TPMS Introduction

长城汽车
中国造 长城车

長城品質

TPMS Type

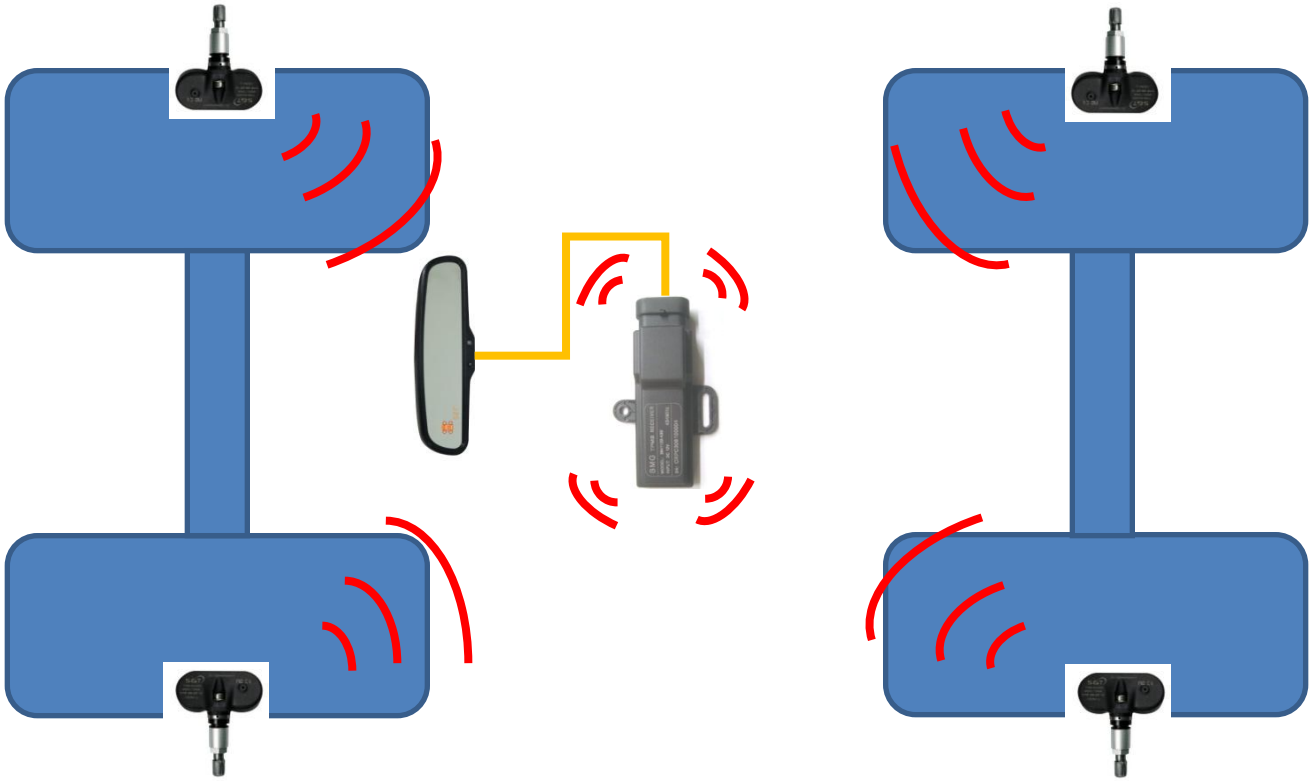
TPMS

Pressure-Sensor Based TPMS（shorten for:PSB TPMS, or directness type TPMS）,namely this system monitors tyre pressure by pressure sensor mounted inner tyre thus to display information or warning.

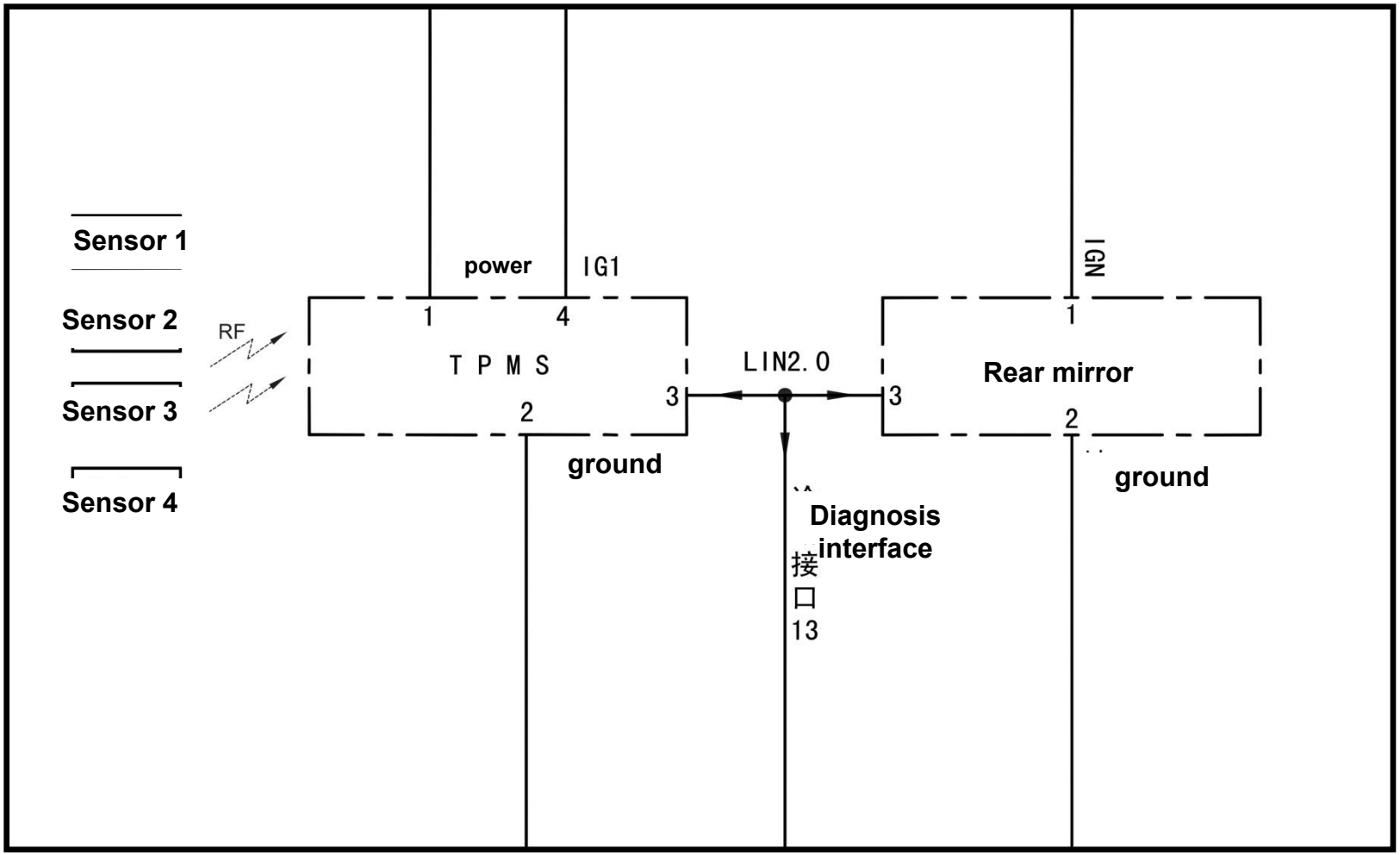
Working principle

When vehicle speed exceeds 20Km/h,type pressure sensor begins to work. When vehicle stops for 10 minutes, sensor will entre “sleep”mode for power saving.

Schematic Diagram



Circuit Diagram



System Function

- Warning Function
  - ► tyre pressure low：25 % lower than standard value
  - ► tyre pressure high: 25 % higher than standard value
  - ► fast air leakage: pressure reduces 20kPa in 12s
  - ► over high temperature：when >75˚C
  - ►signal lost：when receiver not receive signal, showing“

- Other Function：
  - ► sensor battery voltage low or stop working, remind user to replace sensor
  - ►LIN line and power line self diagnosis with code.

Attn: standard value is 230kPa when production.

System Component

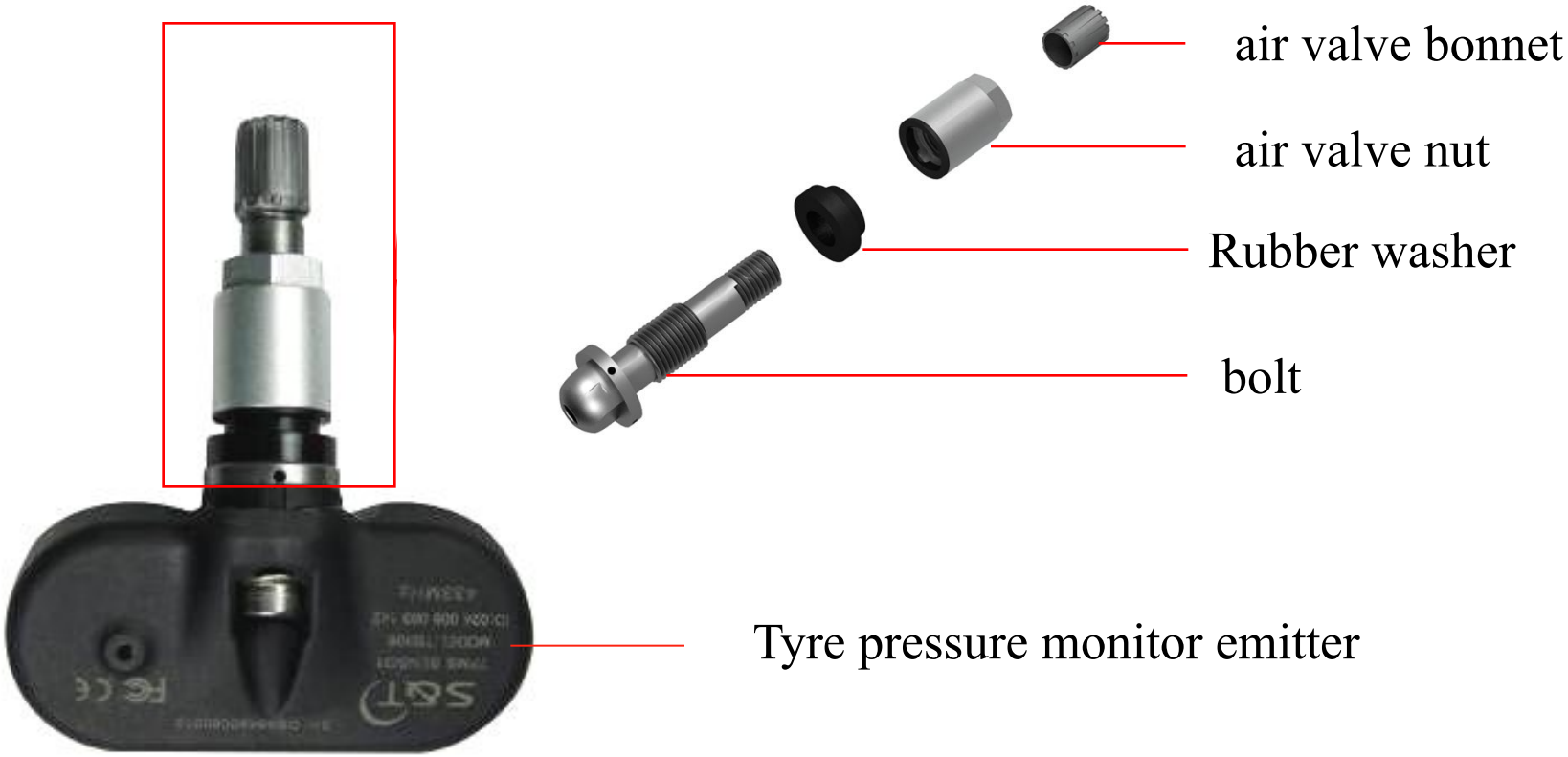
Tyre pressure sensor

Pressure receiver

Rear mirror

Tyre Pressure sensor

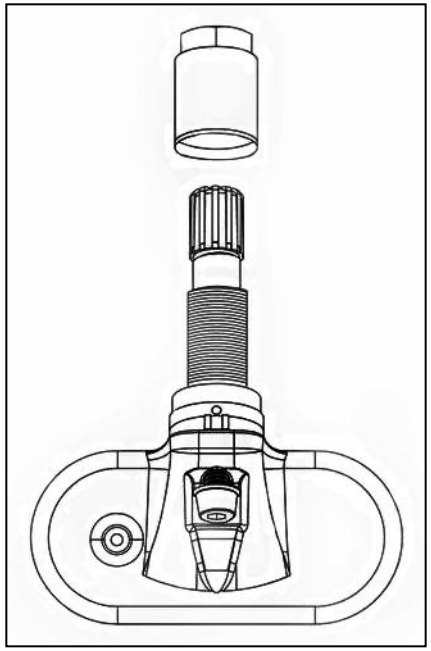
The sensor is mounted inside each wheel to monitor tyre pressure and temperature, then send signal to tyre pressure receiver through RF

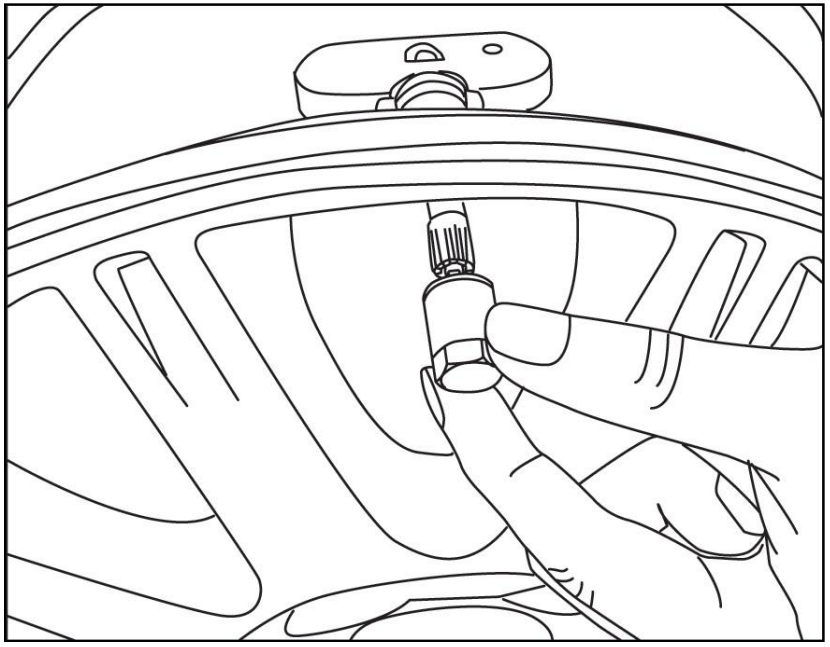


Location: don’t forget tyre balance operationg before mounting

Sensor Mount

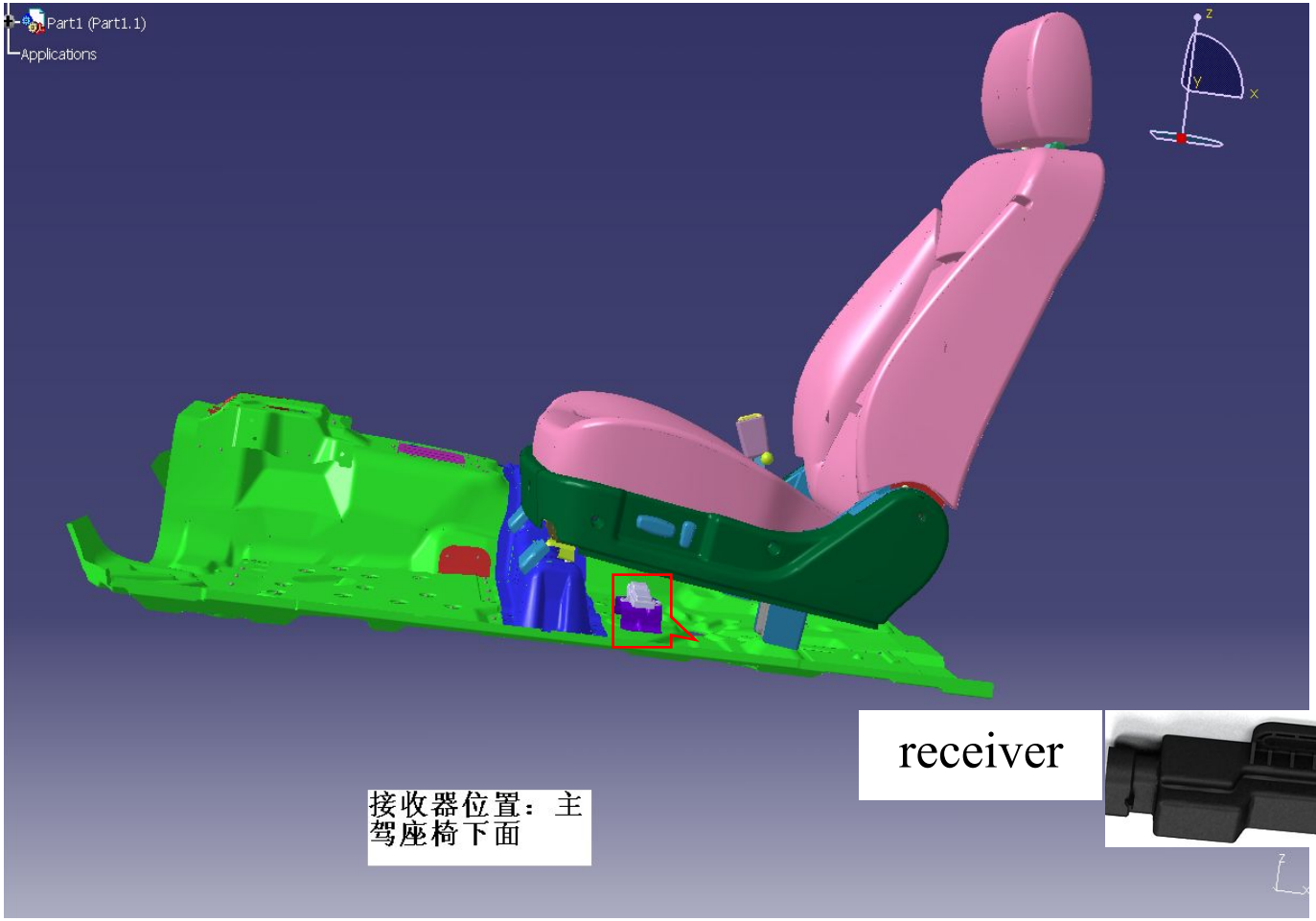
① screw down nut, then mount air valve nozzle through wheel hub hole
② screw up nut, then tighten with torque 3.8N.m（±0.3）by sleeve





After mount, do tyre balance operation.

Receiver Location



TPMS Maintenance

Ⅰ. TPMS Initialization Operation Guide

Ⅱ. Replace tyre pressure sensor

Ⅲ. Tyre rotation

Ⅳ. Lin bus self-diagnosis function

TPMS Program Tool

TPMS Program Tool

Tyre position

Tyre position indicator

Enter

Function indicator

Function button

switch

Parameter:

1.dimension: **125×60mm**

2. Operating Tem:-20℃~70 ℃

3. LF frequency: **125KHz±2KHz**

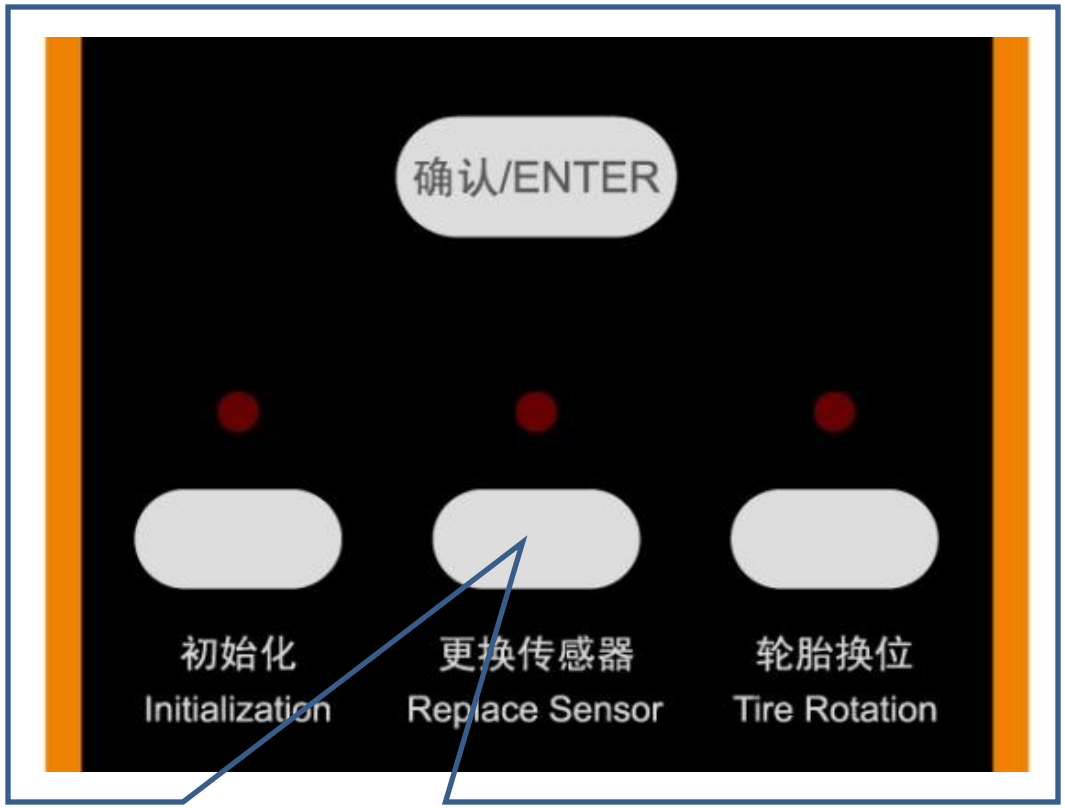
4. RF frequency: **433.92MHz±100KHz**

5. Input voltage:**9V**

6. Working current: **<3mA**

7.LF spring distance: **L<0.5m**

8.RF spring distance :**L<2.0m**



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Function Button

Ⅰ. TPMS Initialization Operation Guide

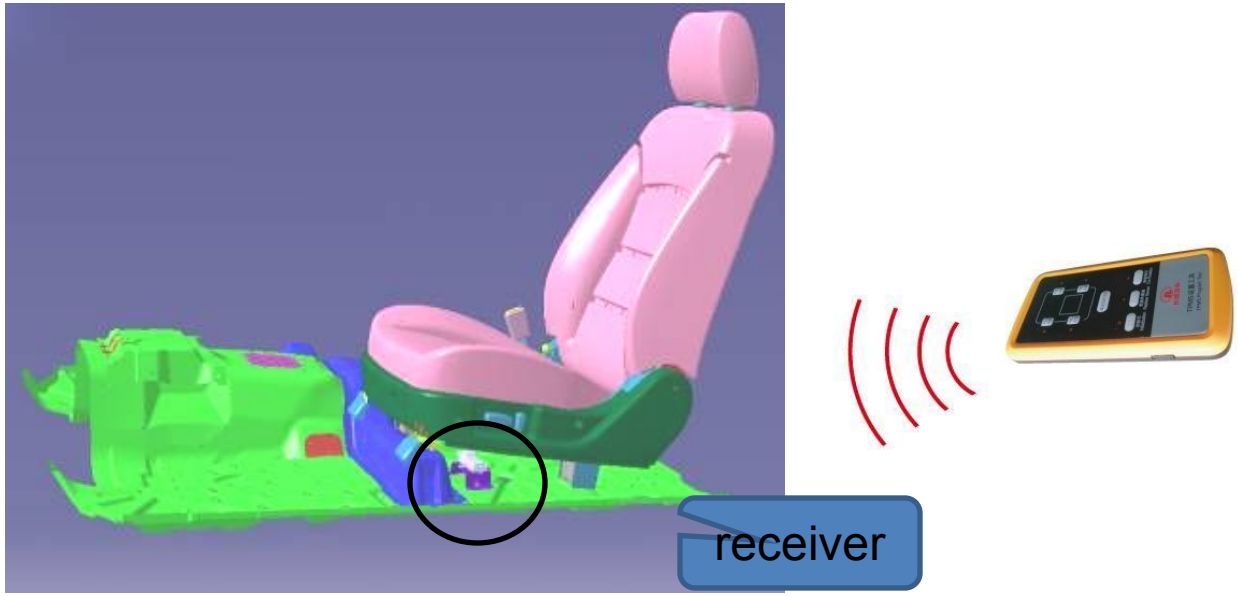
1. Initialization (for user who add the system after bought can use this function)
   ATTN: before initialization operation, please connect power on TPMS, and with ignition key at “ON” gear

1.1 after mounting battery, power on TPMS program tool, system enters self-checking process, all indicator lamps light on, then off, initialization indicator lights on.

1.2 put TPMS program tool close to tyre valve nib within 50 cm to set sensor to be registered, press down corresponding tyre position button on program tool like “FL”, “FR”, then tyre position lamp will flash which means it’s waiting for signal from sensor as showed by right figure.
After register succeeds, tyre position lamp will keep on; TPMS program tool will cancel spring if not receiving sensor signal in 10s.

1.3 then register the other tyre position, of course, the lamps will keep on after register.
1.4 after 4 tyre position register successful, all 4 lamps light on as showed by right figure.

1.5 after 4 tyre indicating lamps light on, put TPMS program tool close to the receiver locating under driver seat (below figure) within 50cm, press down “ENTER” button, then all 4 tyre position lamp will flash in circle that sending out signals from registered sensor to receiver for saving.



Receiver


BMG TPMS RECEIVER
MODEL: 3641120-K80
INPUT: DC 12V 434MHz
SN: CRPC308100004

1.6 then there will be “SET” displayed in rear mirror, which means initialization successful as showed by below

1.7 press “SET” button in the rear mirror with 30s as confirmation, then enter tyre pressure status display in circle, each interface will be shown for 3s as below figure.
1.8 after register successful, ID information memorized in TPMS program tool could be eliminated by pressing down “ENTER” button, then prepare for next register operation; also ID information memorized in TPMS program tool will be eliminated if not press down “ENTRE” button in 5s.

Pressure display interface

Ⅱ. Replace tyre pressure sensor

2. Replace sensor funciton

It's used for replacing damaged or malfunction sensor.

2.1 example: replace sensor for tyre FL. Replace malfunction sensor with new part.

2.2 press "replace sensor" button, function lamp will light on as right figure

ATTN: before operation, ensure TPMS system power on and ignition switched to on gear

2.3 put TPMS program tool close to tyre valve nib within 50 cm, then press down corresponding tyre position button on program tool like “FL”, “FR”, then tyre position lamp will flash which means it’s waiting for signal from sensor, tyre position lamp will keep on as showed by right figure.

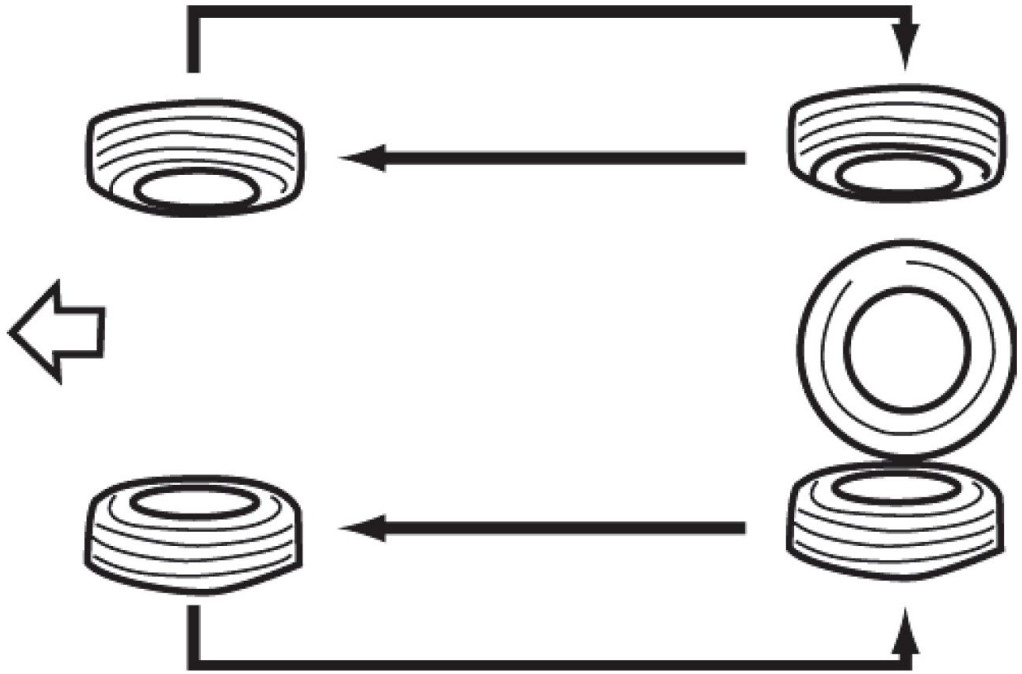
2.4 put TPMS program tool close to the receiver locating under driver seat within 50cm, press down “ENTER” button, then all 4 tyre position lamps will flash in sequence that sending out ID signals from sensor to be replaced to receiver for saving, after that there will be “ SET” displayed on rear mirror which means operation ok.

2.5 press “SET” button in the rear mirror with 30s as confirmation, then enter tyre pressure status display in circle, as below figure.

Ⅲ. Tyre rotation

3. Tyre rotation

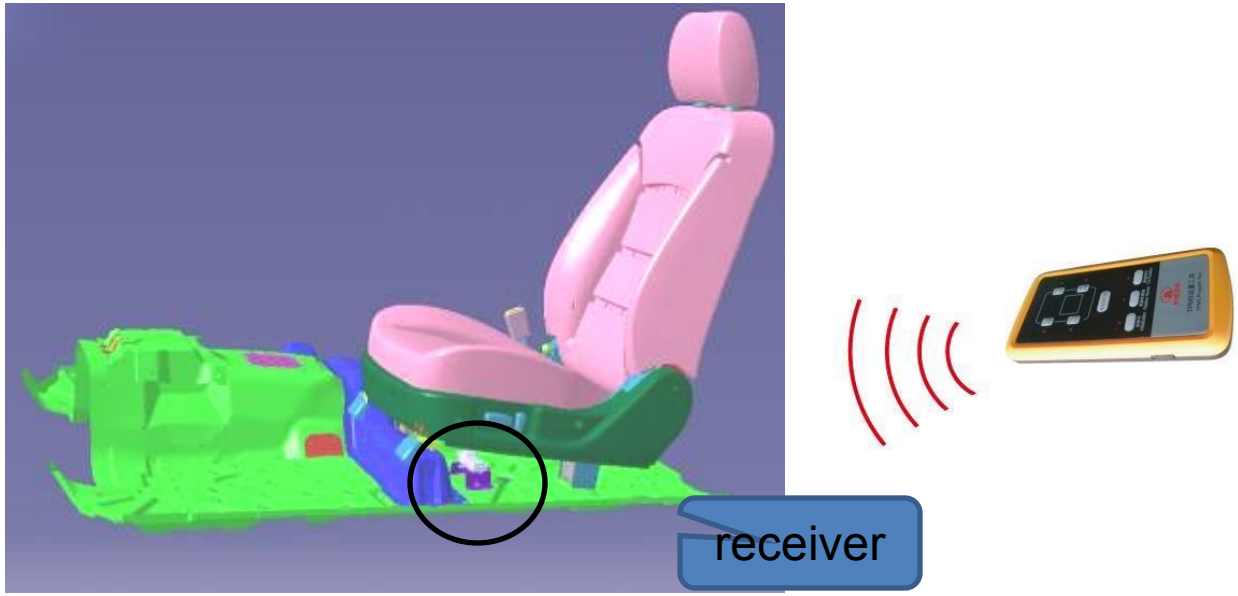
there is no need to remove tyre pressure mounted inside tyre when operating,only with TPMS program tool to adjust and reset orignal emitter position that system could work normally.



Operation Steps:
3.1 switch on ignition, power on TPMS program tool, press down tyre rotation function button, indicator will light on.

3.2 press down tyre position button in sequence, then lamps will be on which means this two tyres will be exchanged, pressing tyre position button could cancel the funciton as right figure.

3.3After selecting tyres to be exchanged each other, put TPMS program tool close to the receiver locating under driver seat within 50cm, press down “ENTER” button, then all 4 tyre position lamps will flash in sequence that sending out ID signals from sensor to be replaced to receiver for saving,



3.4 there will be “SET” showed by rear mirror after receiver receiving signal
3.5 press “SET” button in the rear mirror in 30s as confirmation, then enter tyre pressure status display in circle, as below figure.
ATTN: during setting process, if “SET” button in the rear mirror not be pressed down within 30s, operation failure which means it should done from beginning.

Ⅳ. Lin bus self-diagnosis function

in case when receiver and Lin line or IGN power line malfunction, rear mirror will entre into self diagnosis function

All 4 tyre indicators show red color and flash for 5s（0.5S off, 0.5S on）, buzzer warns 5 times（sound 0.5S，silence 0.5S）tyre pressure warning sign ” ” and ”function code will come on.

Ⅳ. Lin bus self-diagnosis function

Code	Meanings	Solution	remark
E-1	IGN over high voltage of power line :＞16V	Check battery	
E-2	IGN over low voltage of power line:＜9V	Check battery	
E-3	LIN line shorted to power	Check LIN line	
E-4	LIN line shorted to ground	Check LIN line	
E-5	LIN information not be received after 800±200ms when 1st power on system.	Check LIN line	
E-6	LIN information not be received after 16s in vehicle running status	Check LIN line	
	Sensor information not be received when 1st power on system.	1.Receiver power off causes storage information clear, it will come back when entering driving model;2 senor not be initialized	