

Tire Pressure Monitoring System

**Product Manual**

## **Preface**

Kinds of Auto electronics emerge in endlessly when the automobile is used frequently .They lodge higher require to the products in the market as persons enjoy the results of high technic. According to the professional client's demand, Our company promote the TPMS with monitoring function---TPMS002.

The manual of This product describe the main function and features, working principle, capability parameter, using way &notice of Tire monitoring ,give the help of producing ,installation and using .

## **FCC STATEMENT**

1. 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.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **Tire Pressure monitoring**

During the high speed driving the tire damage is the big problem that concerns drivers the most, which is the key cause of traffic accidents as of being hard to prevent. Statistics even showed about 70% accidents in China was due to the tire blowout, Even 80% in America, that makes how to prevent blowout become an important project for the time being. According to analysis from some experts it is vital to keep the normal tire pressure in order to avoid blowout and normal pressure could prolong the tire life and save the gasoline. That is why the TPMS will surely become the ideal tool to meet drivers ever dreamed of.

## General

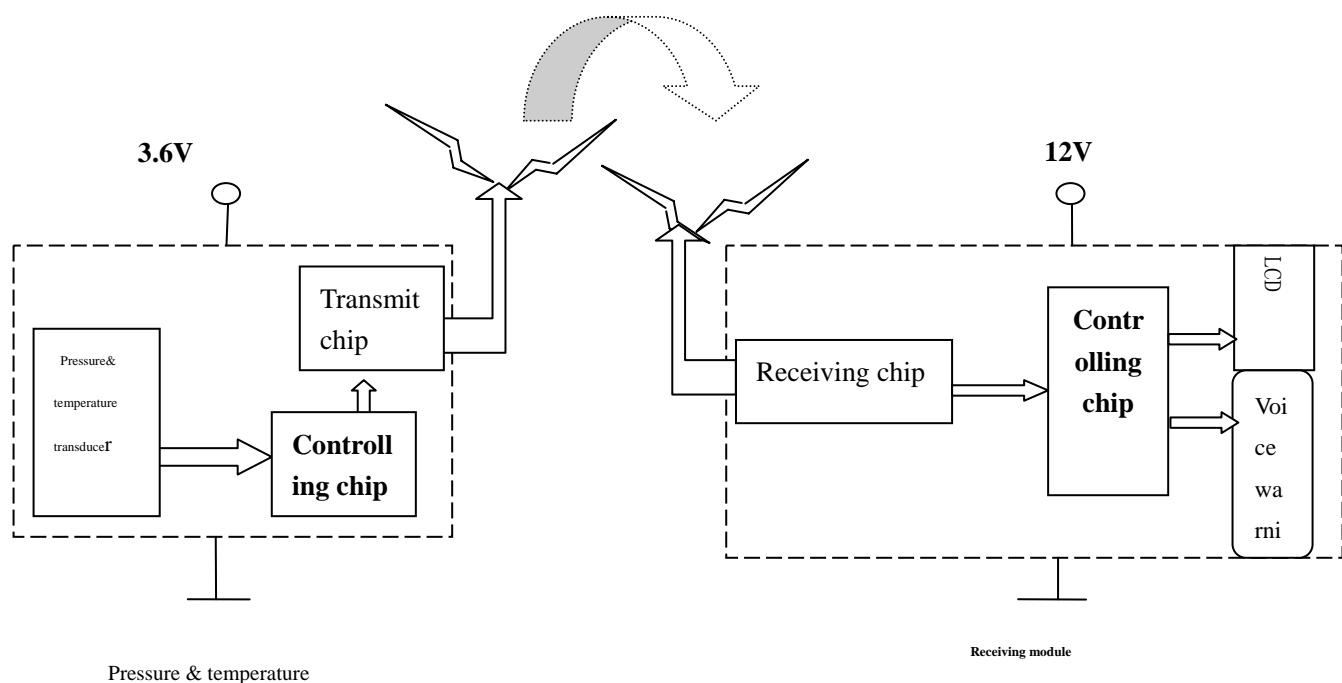
TPMS is the abbreviation of "Tire Pressure Monitoring System". It composes of several high sensitivity transducers to be equipped with each tire of the car, which could monitor tire pressure, transmit all data to the receiver in wireless way and show the data in the LCD during driving. The system would provide the advance warning automatically once leakage or abnormal pressure (whatever over high or too low) happened as a result from pinprick or loose valve, it could assure you a safer driving with longer tire life and low gas consumption, which is truly different from the traditional device like ABS, safety belt, and airbag.

Main characteristics

- ◎ Real time monitor, simple assembly.
- ◎ High tech chips & transducer components adopted to make sure the precision, stability, and reliability.
- ◎ Audio warning with vivid display, easy operation and intelligent design.
- ◎ Timely warning function for: over high tire pressure, too low pressure, over high tire temperature, Receiver malfunction.

## 2. Working Principle

### 2.1. Sketch Map



Illumination 1: working principle Sketch Map

### 2.2. Illumination

The built-in transducers fit with the steel wheel could convert the pressure and temperature signal into electrical signal that would be transmit by the wireless device.

The receiver would process the signal and display it on the monitor; as well the system could provide warning to

achieve the real time monitor during driving.

The system will give warning automatically when over high tire pressure, too low pressure, or over high tire temperature take place, so the driver is well-informed all the time of the pressure value of each tire .

Based on the system indication drivers know when to inflate or deflate the tire and drop tire temperature to avoid the accidents happening.

### 3. Main technical parameter

#### 3.1: Technical parameter

Chart 1. Technical parameter

No	items		Parameter	U/M
1	Working voltage range	Transducer working voltage	3.6	V
		Receiver Working voltage	9 ~ 16	
2	Max. power consumption	Transducer	0. 036	W
		Receiver	2. 4	
3	Temperature monitoring range			-40 ~ 100 °C
4	Pressure monitoring range			0.00 ~ 5.96 Kg/cm <sup>3</sup>
5	Temperature tolerance			5%
6	Pressure tolerance			5%
7	Working frequency			433.9 MHz

#### 3.2: Pressure range Chart 2

Chart2 Pressure range and Warning level Unit: kg/cm<sup>2</sup>

Items	Too low3	Too low2	Too low1	Normal	Over high
Pressure	0.3~0.9	1.0~1.4	1.5~1.9	2.0~3.0	3.1~5.9

#### 3.3: Temperature range Chart3

Chart3 Temperature range and Warning level Unit: °C

Items	Normal	Over high
Temperature	-20~74	75~100

## 4. How to use

#### 4.1 Keys on the panels



Illumination 1 LCD

There are two buttons on the panel for operation, one is for "mode" function(hereinafter called "button I"), the other one is for "adjusting" function(hereinafter called "button II"). The monitor is divided into two working mode including normal checking mode and learning mode. Under the normal checking mode, press button I, it will check the tire pressure and temperature status at the sequence of "front left tire, front right tire, back right tire, and back left tire". To press the button II for 3 seconds continuously entering the learning mode, which is convenient for users to confirm the tire position after tire replacement. Red LED blink when it warn.

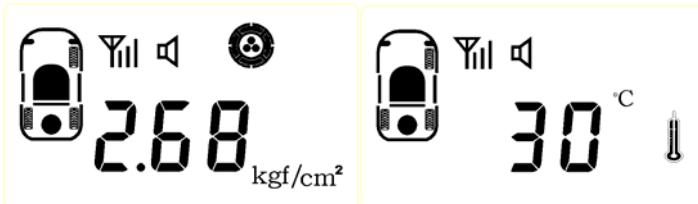
#### 4.2 Illumination of Turning on



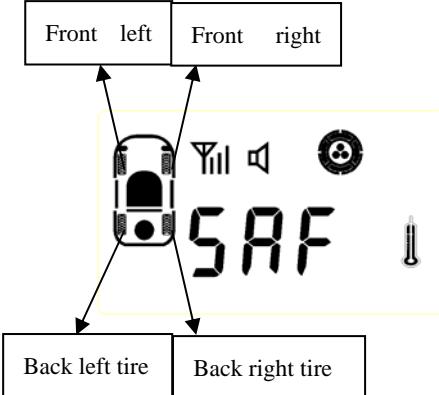
Illumination2 Screen

Once the engine is ignited, the system starts self-checking. If the overall system is in order, it displays as illumination 3 as well as buzzer play music.

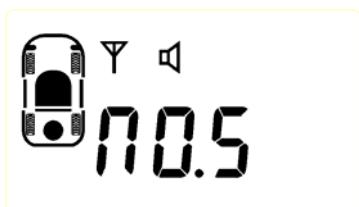
When the system goes into the normal working condition, It will start from the first tire(front left tire ) (Illumination5)and then sequently show the corresponding information of each tire .The sequence is front left tire -front right tire---back right tire ---back left tire.



Illumination 5



#### 4.3Transducer self -checking



Illumination5 Signal abnormal

If system can't connect transducer, corresponding tire and antenna signal on monitoring will blink at the rate of 0.5 second continuously(as illumination 5 indicated) accompanying with voice warning ,As well as The tire of Front left ,FrontRight, Back right,Back left have no signal, corresponding tire and antenna signal on Screen will blink Accompanying with voice warning,Backlight open .

#### 4.4Pressure ,temperature checking

##### 4.4.1Check normal



Press button I, Screen show pressure and temperature value of each tire at the sequence of "Front left tire—Front right tire—Back right tire—Back left tire". The display time is 4 seconds. The corresponding tire blink with 0.5 seconds, As well as backlight open when turn to which tire .



As Illumination 5 ,it is the data of pressure and temperature of Front left tire .If you would like check the value of tire you want know ,only press I continuously.

Illumination6 pressure,temperature Value



If each tire is normal ,The Screen will show "SAF" as Illumination7 ,Back light will close.

Illumination7 tire normal

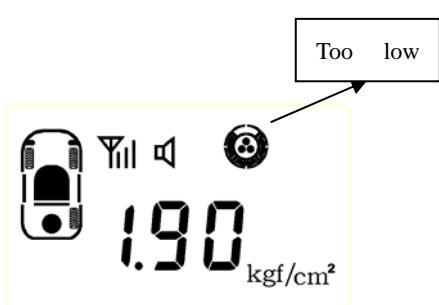
#### 4.4.2 Check abnormal

##### 4.4.2.1 Pressure abnormal

If Pressure is over high or too low ,The system will warn.

Voice will be urgent music ,As well as Backlight open

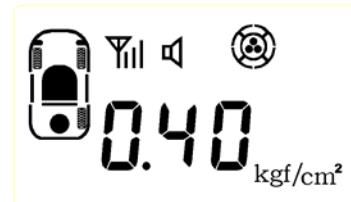
At same time ,Corresponding tire signal will blink with 0.5 seconds and show corresponding pressure and abnormal picture on Screen.If have over 1 tires abnormal ,It will show recycle .(Illumination7/8/9/10/12 are the illuminations of abnormal pressure )



Illumination 3 Too low 1



Illumination 4 Too low 2



Illumination 5 Too low 3

Illumination 6 Too low 4

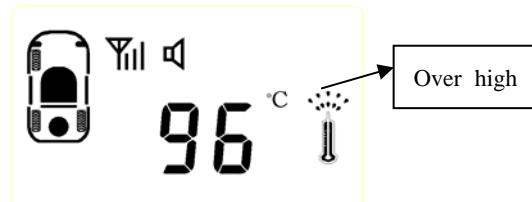


illumination12 Over high

#### 4.4.2.2 Temperature abnormal

The system will warn, if the temperature is over high

Voice:Urgent music, As well as backlight open as illumination12



illumination13 Over high

#### 4.5 Voice 5on-off

If you don't like warn by voice, you can press I about 3 seconds continuously (press with long time, will show on -off of voice illumination repeatedly). It will be ok when illumination13 be changed into illumination14.



Illumination13 voice on

Illumination14 Voice off

#### 4.6 Learning mode

Under the normal Checking mode, Press II about 3 seconds continuously, can enter learning mode .Learn Front left tire—Front right tire—Back right tire—Back left tire sequently. The signal of Antenna Will do dynamic search when learn Front left tire (as illumination20 )As well as you need deflate about 0.3 **Kg/cm<sup>3</sup>** Of Front left tire, then Screen appear illumination21 and stand for success of Learning Front left tire.The system learn Front right tire automatically. You Need deflate about 0.3 **Kg/cm<sup>3</sup>** Of Front right tire, then Screen Appear illumination22 and stand for success of Learning Front right tire. The system learn Back right tire automatically. You Need deflate about 0.3 **Kg/cm<sup>3</sup>** Of Back right tire, then Screen Appear illumination23 and stand for success of Learning Front right tire. The system learn Back left tire automatically. You Need deflate about 0.3 **Kg/cm<sup>3</sup>** Of Back left tire, then Screen Appear illumination24 and stand for success of Learning Back left tire,Restart TPMS.



Illumination20



Illumination 21



Illumination 22



Illumination 23



Illumination 24

Under learning mode, If you press II three seconds continuously, you can exit from learning mode, back to normal checking mode, tire learning don't finish.

Under learning mode, The system will back to checking mode if there are no operation about 10 minutes, tire learning don't finish.

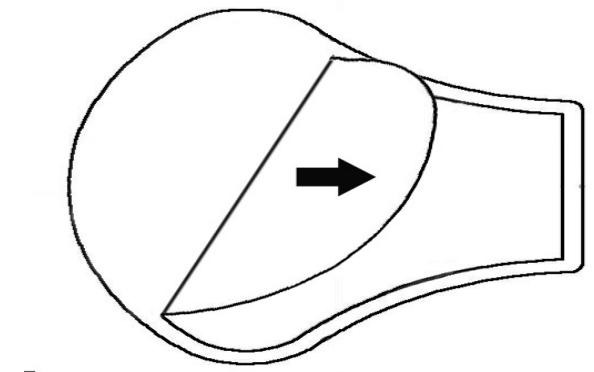
## 5Attention

- ◎ The product only show the status inside the tire ,can't prevent the accident happening.
- ◎ The life of The battery inside transducer can reach over six years ,you Can't change battery when it is no power or damaged,please change it by total part. .
- ◎ Please avoid the position of pressure transducer when install or disassemble tires.
- ◎ Fewly use tire repair oil once repair the tire,Tire repaire oil maybe let the pressure transducer inside tire broken.

**Special attention: It is normal when there are no receiving signal during parking,**

**If you don't install outside antenna!**

## 6 . Installation of screen

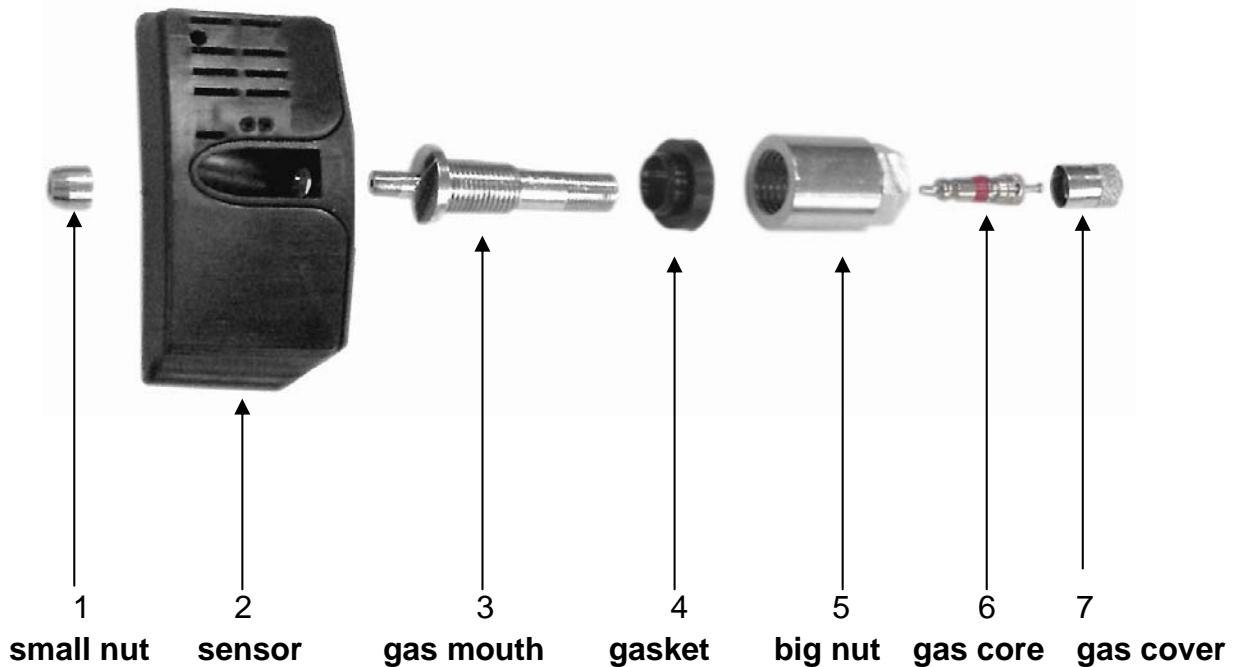


As shown above, directly installation is without supporting block, use double-faced glue to fix it on the driving platform directly.

Indirect installation is used of supporting block with double-faced glue to fix it on the driving platform .

## 7. Installation of Tire Sensor

- 7.1 Use jack to peak the car
- 7.2 Release gas of the tire , removed the original gas mouth
- 7.3 Identify the location and the tires corresponding sensors, sensors numbers expressed tires location as in the figure below, down sensors gas mouth (7)
- 7.4 Down the the big nut (5) and gaskets (4) from sensor gas mouth, Put **gas core** (6) into the air gas mouth (3), press the side of the tire, make the sensor gas mouth through out from the inside gas mouth of the steel , put gaskets (4), and screw tight large nut (5).
- 7.5 Adjust sensors, make the sensors on the round wheel with the two feet up, and then tighten a small nut mouth sensors gas (1), but rather to avoid heavy damage or lead to the leak sensors. Installation of gas beak cap (7);
- 7.6 Collate tires side, to avoid doing or damage plastic parts births sensors, and then charge for tires, so tire balance, and finally back to the car tires installed;
- 7.7 **Open car power (no launch car), and then to release gas or inflatable tires. Then, in monitors observed the pressure and temperature of the tires; Activated click can also observed other inflatable tire pressure and temperature.**



the installation of the gas mouth inside steel tire

**Note :** In launchers installation process, launchers are 1, 2, 3, 4 mark, "1" represents the location of the installation for the Front left tire, "2" represents the location of the installation for Front right tire, "3" represents the location of the installation for the Back right tire, "4" representing the location of the installation for back left tire .

#### Four: technological support and contact

**Special attention: It is normal when there are no receiving signal during parking,**

**If you don't install outside antenna!**