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# Bluetooth Low Energy TPMS Retrofit Kit User Manual

Version 1.3

Prepared By:

Approved By:

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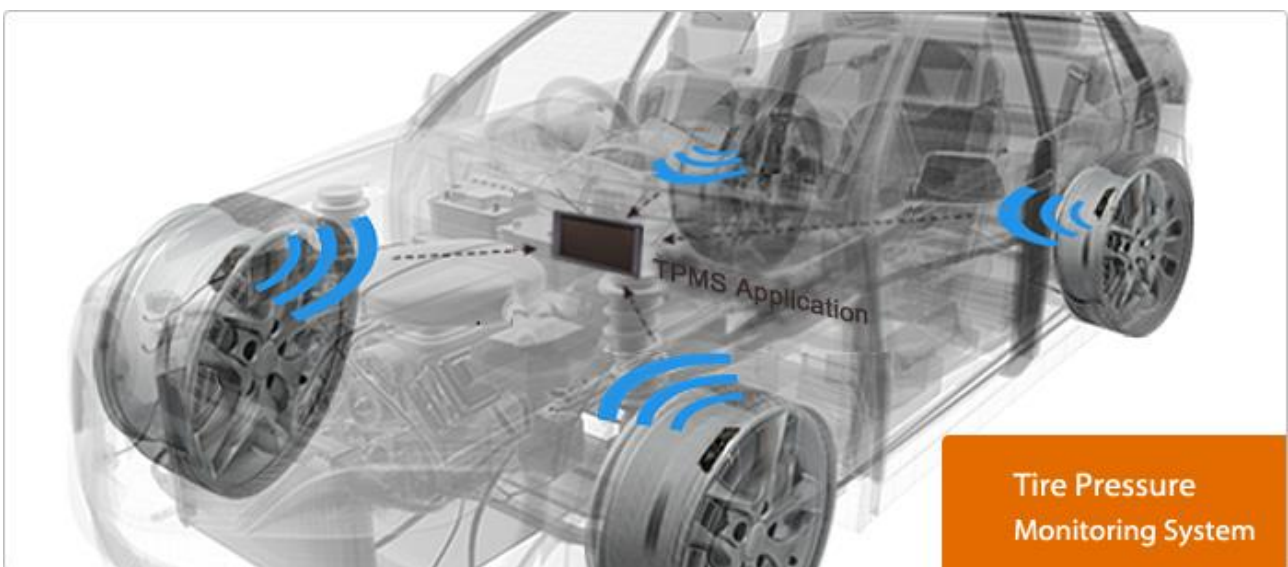
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# 1. Product Introduction

Bluetooth Low Energy Tire Pressure Monitoring System Retrofit Kit (hereinafter referred to as BLE TPMS), driver could get the real-time tire pressure and temperature through smart phone in driving by using this kit. When the system detects the abnormal status, it will alarm to 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 with your smart phone by Bluetooth technology. The BLE TPMS sensor could detect the tire data and transmit it to the connected smart phone, it shows the tire data of corresponding tire on BLE TPMS APP and 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

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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**

**2.2.1 Do not operate APP while driving, the company is exempt from all consequences because of driver's careless and improper operation.**

2.2.2 The system adopts the wireless transmission of signals. In some special environment, frequency interference or wrong operation or wrong installation may cause signal weaker or no signal. If the insulation adhesive sticker of the windshield contains metal material, it will affect signal reception. When it alarms sound and shows abnormal data, please drive the vehicle away from the current location (there may be signal interference in the neighborhood) or drive the vehicle to a tire shop to check.

2.2.3 The battery status of the TPMS sensor is low (abnormal condition exists, the battery may make the TPMS sensors continuously emit signals to warn the driver, so that battery life is shorter than expected life), please go as soon as possible to the specified service station to confirm whether the TPMS sensor need to be replaced.

2.2.4 Please change the battery while battery power is low, and change the sensor while low sensor battery warning is alarmed, it may cause the TPMS not working normally. You will take all risks and responsibilities for this!

2.2.5 Temporary resealing or re-inflation product injected through valve hole may adversely affect the operation of the sensor. The company is exempt from all consequences

2.2.6 Do not place the TPMS sensor in contact with chemicals, it would cause sensor damaged and cannot function properly.

2.2.7 Please close the other APPs or web pages which are not in use when using BLE APP, data receiving condition on APP will probably be affected by the system loading of the smart phone.

**3. BLE TPMS Specification**

BLE Sensor Specification	
Operating Voltage	3V

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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
Pressure Monitoring Range	0 to 92 psi (0 to 640 kPa)
Temperature Range	-20 °C to 85 °C
Operating Frequency	2.4GHz
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
User Manual	1 pcs

## 5. BLE TPMS Sensor Installation

### 5.1 BLE TPMS Sensor accessories



1.Screw 2. TPMS sensor 3. Valve and rubber washer 4.Washer 5. Nut 6 Valve Cap  
(Note: New nut is a one part combined nut and washer together.)

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## 5.2 Installation Step

(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) Install the sensor and valve. Insert the valve through the rim hole, fix the screw to secure the valve and sensor by 2 Nm in torque, attach the sensor body to the inner surface of the rim by adjusting the angle of the sensor body.

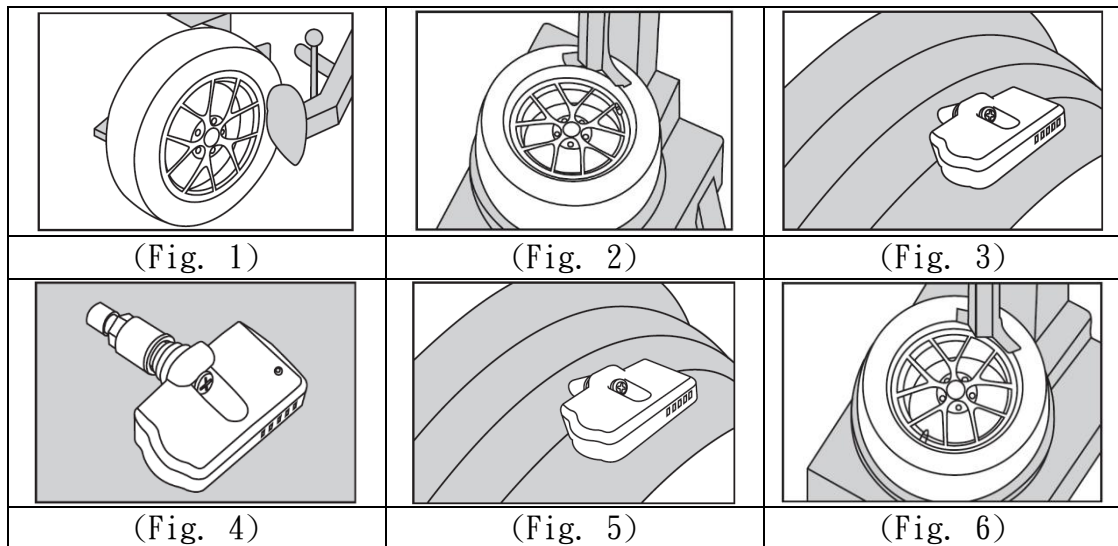
(Fig 5) Install valve to the rim hole. Guide the washer into the valve, and fix the nut by 4 Nm in torque, then tighten the cap.

(Fig 6) Mount the tire. Grip the rim edge, and the valve is opposite to the mounting arm, avoid hitting the sensor during arm operation.

After installation, please download APP to your smart phone, and proceed 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 :** It does not include the “sensor valve” and “screw” in product warranty, when replacing sensor, it is suggested to use new sensor valve and screw.



## 6. APP Download and Installation

### 6.1 Operation System Required

TPMS system supports both smartphone and pad, for Android & iOS system.

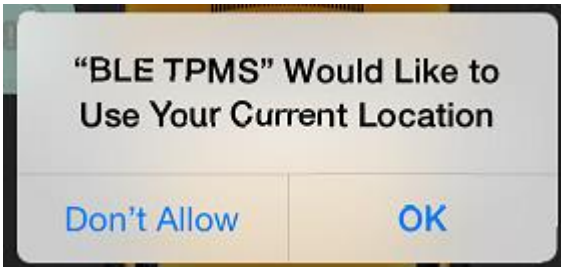
APP Download	Operation System	Compatible Smartphone
APPLE APP Store	iOS 7.1.1 and +	iPhone 5, 5S and +
Android Google Play Store	Android 4.3, 4.4 and +	Android Smart Phone

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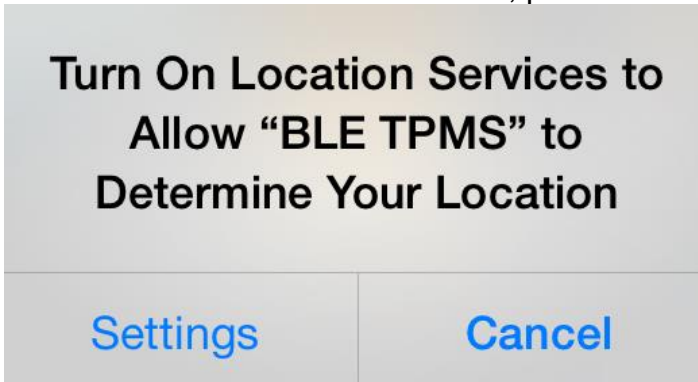
## 6.2 How to download

You could surf on the Google Play Store or APPLE APP Store by the keyword “Tire Insight” or “BLE” or ”TPMS” or “CUB”, find the free APP (BLE TPMS V1.1).

Open APP after installation completed, it will pop out a statement from the operation system, “ BLE TPMS would like to use your current location”, please choose “ok” to make “Location Services” valid.



Or “Location Services” is not invalid, please make it valid in “Settings” mode.



## 7. Learning Setting

Please make sure the “Bluetooth” function is enabled when you start to use APP.

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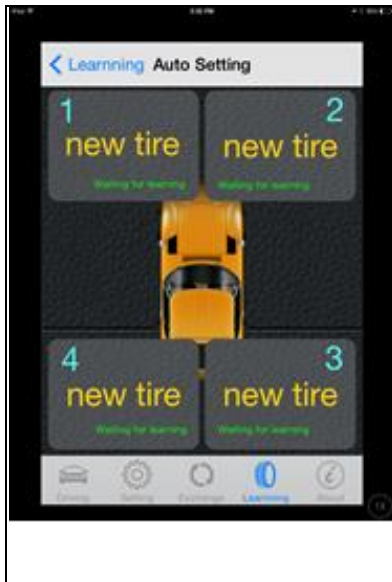


#### Driving Mode:

1. Driving: display 4 tire Pressure, Temperature & ID.
2. System: system setting.
3. Exchange: tire exchange setting.
4. Learning: auto learning & manual learning.
5. About: company information.

Note 1: if the sensor is disconnected with device over 10 mins, it will show the warning symbol of abnormal TPMS system with alarm sound. It will clear ID, pressure & temperature value on the display if the sensor is disconnected with device over 15 mins.

Note 2: It supports background mode,



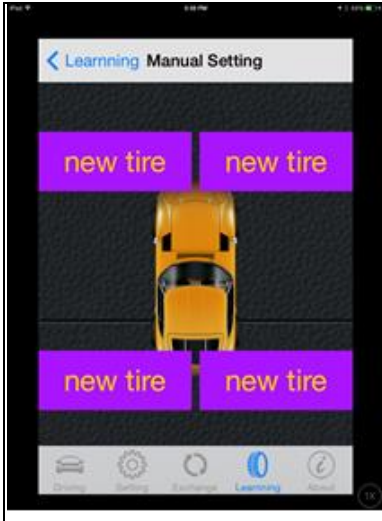
#### Auto Learning :

1. Choose new tire 1 (LF), deflate the tire pressure, it will search the deflation signal by APP, shows "Learning" on the dialogue display of tire. After learning is completed, it will show a new ID number on the dialogue display and sound a "Beep". You could press "OK" for finishing this step or press "Cancel". It has 120 seconds of time period to operate this step.

By this method, set up the ID learning 依 for tire 2(RF), tire 3(RB) and tire 4(LB) in sequence.



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**Manual Learning :**

1. Choose the tire, it pops out the blank space. Please key in sensor ID, it is included "0-9", "A-F", "a-f" for 6 characters.

PS: It will record the ID value in the first registration.

## 8. System Setting



**Unit Setting :**

1. Pressure unit : Bar 、kPa 、psi, 3 different pressure unit.
2. Temperature unit : °C 、°F, 2 different temperature unit.
3. Warning Audio Setting:  
Default, All of you, bird, fantasy, impromptu.

**Setting Alarm Value Setting :**

1. High tire pressure  
psi: 40-60  
kPa: 280-420 (default =300)  
Bar: 2.8-4.2
2. Low tire pressure  
psi: 18-35  
kPa: 120-250 (default =180)  
Bar: 1.2-2.5
3. Temperature upper limit value  
C: 60-80 (default =80)  
F: 140-176

PS: For the standard tire pressure value, please refer to the placard which be attached to the side of the driver seat.

Unit Description :

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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. Exchange Setting

Tire Exchange Setting:

1. Unlock the system by sliding the switch icon on right side of the main display center.
2. Drag the dialogue display of the tire to the desired location for all desired exchanged tires, then press the “Save” icon.
3. It will display the new tire position in sequence (1,2,3,4).

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## 10. Alarms and Warnings



### System Warning:

When the abnormal tire system status is occurred, the dialogue display frame of tire turns red, and alarms by a sound. The warning symbol would be displayed on the left side of middle area on the display panel, from the left to the right, it is temperature, pressure, deflation and TPMS system. You could choose sound or mute by switch on the right side of main display center.

1. Warning of high tire pressure or low tire pressure  
Tire pressure is higher than high tire pressure value or low tire pressure value.
2. Warning of high tire temperature  
Tire temperature is high than temperature upper limit value.
3. Warning of rapid deflation of tire pressure  
Any of tire pressure is deflating rapidly.
4. Warning of abnormal TPMS system  
Smartphone/Pad could not receive the sensor signal.
5. Low battery power warning of TPMS sensor  
Battery power of TPMS sensor is in low status.

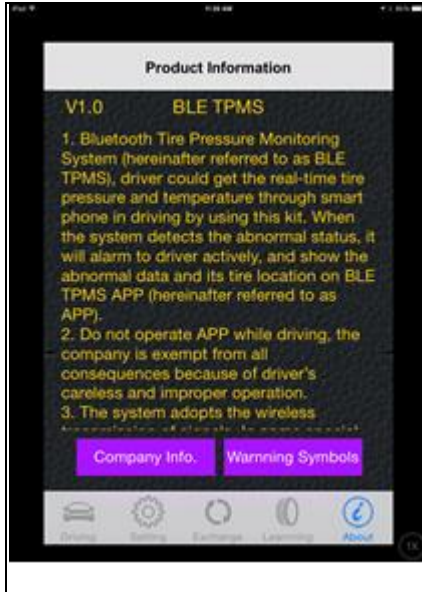


It will pop out the warning message window on the middle of display when system warning occurs. Then, the warning value will keep updated on the dialogue display of the tire and it shows the warning symbol on the left side of main display center

For warning message window, you could press "Cancel" to close the window or "Clean" to clear the message only.

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## 11. About Company Information



Press “About” icon, it shows “Product Information”, there are two icons underneath, “Company Website Information” and “Warning Symbol Illustration”, press these icons for more detail information.

Press “Home” button to back to main display in IOS, and press “Back” button in Android.



### Warning Symbols

6. Warning of high tire pressure or low tire pressure
7. Warning of high tire temperature
8. Warning of rapid deflation of tire pressure
9. Warning of abnormal TPMS system
10. Low battery power warning of TPMS sensor

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## 12. Warranty Policy

Thank you for buying this product and giving us support. From the date of purchase on we provide 1 year free warranty for the product, protecting the client's interests and Tire Insight product quality assurance. During the warranty period, under normal operation, in the event of a poor product, the company is willing to provide the bad product with repair service or have it replaced, enabling you to get the guarantee and demonstrating the company's responsible attitude toward products. But the product warranty parts must meet the following conditions:

1. Defective products need to be provided to local dealer to confirm purchase date and cause.
2. Products must be normally operated as indicated in the user manual.
3. Product has not been disassembled by yourself.
4. The main cause of product failure is due to manufacture issue.

### **Disclaimer:**

This product is only to be used as precautionary warning and provides user as a convenient secondary safety equipment. Please follow the standard installation procedure or ask a qualified tire shop to install the product. If the tire has been damaged or traffic accident occurs resulting from improper driving behavior, the company will not assume civil or criminal liability.

In the event of any questions and inquiries about warranty, you may contact your local dealer or CUB directly.

Other relevant latest information of Tire Insight TPMS is available at our website (<http://www.cubautoparts.com>) for latest information.