

# **Tire Pressure Monitoring System**

**(TPMS)**

**User Manual**

**Standalone Display Unit Type**

**Model:EL-451R**

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# Notice

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## System Scope of Use and Warnings

### ■ System Installation and Usage

Use of the TPMS requires that qualified personnel according to the instructions here have properly installed it.

This system is suitable for use on a passenger car, SUV and 4X4 tires.

TPMS can monitor and provide tire pressure and tire temperature in real time to help the driver control and keep the normal tire pressure in order to reduce the fuel consumption and extend the tire life, and also reduce the possibility of vehicle breakdown on the road or heavy incident or crash to occur.

### ■ Reacting to Alerts

When an alert or warning is received, reduce vehicle's speed and proceed to a safe location to stop where the tire can be inspected and /or serviced.

The low-pressure alert indicates that the air pressure has dropped to a selected minimum and a high-temperature alert indicates that the temperature of the tire content has surpassed the threshold value set.

### Caution

The system is a wireless RF product; therefore, it may not receive a signal due to poor environmental conditions or incorrect installation. When the system continuously cannot receive any signal from any tire sensor for more than 10 minutes since the system has been switch on, the display will show "ERROR" and activate the alert sound. In this case, a RF interference environment may have caused it; a driver will need to drive the vehicle to a different location.

If the display is still unable to receive any correct signal from tire sensor, the driver will need to find a nearby qualified tire maintenance service to check or carry out maintenance. This abnormality may be caused by a damaged tire sensor or excessive battery power consumption.

## Accessory Line Up

Accessories	Pictures	QTY	Accessories	Picture	QTY
Receiver Module		1	Display Module		1
Tire Sensor		4	Aluminum Valve		4
Nylok Screw		4	User Manual		1

# Display Module Functions, Operations & Settings

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## Display module operation introduction / Key press timeouts



(1)Display Screen: shows tire pressure, temperature and warning information etc.

(2)Touch Key:short press to select tire pressure/temperature information.

(3)Touch Key: long press to go to pair mode or setting mode. Short press to change page,confirm or cancel alarm.

### Touch Key Instructions:

1.Short press(0.5sec~2sec):change page.

2.long press(2sec):confirm.

3.long press(over 5sec):

(1)go back to the main page

(2)Turn off the alarm on warning page. (If you would like to turn on the alarm, touch and hold the key over 5 seconds again or turn off and on the ACC to go back to the default set.)

4.Not touch any key for 10 seconds:go back to the main page.(It does not work on pair and swap pages. )

**Note:**Note you are not allowed to:turn off the keypad touch sound .

## Tire Pressure Display



(1) TPMS system would detect 4 vehicle tires' pressure and show on the display screen, pressure unit could be switched to psi/bar/kPa.  
(refer to TIRE UNIT setting)

(2) Short press to switch to tire temperature mode.

## Tire Temperature Display



(1) TPMS system would detect 4 vehicle tires' temperature and show on the display screen, temperature unit could be switched to degree C / degree F (refer to TEMP UNIT setting)

(2) Short press to switch to tire pressure mode.

## Warning Display

[1] Tire Pressure Abnormal



(1) The display would show warning message with sound alarm if tire pressure is lower than 75% or higher than 125% of tire pressure value setting (refer to TIRE SET setting)

[2] Rapid Tire Leakage



(1) When tire pressure lost 2psi (2 psi=0.1 bar=10kPa) within 30 sec., system would show warning screen with sound alarm.

[3] Tire Temperature Abnormal



(1)When tire temperature reaches 85 degree C or higher than 85 degree C (185 degree F),system would show warning screen with sound alarm.

[4] Tire Sensor Signal Abnormal



(1)When receiver module didn't receive the signal of any of the tire sensors over 10 minutes, system would show warning screen with sound alarm.

[5] Tire Sensor Low Battery



(1) When TPMS sensor battery voltage is lower than required supply level,system would show warning screen with sound alarm.

[6] TPMS System Abnormal



(1)When power on, receiver module initial process error and could not obtain signal from tire sensors, system would show warning screen with sound alarm.

Note:Long press for 5 seconds to cancel sound alarm. If it is done, the system will have continuous triple Beep Sound.

## Settings

[1] **TIRE UNIT**: change tire pressure display format, psi/bar/kPa.



(1) Long press to enter main menu on temperature/pressure page.



(2) Short press to switch to setting page and long press to enter setting page.



(3) Short press to Tire Pressure Unit page and long press to enter setting mode of tire pressure unit on setting page.



(4) Short press to change psi, bar and kPa.

After selecting desired tire pressure unit, you can touch and hold the key to put the tick on the box to confirm the setting.



(5) Return:

- Short press to go to return page and long press to go back to setting page.
- Long press for 5 seconds to go to the main menu.



[2] **TEMP UNIT:** change tire temperature display format, degree C/ degree F.



(1) Long press to enter main menu on temperature/pressure page.



(2) Short press to switch to setting page and long press to enter setting page.



(3) Short press to Tire Temperature Unit page and long press to enter setting mode of tire temperature on setting page.



(4) Short press to change between degree C and degree F.  
After selecting desired tire temperature format, you can touch and hold the key to put the tick on the box to confirm the setting.



(5) Return:  
a. Short press to go to return page and long press to go back to setting page.  
b. Long press for 5 seconds to go to the main menu.

[3]TIRE SET: Setting standard tire pressure value, so if actual tire pressure is lower than 75% or higher 125% of it, system will alarm.



(1) Long press to enter main menu on temperature/pressure page.



(2) Short press to switch to setting page and long press to enter setting page.



(3) Short press to Tire Set page and long press to enter setting mode of Tire Set on setting page.



(4) Short press to change between front tire, rear tire and back.

After selecting desired option, you can touch and hold the key to enter the setting of standard tire pressure value. At that time, the number area will be highlighted and you can touch the key to add up the 1 psi(0.1 bar ,10 kPa).Once number is selected, long press to confirm and highlight will disappear.



(5)a. Short press to go to return page and long press to go back to setting page. b. Long press for 5 seconds to go to the main menu.

※ Standard tire pressure setting value adjustable range.24~66 psi / 1.7~4.5bar / 170~450 kpa

※ Tire temperature setting value is 85 degree C (185 degree F), and this value is not adjustable by user.

## Pairings

[1] **PAIR 1:** Once one of the vehicle tire sensors is replaced, to pair the new tire sensor with receiver module follows single tire pairing process.



(1) Long press to enter main menu on temperature/pressure page.



(2) Short press to switch to pair page and long press to enter it.



(3) Short press to select pair 1 and long press to enter setting of pair 1.



(4) Short press to select desired pairing tire sensor and long press to start pairing.

※ Pairing requires actual tire pressure change for up or down over 2 psi, 0.1 bar or 10 kPa within 30 sec. to activate the pairing process.

Please flat or inflate the tire. When you heard beep sound, the pairing has done.



(5) Return:

a. Pairing is done.

b. During pairing process, short press to return and long press to cancel pairing.

c. Long press for 5 seconds to go to the main menu.

[1]PAIR 2: Once 4 vehicle tire sensors are replaced; to pair the new tire sensors with receiver module follows 4 tires pairing process.



(1) Long press to enter main menu on temperature/pressure page.



(2) Short press to switch to pair page and long press to enter it.



(3) Short press to select pair 2 mode and long press to enter setting of pair 2.



(4) Short press to select desired pairing tire sensor and long press to start pairing process following sequence of RF/RR/LR/LF.

※ Pairing requires actual tire pressure change for up or down over 2 psi, 0.1 bar or 10 kPa within 30 sec. to activate the pairing process. Please flat or inflate the tire corresponding to pairing sequence.



(5) Return:

- Pairing is done.
- During pairing process, short press to return and long press to cancel pairing.
- When stopping the pairing suddenly, the pairing process will start from RF.
- Long press for 5 seconds to go to the main menu.



## Swaps

[1]**MODE 1:** Front and Rear Tire Parallel Exchange, to let sensors have correct display position follows mode 1 switching process.



(1) Long press to enter main menu on temperature/pressure page.



(2) Short press to switch to swap page and long press to enter it.



(3) Short press to select MODE 1 and long press to enter setting of it.



(4) Before pairing, users need to exchange front and rear tire parallel. After that, touch and hold key till heard beep sound, it means the swap process has done.

(5) Return:

- Swap has been done.
- During pairing process, short press to return and long press to cancel pairing.
- Long press for 5 seconds to go to the main menu.

[2]MODE 2: Tire Diagonal Exchange, to let sensors have correct display position follows mode 2 switching process.



(1) Long press to enter main menu on temperature/pressure page.



(2) Short press to switch to swap page and long press to enter it.



(3) Short press to select MODE 2 and long press to enter setting of it.



(4) Before pairing, users need to make tire diagonal exchanged. After that, touch and hold key till heard beep sound, it means the swap process has done.

(5) Return:

- a. Swap has been done.
- b. During pairing process, short press to return and long press to cancel pairing.
- c. Long press for 5 seconds to go to the main menu.

[3] **MODE 3:** Swap front pair of tires to rear and exchange left and right position, to let sensors have correct display position follows mode 3 switching process.



(1) Long press to enter main menu on temperature/pressure page.



(2) Short press to switch to swap page and long press to enter it.



(3) Short press to select MODE 3 and long press to enter setting of it.



(4) Before pairing, users need to make tire exchanged.

After that, touch and hold key till heard beep sound, it means the swap process has done.

(5) Return:

- a. Swap has been done.
- b. During pairing process, short press to return and long press to cancel pairing.
- c. Long press for 5 seconds to go to the main menu.

[4] **MODE 4:** Right Side and Left Side Tire Parallel Exchange, to let sensors have correct display position follows mode 4 switching process.



(1) Long press to enter main menu on temperature/pressure page.



(2) Short press to switch to swap page and long press to enter it.



(3) Short press to select MODE 4 and long press to enter setting of it.



(4) Before pairing, users need to make tire exchanged. After that, touch and hold key till heard beep sound, it means the swap process has done.

(5) Return:

- Swap has been done.
- During pairing process, short press to return and long press to cancel pairing.
- Long press for 5 seconds to go to the main menu.



# Appendix

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## 1. Signal Description

bar	Pressure unit, $1\text{bar}=0.1\text{N}/\text{mm}^2$ (Newton=kg x acceleration gravity, $\text{mm}^2$ Km square area)
psi	Tire pressure unit
kPa	Tire pressure unit
°C	Degree C unit, Degree C = (Fahrenheit-32)*5/9
°F	Fahrenheit

## 2. Unit Conversion: 0.1 bar=10 kPa=14.5psi

## 3. Trouble Shooting

Failure Phenomenon	Possible Cause	Troubleshooting steps
1. No Response after connecting to the power.	1. ACC and GND clips didn't well connect to car wires.	Make sure ACC and GND clips well connected to car wires
	2. Faulty of the display and receiver module device.	Return the product, get the new product from distributors and conduct a pairing process again.

2. Display not receiving any signal from the 4 sensors after connecting the power.	1. Failure on ID pairing or do not conduct a pairing process.	Conduct a pairing process again.
	2.Failure on the display or receiver.	Return the product, get the new product from distributors and conduct a pairing process again.
3. Display is not receiving any signal of tire sensor.	1. Failure on ID pairing.	Conduct a pairing process again.
	2. Failure on the Tire Sensor.	Return the product, get the new product from distributors and conduct a pairing process again.
4. No response on the touch button.	Failure on the receiver's circuit.	Return the product, get the new product from distributors and conduct a pairing process again.
5. Pressure (or Temperature) shows in wrong number and position .	1. Tire on the wrong position.	Ask the Tire Shop to place the tires in the correct position.
	2. Wrong ID setting on 4 tires.	Reset the ID using PAIR 2 (4 wheels) setting.
6. No alarm sound of the display module.	Failure on the receiver's circuit.	Return the product, get the new product from distributors and conduct a pairing process again.
7.The number on display shows wrong information.	Failure on the receiver's circuit.	Return the product, get the new product from distributors and conduct a pairing process again.

#### **4. Federal Communication Commission Interference Statement**

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 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 Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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.