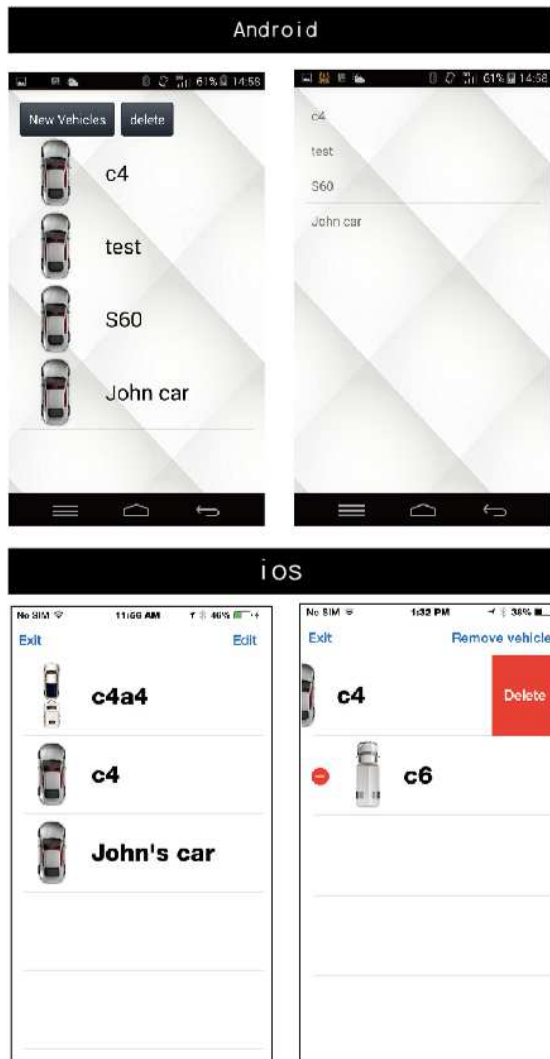
Additional Function 1:

There is a symbol “...” at the top-left corner on each page on Android APP, it has three functions:

1. Garage: switch the registered vehicles for monitoring.
2. New vehicle adding: new vehicles adding or registered vehicles deleting.
3. Close: close and leave

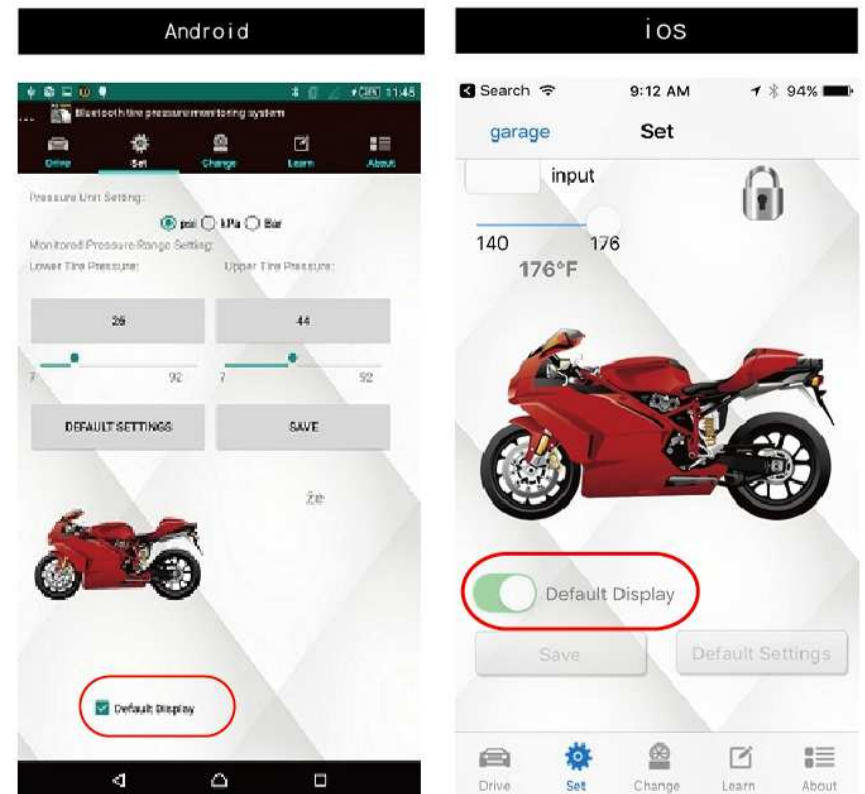
There are only two functions “Garage” & “Delete registered vehicle” in iOS APP.





Additional Function 2:






There is an icon switch "default display" below the vehicle photo in Setting page, after chose the target vehicle, it goes directly into the Driving page with this vehicle when APP is reset, will skip the "Garage" for choosing the vehicle.



11. ALARMS AND WARNINGS

System Warning:

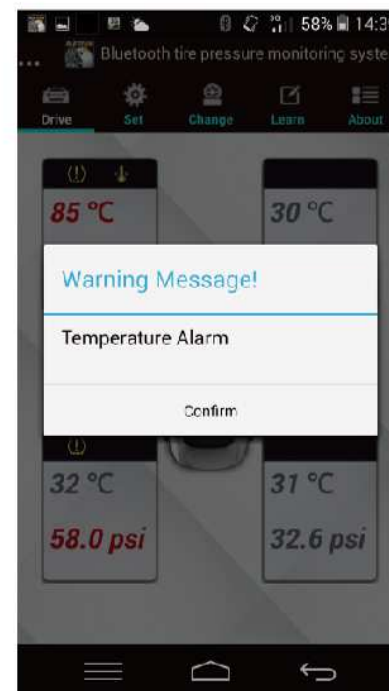
When the abnormal tire system status occurs, the value of the corresponding tire turns red, and it alarms with a warning symbol. The warning symbols on each tire display are: tire pressure warning, rapid deflation, abnormal TPMS system, tire temperature warning and low battery power of sensor, from the left to the right. The tire pressure and temperature warning will alarm with a sound.

-  Warning of high tire pressure or low tire pressure:
Tire pressure is higher than high tire pressure value or lower than low tire pressure value.
-  Warning of abnormal TPMS system:
Mobile phone cannot receive the sensor signal.
-  Warning of high tire temperature:
Tire temperature is higher than temperature upper limit value.
-  Warning of rapid deflation of the tire pressure: tire pressure is decreasing rapidly.
-  Low battery power warning of TPMS sensor: Battery power of TPMS sensor is low.



A warning message window will pop up on the center of the display when a system warning occurs.

In the warning message window, you can press “Cancel” to close it temporarily, or “OK” to close it without showing up again



12. Information About Company



When pressing the “About” icon, it shows “Product Information”. It describes the definition of “Warning Symbol” and “Company Website”. You can press it to go to the company’s website.

Press the “Home” button to go back to the main display in iOS system, or press the “Back” button in Android system.