Tire Pressure Sensor Programming Tool

(MateTPMS)

User Manual

Thank you for choosing our company's handheld programming tool, please read the product manual carefully before using the product, and wish you a safe driving!

I. Matters needing attention

1. Please read this instruction manual before installing and using this product to prevent the system from working properly after installation. If you have any questions, you can call the dealer or customer service for details!

2. This product can program the tire pressure program of MT-Sensor according to the specified model. Sensors can effectively monitor tires to prevent tire blowouts, but cannot guarantee to avoid any unexpected accidents. Users should use this tool to ensure that the vehicle is running under normal tire pressure conditions, and avoid using tires of poor quality or severe wear.

3. Users are not allowed to open, repair or modify this product by themselves, in order to avoid damage to the internal circuit and cause failure.

4、After the user is equipped with the MT-Sensor sensor, we still strongly recommend the user to regularly check the vehicle tires to ensure driving safety.

II. Product introduction

2.1 Introduction to the working principle

According to different models or sensor OEM numbers, the system will program the program suitable for the original tire pressure to the MT-Sensor sensor through the corresponding protocol to replace the original vehicle sensor.After the sensor collects the pressure and temperature data in the tire, it is sent out by radio frequency, and the information is displayed on the original car display.

When the pressure or temperature in the tire is higher or lower than the preset alarm threshold of the original car, the central control system will automatically issue a corresponding alarm to remind the user to pay attention to the tire status and deal with it in time, so as to avoid the accident of puncture and damage to the tire occur. Through the operation of this system, it can effectively prevent tire blowouts, reduce the hidden danger of tire safety accidents, reduce fuel consumption, reduce tire wear and prolong tire service life.

The main value is that the replaced sensor protocol is completely consistent with the original tire pressure sensor protocol, completely replacing the original tire pressure sensor to effectively reduce operating costs.

2.2 Special instructions for using the product

1) At present, the models in the system include about 95% of the models on the market, and some models do not support tire pressure replacement parts. Before starting the operation, please start "Model Entry" to check whether there is a model year of this model or start "OEM Entry" to check whether there is a corresponding OEM number.

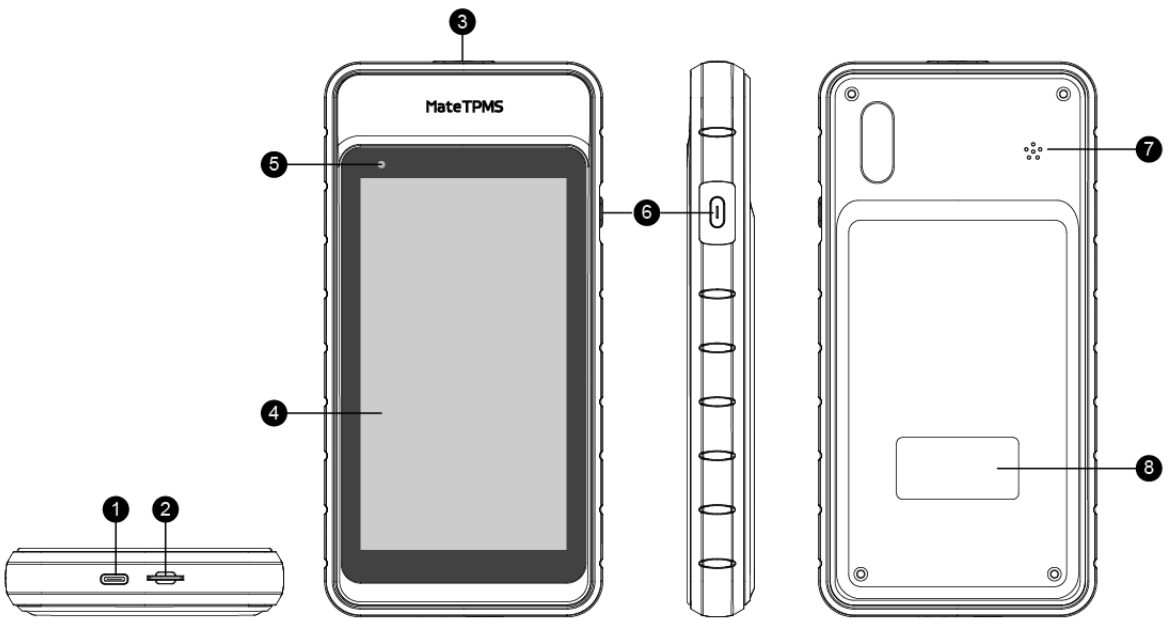
2) Activate the original tire pressure sensor, please keep the distance within 20cm, so as not to activate the sensors of other tires by mistake.

3) MT-Sensor can support activation and programming installed in the tire, and can also support activation and programming under normal atmospheric pressure. It is recommended to perform programming operation before installing the tire pressure sensor to avoid repeated tire removal due to abnormal MT-Sensor.

4) Some model IDs are cumbersome to learn. It is recommended to use cloned original vehicle sensor IDs, which can avoid the learning process.

2.3 Product composition

1. MateTPMS programming tool host



1. Type C charging interface

2. Micro SD card slot

3. TPMS induction antenna

4. LCD Capacitive touch screen - 5.5 "

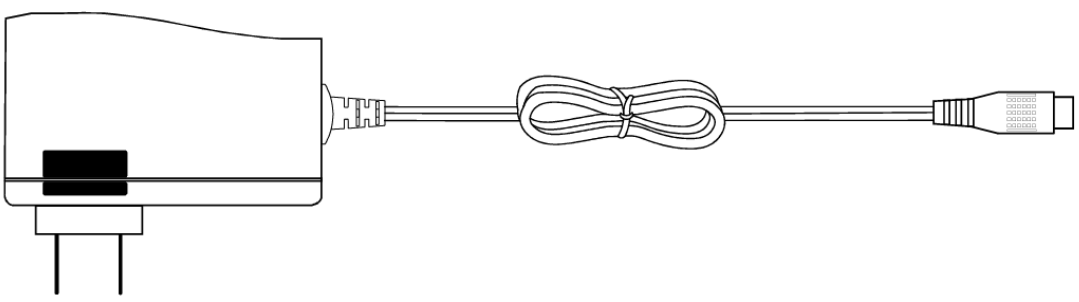
5. Status Indicator
   Charging - green light flashes;
   Fully charged - green light is always on.

6. Power/Lock Screen Button
   Long press to turn on/off the device;
   Short press to lock screen.

7. Buzzer

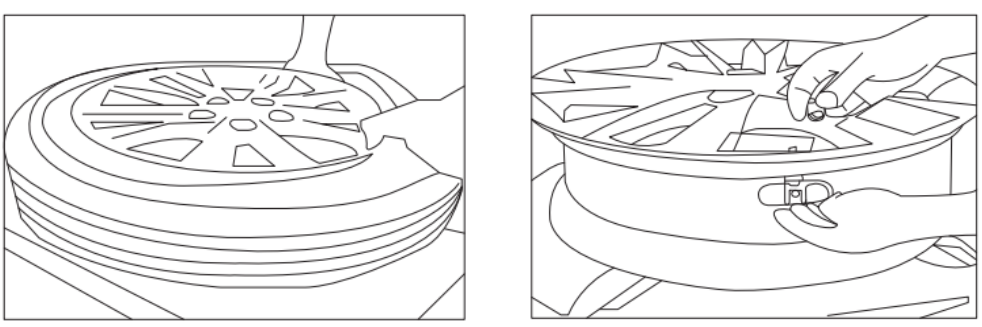
8. Stickers

2. Type-C 5V charger (optional)

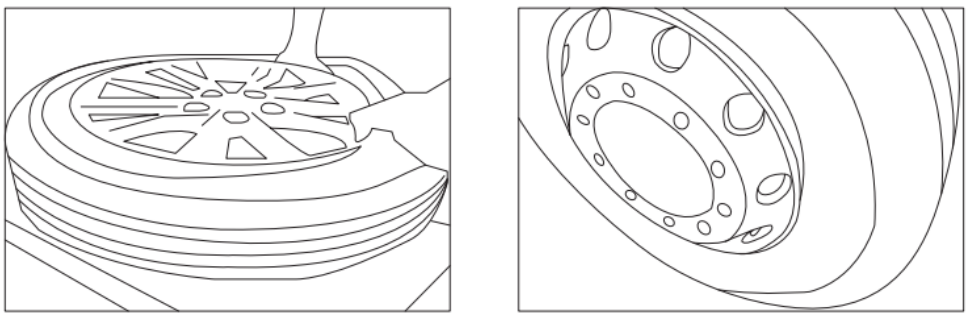


(The above products are subject to change in shape without prior notice depending on the availability of parts)

III. Installation Instructions



① Remove the tire from the car, deflate the tire, and strip the tire and wheel;
② Remove the sensor valve nut, insert the sensor into the hub air hole, install the valve nut back and tighten;



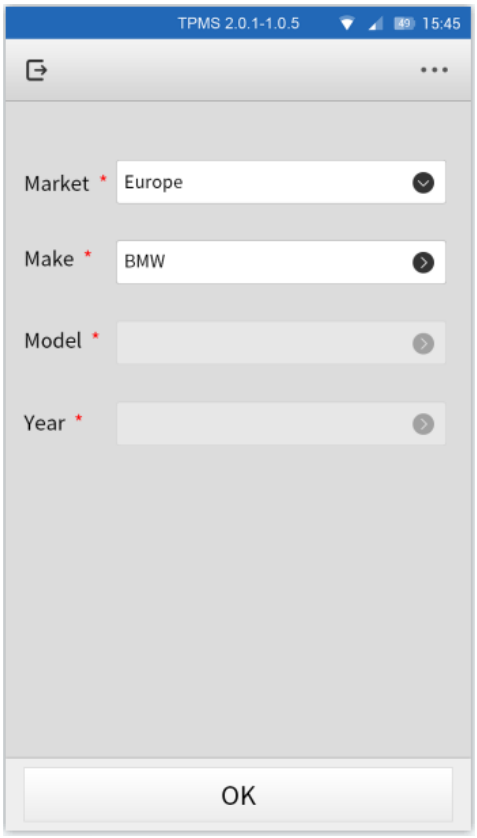
③ Put the tire back on the hub and inflate it to normal air pressure;
④ Use soapy water to test for air leakage, if there is air leakage, please re-tighten the screws;

IV. Activation & Programming function for Model Entry

If you confirm the vehicle model and year, you can start from "Model Entry". If you do not confirm the specific year of the model, you can start from "OEM Entry". Generally, the OEM number is on the original car sensor (see the chapter on OEM activation programming function for details)

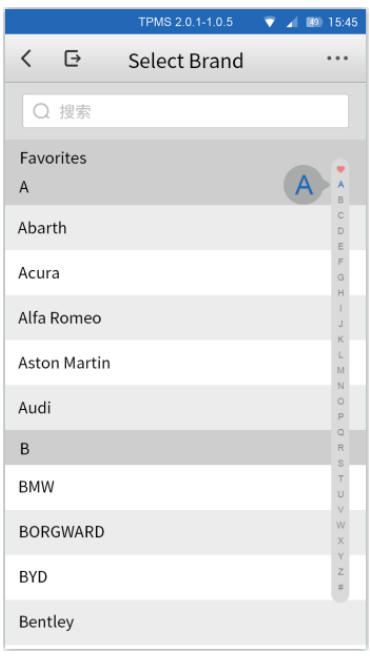
4.1 Tigger of "Model Entry"

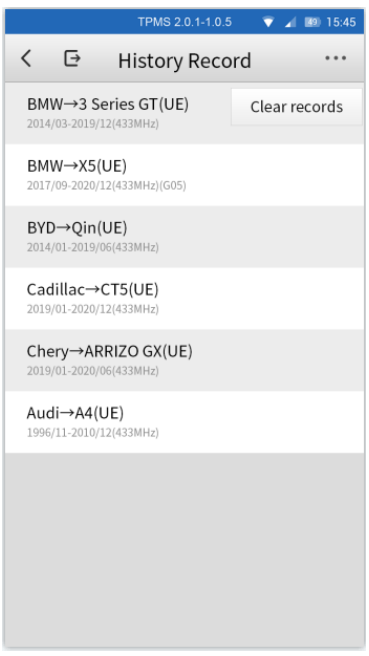
Click to start the app, the interface is as follows:



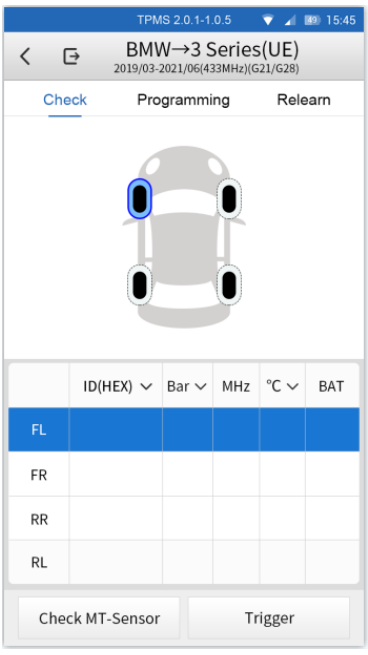
The top left of the status bar is the "Model Entry" application version number, and the right side is the "Program Data" version number.

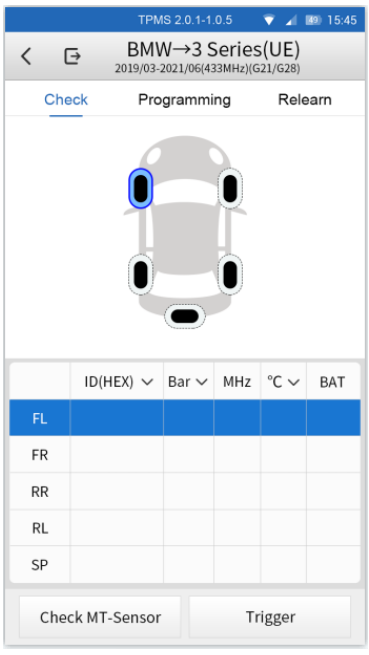
Brands can be searched by sequence, by entering initials manually, or by exact search. Brands that are frequently used can be long-pressed to be favorites (long-pressed to cancel favorites). You can also click in the upper right corner to search from the history.

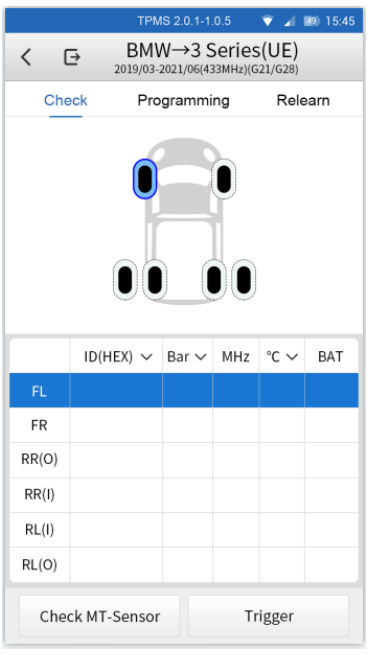




Select the brand-model-year of the vehicle, and the interface is as follows:

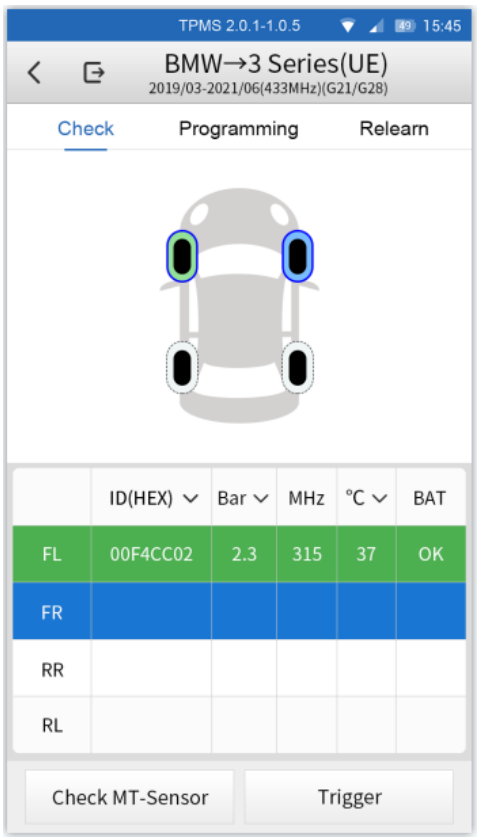






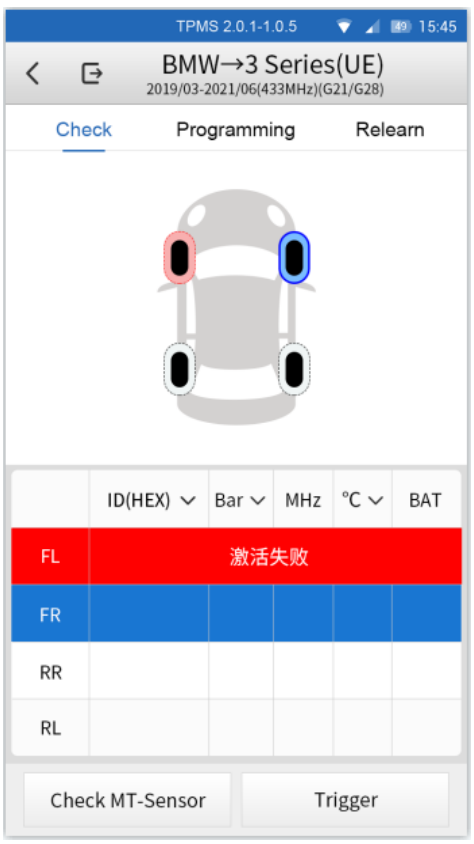
4wheels 5wheels 6wheels

Place the original car sensor within 10cm of the tool, click the "Trigger" button, the device will trigger the sensor to transmit signals through low-frequency emission, and the activation completes the display interface as follows:



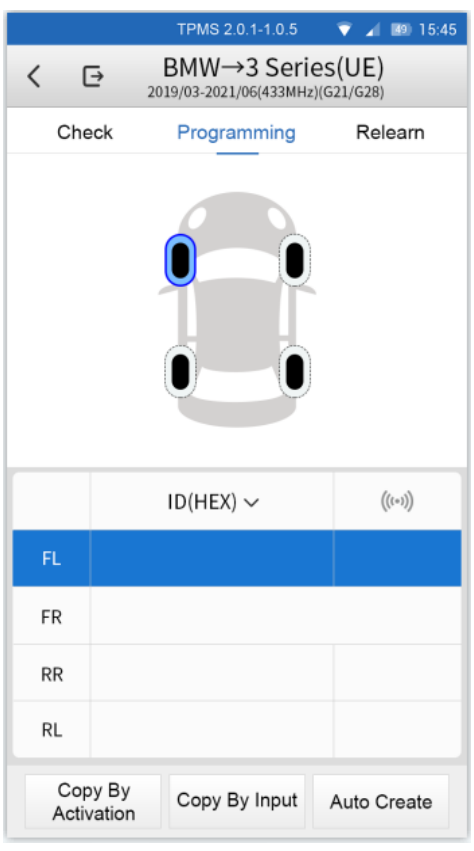
Note: The activation function can activate the original vehicle sensor, and can also activate the MT-Sensor sensor.

If the activation fails, the model selected may not match the sensor program, or the sensor is too far from the tool. Adjust the position and try again.



4.2 Programming of "Model Entry"

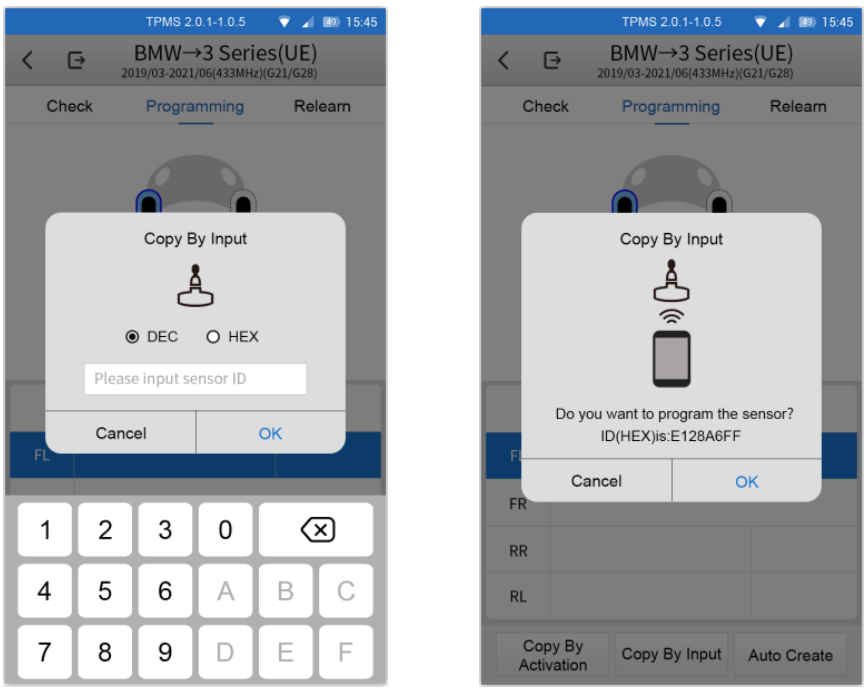
Click "Programming" to enter the interface as follows:



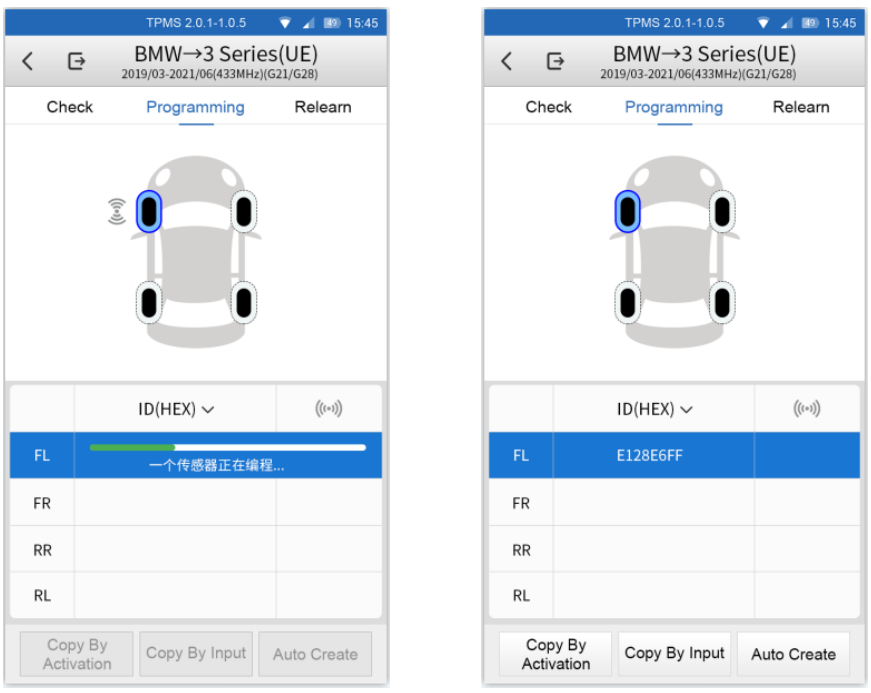
Programming IDs can be copy by input ID or auto create or by copy activated ID replication.

4.2.1 Copy By Input of "Model Entry"

Click "Copy By Input", enter the ID in the pop-up box, and try to input the same ID as the original sensor, which can save the learning step. (ID is generally printed on the original car sensor, 6~8 digits + letters A~F).



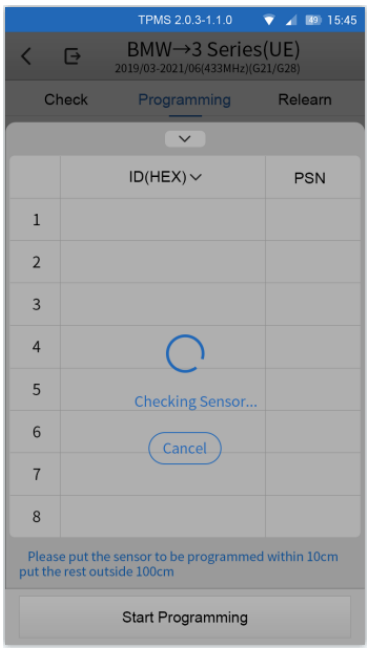
After inputting, click "OK", the screen starts to display the sensor programming progress, and after completion, the written sensor ID is displayed.

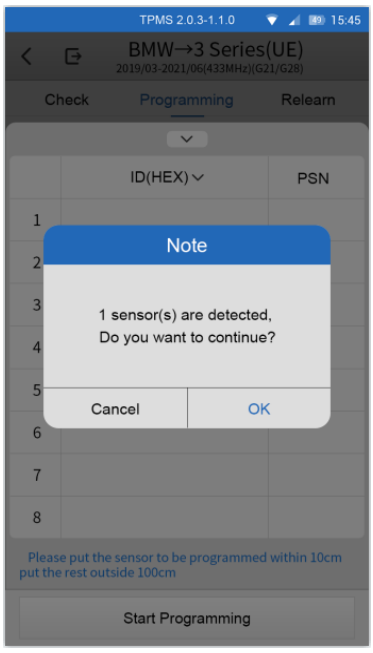


4.2.2 Auto Create of "Model Entry"

Click "Auto Create", the interface is displayed as follows:

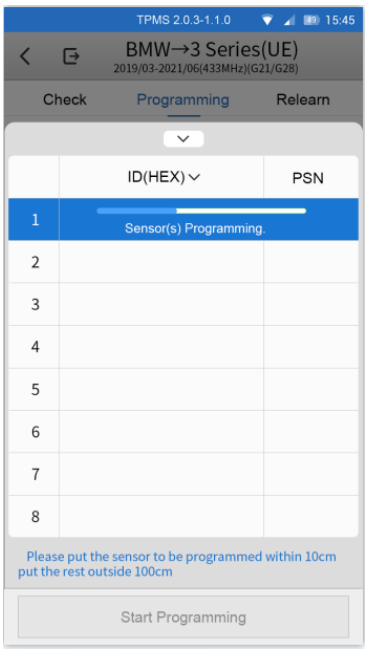
Place the sensors that need to be programmed within 10cm, and the sensors that do not need to be programmed beyond 100cm, so as to prevent the wrong sensor from being programmed as much as possible. Click "Start Programming". The tool automatically starts searching for sensors within range. When the sensor is found, a prompt will pop up.





Click "OK" to continue programming. A progress bar is displayed during the programming process, and after completion, the programming ID and PSN code are displayed.

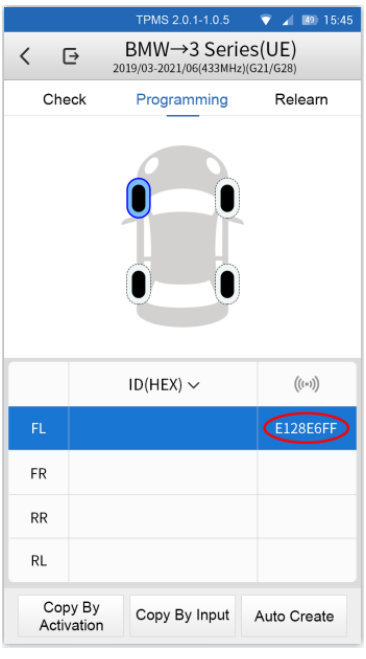
Note: The PSN code is an internal code, which is consistent with the number printed on the sensor. It is only used to confirm the query against the sensor, and has no practical use in tire pressure learning.



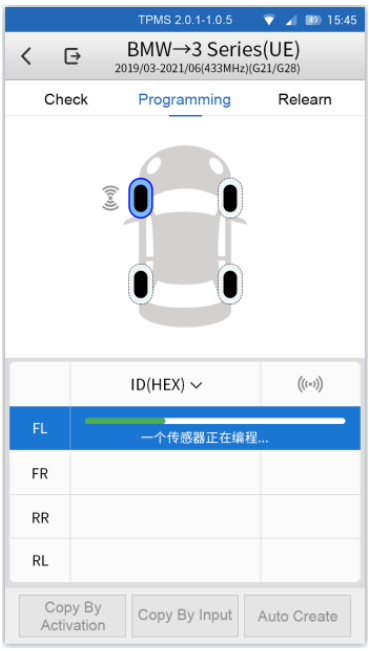
4.2.3 Copy By Activation of "Model Entry"

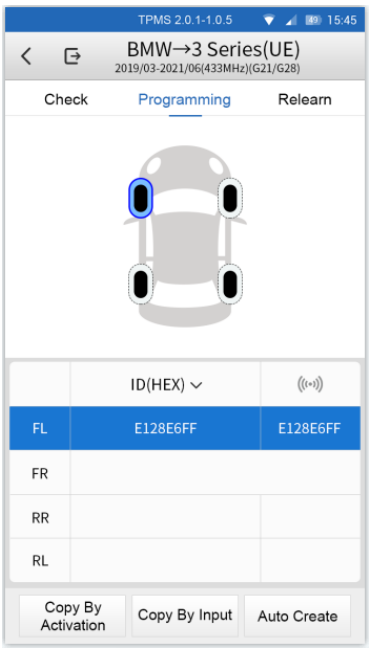
Click "Check-Trigger" to activate the original car sensor first, and then enter "Programming". At this time, you can see the sensor ID in the right column at the corresponding position of the activated tire.

Click "Copy By Activate", which saves the operation of manually inputting the ID, and directly copies the ID just activated for programming.



Click "OK" to start to display the sensor programming progress. After completion, the copied and written sensor ID will be displayed.





After the programming is completed, you can see that the IDs on the left and right are the same. Indicates that the replication is successful, that is, the new sensor can directly replace the old sensor.

About the usage scenarios of the three programming methods

1. First try to activate the original car sensor, if it can still be activated, try to use the "Copy By Activation" method, which can avoid possible errors caused by manual input and save the learning process. After the programming is completed, it can be directly installed on the tire and can be used.

2. If the original vehicle sensor cannot be activated, you can remove the sensor, check the ID of the original vehicle sensor, and user "Copy By Input" to input the original vehicle sensor ID for programming. This method also does not require learning.

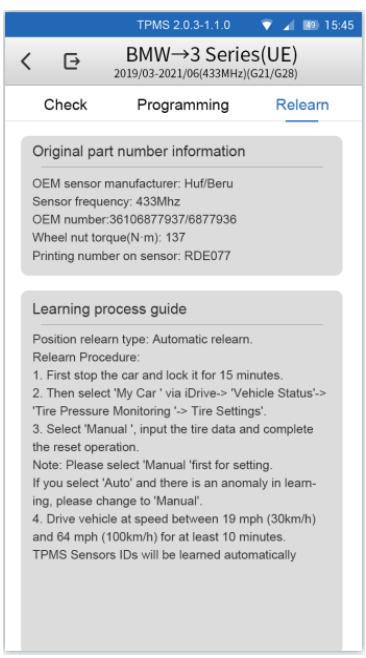
3. If the original car sensor cannot be activated and the sensor ID cannot be seen, it is recommended to use the "Auto Create" method. This method can automatically apply the appropriate sensor ID, but it needs to be learned again. (See the "Learning ID" chapter for details on the learning process)

The printing position of the original ID and OEM number of different sensors is different. The image below is for reference only.

4.3 Relearn ID

Click "Relearn", you can enter to view the car's OEM number, Wheel nut torque, printing number on snesor, new sensor relearning matching method and other information.

Different models have different ways of relearning ID, including Automatic relearn, Stationary relearn and OBD relearn. Take BMW X3, 2017/01-2020/12 (G01/G08) as an example:



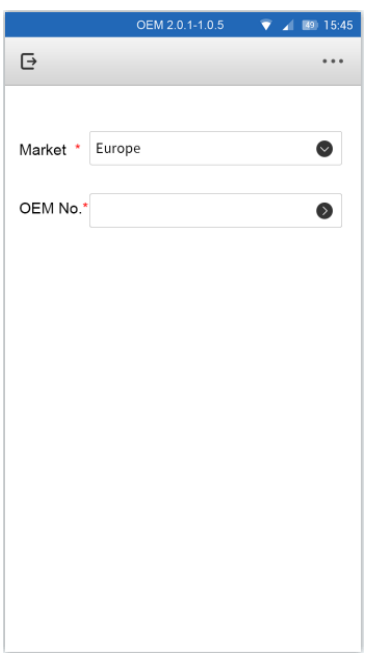
Note: If copy by activation or copy by input the original vehicle sensor ID, it can be used directly without relearning. If the non-original vehicle sensor ID (or the ID replaced before) is created automatically or by input, you need to operate according to the relearning process guide before matching.

V. Activation & Programming function for OEM Entry

The OEM number is the original manufacturer's part number. Pure numbers or a combination of numbers and letters can be seen in the sensor. Without confirming the model and year, it is recommended to use the OEM number to enter the activation and programming functions.

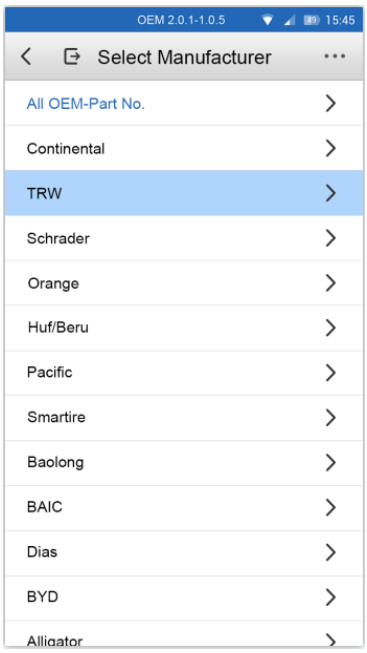
5.1 Tigger of "OEM Entry"

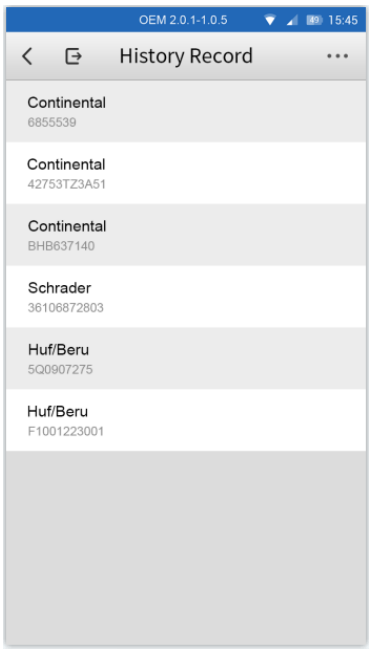
Click  to start the app, the interface is displayed as follows:



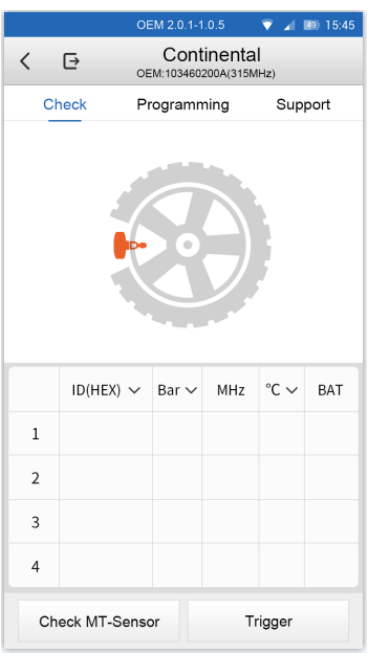
The top left of the status bar is the "OEM entry" application version number, and the right side is the "programming data" version number.

The OEM number can be searched according to the Manufacturer name, or you can enter the selected supplier to manually enter the fuzzy search. You can also click in the upper right corner ••• to search from the history.

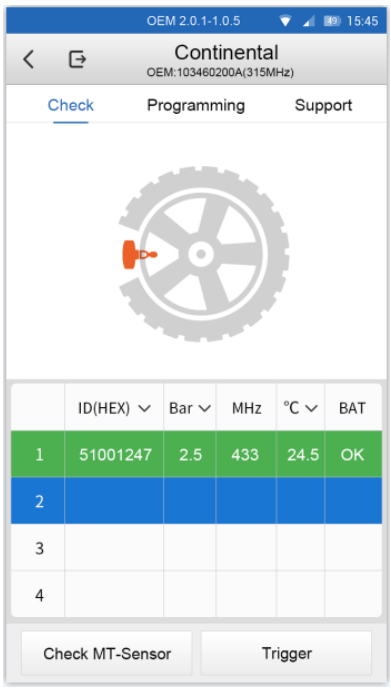




After selecting the correct OEM number to enter, the interface is as follows:

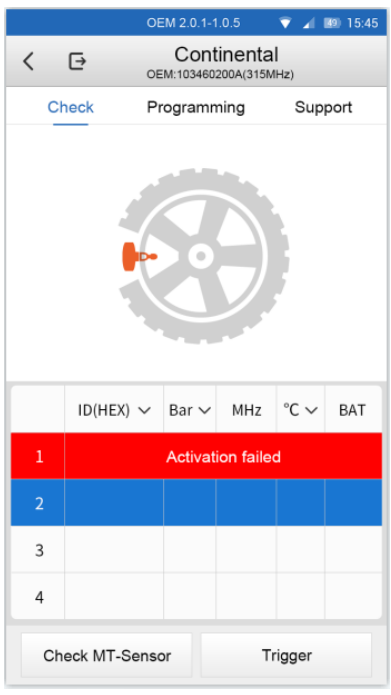


Place the original car sensor within 10cm of the tool, click the "Tigger" button, the device will trigger the sensor to transmit signals through low-frequency emission, and the activation completes the display interface as follows:



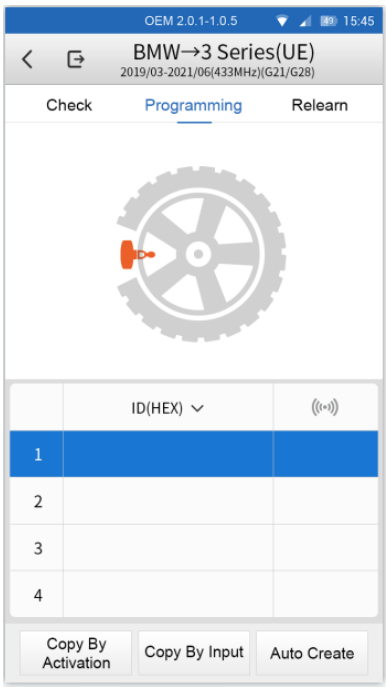
Note: The activation function can activate the original vehicle sensor, and can also activate the MT-Sensor sensor.

If the activation fails, the model selected may not match the sensor program, or the sensor is too far from the tool.



5.2 Programming of "OEM Entry"

Click "Programming" to enter the interface as follows:



Programming IDs can be copy by input ID or auto create or by copy activated ID replication.

5.2.1 Copy By Input of "OEM Entry"

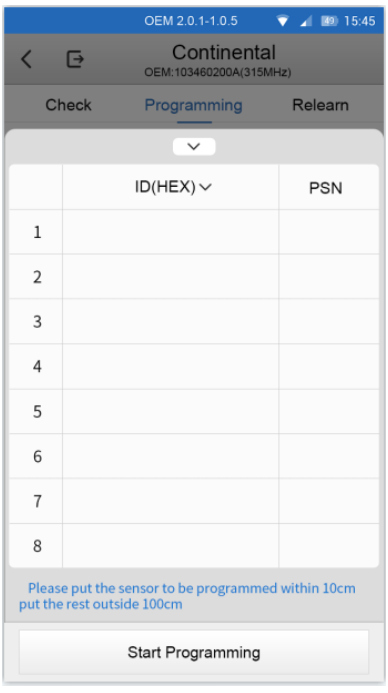
Click "Copy By Input", enter the ID in the pop-up box, and try to input the same ID as

the original sensor, which can save the learning step. (ID is generally printed on the original car sensor, 6~8 digits + letters A~F).

Specific process: omitted. (The method is the same as Copy By Input of "Model Entry", see 4.2.1 for details)

5.2.2 Auto Create of "OEM Entry"

Click "Auto Create", the interface is displayed as follows:



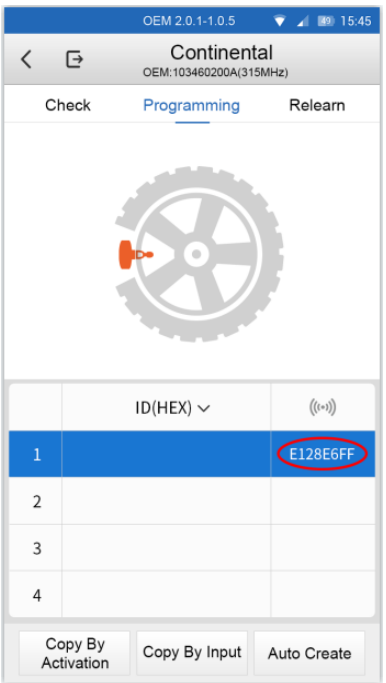
Place the sensors that need to be programmed within 10cm, and the sensors that do not need to be programmed beyond 100cm, so as to prevent the wrong sensor from being programmed as much as possible. Click "Start Programming".

Specific process: omitted. (The method is the same as Auto Create of "Model Entry", see 4.2.2 for details)

5.2.3 Copy By Activation of "OEM Entry"

Click "Check-Trigger" to activate the original car sensor first, and then enter "Programming". At this time, you can see the sensor ID in the right column at the corresponding position of the activated tire.

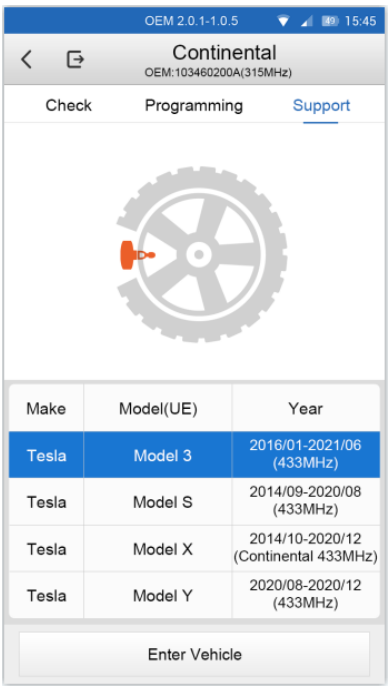
Click "Copy By Activate", which saves the operation of manually inputting the ID, and directly copies the ID just activated for programming.



Specific process: omitted. (The method is the same as Copy By Activation of "Model Entry", see 4.2.3 for details)

5.3 Technical Support

Click "Support" to see all models that support this OEM number. Take "Continental OEM: 103460200A" as an example, the display interface is as follows:

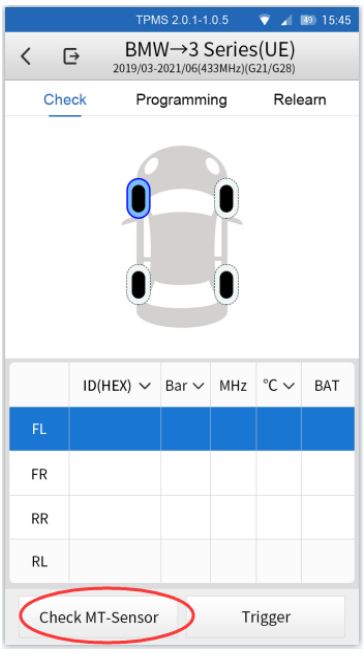


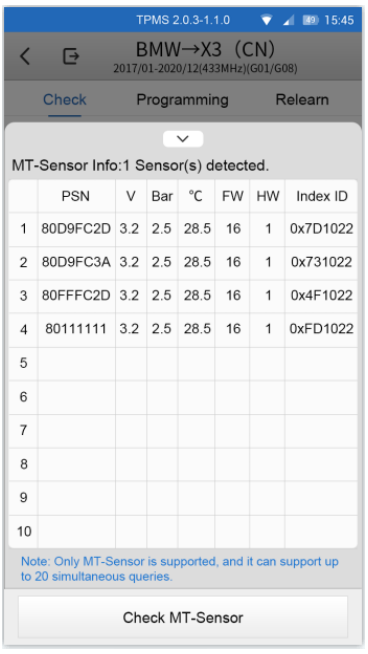
Click "Enter Vehicle" to view car's OEM number, Wheel nut torque and other information of the vehicle of this model. It is equivalent to "Model Entry" app interface.

VI. MT-Sensor Query and Repair

6.1 Check MT-Sensor

Click "Model Entry" or " OEM Entry ", select any model or OEM number to enter, activate - query MT-Sensor. Place one or more MT-Sensor sensors within 10mm of the device, and click "Query MT-Sensor" to query information such as battery power, version, and PSN code.

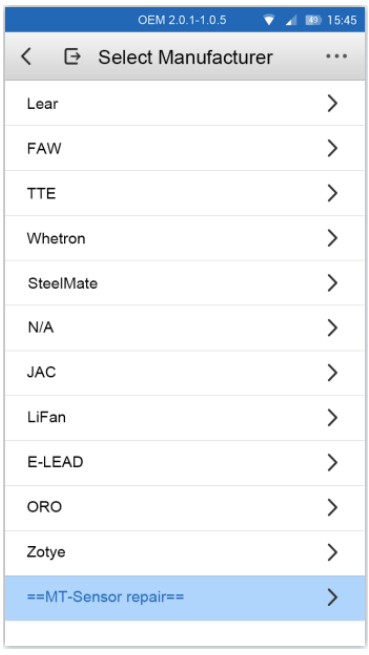


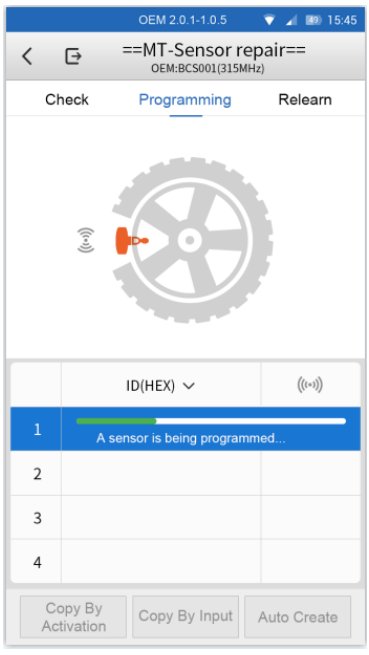


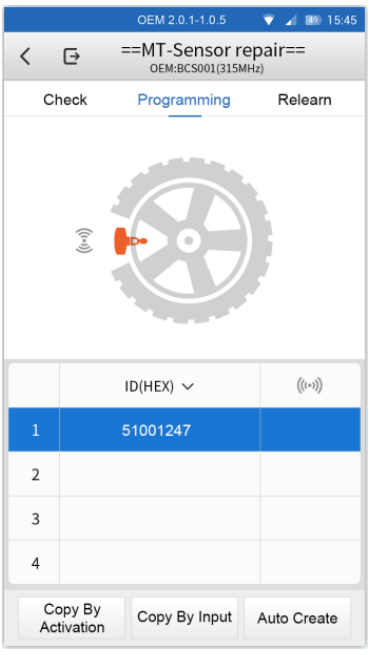
Note: " Check MT-Sensor " can only query the programmable MT-Sensor sensor, and cannot query the information of the original vehicle sensor. If it prompts that the Sensor is not detected (E307), it may be a non-MT-Sensor sensor or a programming error. In the latter case, the sensor can be repaired.

6.2 MT-Sensor repair

Click "OEM Entry", pull to the bottom, select "==MT-Sensor Repair==" → "BCS001", choose any programming method, wait for the programming to complete, and the sensor will be repaired successfully.



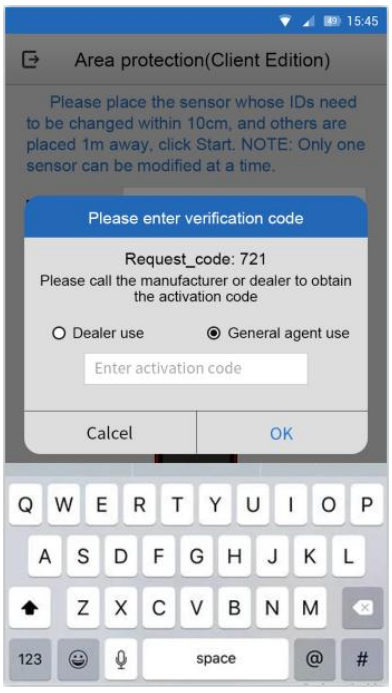




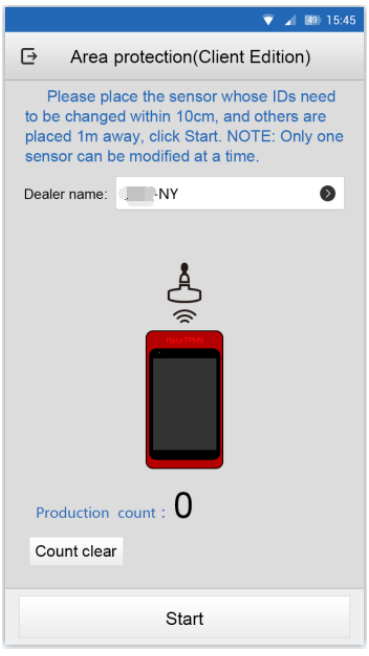
VII. Region code （Exclusive for general agent)

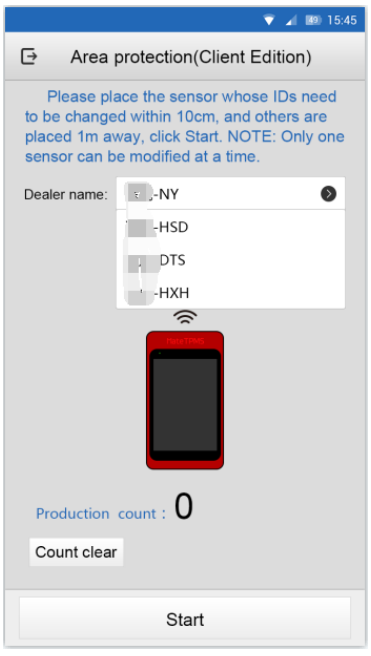
This function is dedicated to the general agent. The general agent can mark the sensor ID before delivery to the following agents or distributors. If the sensor ID is inconsistent with the ID of the MateTPMS tool, it will not be programmed. In order to achieve regional protection and prevent smuggling. (Ordinary users can ignore this chapter)

Please click the desktop icon to start the area protection application when connected to available WiFi, the interface is as follows:



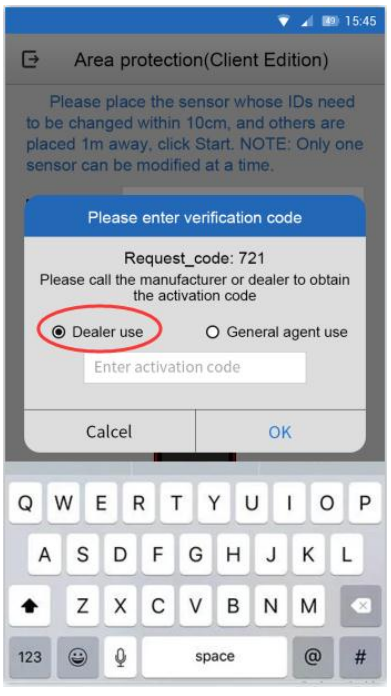
The general agent can enter the code provided by the manufacturer. After entering, you can choose the target dealer for the sensor to be shipped. After the selection is complete, place the sensor within a range of 10cm, click "Start", about 3~4 seconds, the modification is successful.



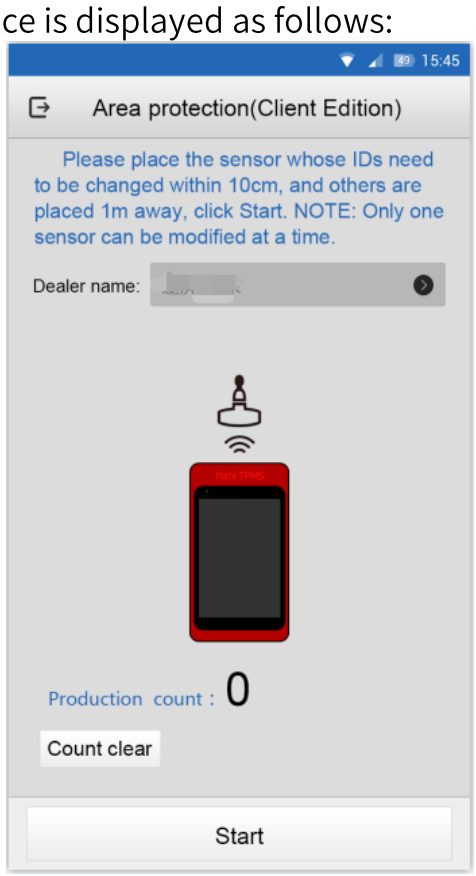


In case of special circumstances, the operation is missed or sent to the wrong destination, the sensor can be sent back to be revised, or the dealer can operate under the guidance of the general agent. The process is as follows:

Select "Dealer use", call the manufacturer, send the "Request code" to the manufacturer, inform the area, and get the verification code input. This verification code is only valid once and cannot be reused.



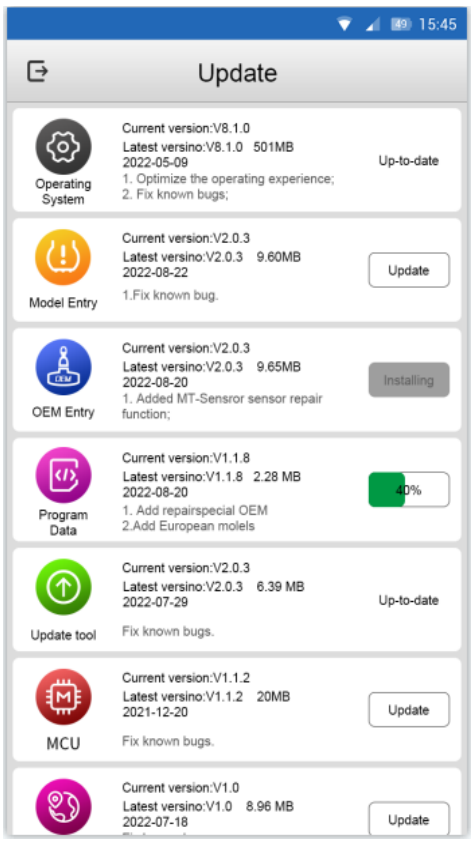
After entering, the interface is displayed as follows:



The dealer entry interface is slightly different from the general agent entry interface. The dealer cannot choose the dealer name, only the number corresponding to the current dealer can be displayed. After the operation is complete, exit.

VIII. Check for updates

Please click  to start the update detection tool when connected to available WiFi. The App will automatically display the current version and the latest version available on the server.



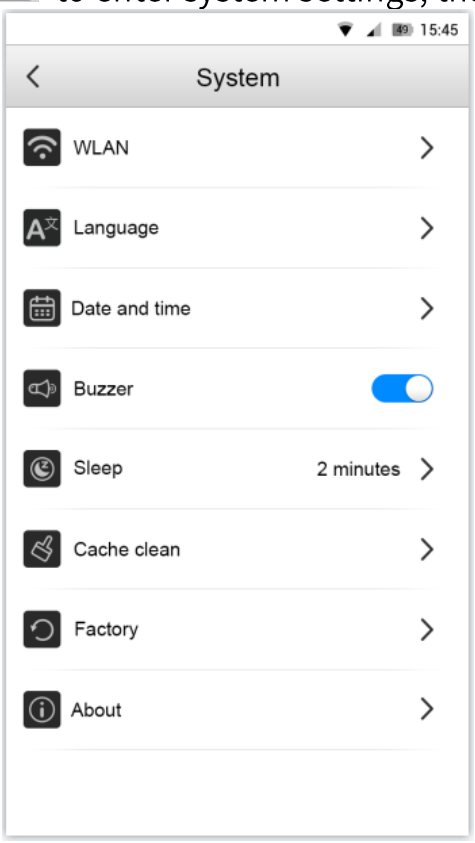
Icon	Function	Icon	Function
	System update		Model Entry
	OEM Entry		Programming data (will update and add new model data from time to time)
	The update of the upgrade tool itself (it will automatically exit after the update, you need to enter again)		MCU update (MCU is very important as the medium between APP and sensor)
	Regional planning and protection to prevent smuggling (for general agent only)		

Update displays , indicating that there is a new version available for this application. Click to download the update automatically.

IX. System functions

9.1 System menu

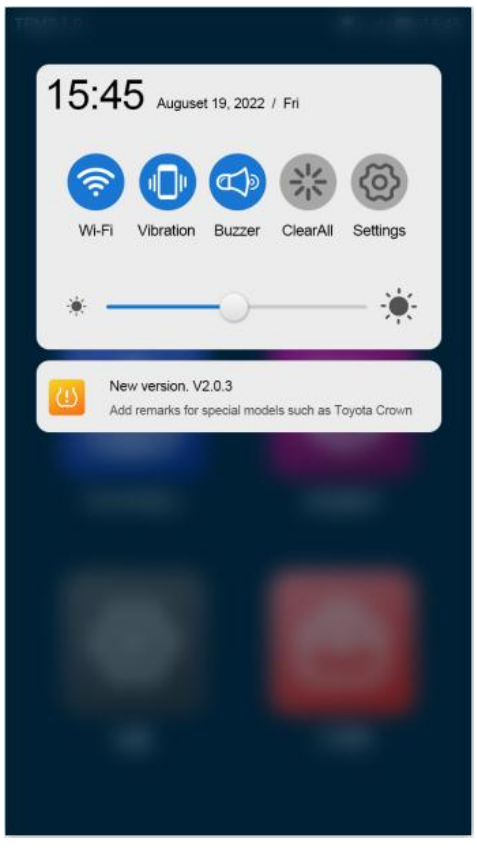
Click the desktop icon  to enter system settings, the interface is as follows:



Icon	Function	Icon	Function
	Go to Wi-Fi settings		Language switch
	Date setting		Buzzer on/off
	Hibernate settings		Clear system cache
	Factory reset		View system version and memory information

9.2 Shortcut keys

Pull down from the top to reveal the message, pull down again to reveal the shortcut buttons.



Icon	Function	Icon	Function
	Wi-Fi switch, long press to enter Wi-Fi settings		Vibration switch
	Buzzer on/off		Restart the app
	Enter system settings		Brightness adjustment

X. Product technical parameters

10.1 MateTPMS tool parameters

No.	Item	Technical parameter
1	CPU	PX 30 Quad Core 64bit 1.5GHz
2	Screen size	5.5" touch screen
3	Screen resolution	1280*720
4	Storage space/Flash	16G/1G
5	Battery	5000mAh lithium battery
6	Stand-by current	4~10mA
7	Working current	400mA
8	Storage environment	≤97%RH(40°C) / -30 °C ～ 85°C
9	Working environment	≤97%RH(40°C) / -20 °C ～ 70°C
10	Machine size	90 * 182 * 22 mm
11	Weight	325 g

10.2 MT-Sensor parameters

No.	Item	Technical parameter
1	Battery model	CR2050(350mAh)
2	Stand-by current	＜0.7uA
3	Emission current	＜10mA
4	RF transmit signal modulation method	FSK/ASK
5	Working frequency	315MHz/433.92MHz
6	Air pressure measurement range	0~8Bar/0-116Psi
7	Temperature measurement range	-40°C~105°C
8	Air pressure measurement error	±0.1Bar(0~70°C)
9	Tire pressure measurement error	±3°C(0~70°C)
10	Working environment	-40°C~105°C
11	Storage environment	-40°C~125°C
12	Waterproof level	IP67
13	Battery Life	Over 3 years

Note: The sensor is optional

XI. Simple troubleshooting

If you encounter problems during the installation or use of the product, please try the following methods to solve them. If the problem still exists, please contact our after-sales service center.

Problem	Cause	Solution
A tire does not display digital information	The sensor and receiver are not paired well	Relearn
	The sensor is dead or broken	Replace the sensor
	It may be due to the serious electromagnetic interference nearby	Restart after driving for a distance
Programming failed!(E201)	Sensor and MateTPMS tool client codes do not match.	The product may be smuggled or the sensor is sent to the wrong area, please ask the dealer to understand the situation.
No sensor detected! (E207)	The sensor is too far away when programming	Take the sensor close and place it within 10cm
	Non-MT-Sensor sensors	Can't program
Programming failed! (E208)	Sensor ID write failed	Try again, do not remove the sensor during programming
Programming failed! (E209)	Programming data cannot continue to be written	Try again, do not remove the sensor during programming
No sensor detected! (E307)	Sensor too far when activated	Take the sensor in and place it within 10cm
	Non-MT-Sensor sensors	Can't program
Failed!Please contact the manufacturer! (E401)	Use the Region code app to set regional protection, and the modified MT-Sensor is not under the current dealer's name.	The product may be smuggled or the sensor is sent to the wrong area, please ask the dealer to understand the situation.
No programming data (E501)	Programming data not updated	Start to check for updates, update programming data online
	Not yet developed, only for activation and cannot be programmed for the time being	Looking forward to the new version update or notify the dealer OEM number or model
No protocol yet! (E502)	Not yet developed	Looking forward to the new version update or notify the dealer OEM number or model
This OEM number is disabled! (E503)	This OEM number is not enabled	Looking forward to the new version update or notify the dealer OEM number or model
This model is not yet active! (E504)	This model is not enabled	

FCC Requirement
Any changes or modifications not expressly approved by the party 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.

Note: 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