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IMPORTANT: Before operating or maintaining this unit, please read this manual carefully, paying extra attention to the safety warnings and precautions.

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Safety Information

To prevent personal injury or damage to vehicles and/or the scan tool, read this instruction manual first and observe the following safety precautions at a minimum whenever working on a vehicle:

- Always perform diagnosis or service in a safe environment.
- Wear safety eye protection that meets ANSI standards.
- Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
- Operate the vehicle in a well-ventilated work area: Exhaust gases are poisonous.
- Put blocks in front of the drive wheels and never leave the vehicle unattended while running tests.
- Use extreme caution when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.
- Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.
- Put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.
- Always turn the ignition off before connecting/disconnecting the OBD II Cable to/from the TPMS tool; otherwise it may cause the Malfunction Indicator Light (MIL) to turn on.
- Refer to the user's manual for the vehicle being serviced and adhere to all diagnostic procedures and precautions. Otherwise personal injury or unneeded repairs may result.
- Keep the TPMS tool dry, clean, free from oil, water and grease. Use a mild detergent on a clean cloth to clean the outside of the TPMS tool when necessary.

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5.

1. Using the Manual

This manual contains device usage instructions.

Some illustrations shown in this manual may contain modules and optional equipment that are not included on your system. Contact your sales representative for availability of other modules and optional tools or accessories.

1.1 Conventions

The following conventions are used.

Bold Text

Bold emphasis is used to highlight selectable items such as buttons and menu options.

Example:

Tap OK.

Terminology

The term "select" means highlighting a button or menu item and tapping it to confirm the selection.

Notes and Important Messages

The following messages are used.

Notes

A **NOTE** provides helpful information such as additional explanations, tips, and comments.

Important

IMPORTANT indicates a situation which, if not avoided, may result in damage to the test equipment or vehicle.

Hyperlinks

Hyperlinks, or links, that take you to other related articles, procedures, and illustrations are available in electronic documents. Blue colored text indicates a selectable hyperlink.

Illustrations

Illustrations used in this manual are samples, the actual testing screen may vary for each vehicle being tested. Observe the menu titles and on-screen instructions to make correct option selection.

2. General Information

2.1 TPMS System Review

A tire pressure monitoring system (TPMS) is an electronic system designed to monitor the air pressure inside the pneumatic tires on various types of vehicles. TPMS report real-time tire-pressure information to the driver of the vehicle, either via a gauge, a pictogram display, or a simple low-pressure warning light. TPMS can be divided into two different types — direct (dTPMS) and indirect (iTPMS). TPMS are provided both at an OEM (factory) level as well as an aftermarket solution.

2.2 TPMS Legislation

In the United States, the United States Department of Transportation (NHTSA) released the FMVSS No. 138, which requires an installation of a Tire Pressure Monitoring System to all new passenger cars, multipurpose passenger vehicles, trucks, and buses that have a gross vehicle weight rating (GVWR) of 4,536 kg (10,000 lbs.) or less, except those vehicles with dual wheels on an axle, as of 2007. In the European Union, starting November 1, 2012, all new models of passenger cars must be equipped with a TPMS, with even tighter specifications that will be defined by the UNECE Vehicle Regulations (Regulation No. 64). From November 1, 2014, all new passenger cars sold in the European Union must be equipped with TPMS. On July 13, 2010, the South Korean Ministry of Land, Transport and Maritime Affairs announced a pending partial-revision to the Korea Motor Vehicle Safety Standards (KMVSS), specifying that "TPMS shall be installed to passenger vehicles and vehicles of GVW 3.5 tons or less, ... [effective] on January 1, 2013 for new models and on June 30, 2014 for existing models". Japan is expected to adopt European Union legislation approximately one vear after European implementation. Further countries to make TPMS mandatory include Russia, Indonesia, the Philippines, Israel, Malaysia and Turkey.

2.3 TPMS Tell-tale Light

When diagnosing TPMS systems, you should understand what the TPMS tell-tale light means.

When turning the ignition OFF to ON, the TPMS tell-tale should come on, and then go off, which indicates the system is working fine. If the light stays on, there would be a pressure problem. If the light flashes, there would be a system problem, which can range from faulty sensors to sensors on the vehicle that haven't been learned to that vehicle.

2.4 Benefits of TPMS

The significant advantages of TPMS are summarized as follows:

- Fuel saving.
- Extended tire life.
- Decreased downtime and maintenance.
- Improved safety.
- Environmental efficiency.

3. Tool Information

3.1 Tool Description



- 1) **SENSOR SLOT** Holds the MX-Sensor need to be programmed.
- 2) LCD DISPLAY Displays the menus and test screens.
- 3) **N BUTTON** Cancels a selection (or action) from a menu or return to previous menu.
- 4) **UP SCROLL BUTTON** Moves up through menu and submenu items in menu mode. When more than one set of data are retrieved, use this button to move up to previous screens for additional data. It is also used to view previous trouble code when viewing DTCs.

- 5) LEFT SCROLL BUTTON –When scrolling through a screen of data or text, moves to previous character and views additional information on previous screens, if recorded data content covers more than one screen.
- 6) DOWN SCROLL BUTTON Moves down through menu and submenu items in menu mode. When more than one set of data are retrieved, use this button to move down to next screens for additional data. It is also used to view next trouble code when viewing DTCs.
- 7) **Provides help information.**
- 8) **OPOWER BUTTON** Long press the button to turn on/off the tool; or, short press the button to return to Home screen.
- 9) **RIGHT SCROLL BUTTON** When scrolling through a screen of data or text, moves to next character and view additional information on next screens, if recorded data content covers more than one screen.
- 10) TEST BUTTON Commences a TPMS Test or confirms selections on screen.
- 11) Y BUTTON Confirms a selection (or action) from a menu.
- 12) **USB PORT** Connects the TPMS tool to PC for data printing or battery charging.
- 13) **POWER PORT** Connects the TPMS tool to the mains with the charger supplied for battery charging.
- 14) SD CARD SLOT Holds SD card.
- 15) **OBD II CONNECTOR** Connects the TPMS tool to the vehicle's Data Link Connector (DLC).
- **NOTE:** Figures and illustrations, product's characteristics and functions, and included accessories in this User Manual are provided for reference only and may differ from actual product. Product design and specifications may be changed without notice.

3.2 Specifications

- 1) Display: TFT color display (320 x 240 dpi)
- 2) Power: 3.7 V Li-polymer battery
- 3) Operating Temperature: 0°C to 50°C (32°F to 122°F)
- 4) Storage Temperature: -20°C to 70°C (-4°F to 158°F)
- 5) Dimensions:

Length	Width	Height
202.2 mm (7.96")	106.7 mm (4.20")	37.7 mm (1.48")

6) Weight: 0.4 kg (0.88 lb.)

3.3 Accessories Included

- 1) **OBD II Cable** Provides power to tool and communicates between tool and vehicle
- 2) **USB Cable** Allows easy online update, data printing, and power charging via PC connection
- 3) Carry Case A case to store the tool when not in use
- 4) **Power Adapter** Charges the built-in battery
- 5) **SD Card** Used to store data
- 6) **Sensors** Supplied with two additional versions:
 - a) Plus: 1 clamp-in and 1 snap-in sensors in 315MHz freq.
 - b) Premium: 4 Clamp-in and 1 Snap-in in 315MHz freq., 2 Clamp-in and 1 Snap-in in 433MHz freq.

3.4 Icons

- 1) **II** Indicates battery charging.
- 2) Indicates there is data stored in the tool.

- 3) Indicates battery volume.
- 4) Indicates USB communication with the computer is established
- 5) Indicates magnet is required to activate TPMS sensor.
- 6) $P \downarrow$ Indicates deflation is required to activate TPMS sensor.
- 7) 🔊 Indicates **One Wheel** test mode is selected.
- (6- Indicates the TPMS tool is sending signals to the tire sensor for activation and test in activation screen or indicates the sensor information is read by activation.
- 10) Indicates the tool communication with the vehicle's OBD II DLC is established or indicates the sensor information is read by OBD.

3.5 Keyboard

No solvents such as alcohol are allowed to clean the keypad or display. Use a mild nonabrasive detergent and a soft cotton cloth. Do not soak the keypad as the keypad is not waterproof.

3.6 Battery Charging

The TPMS tool has a 3.7 V built-in lithium-ion polymer rechargeable battery. There are two means of battery charging:

- ✓ To charge battery by power adapter
 - 1) Locate the power port of the device.
 - 2) Connect the device and the power source with the adapter.
- ✓ To charge battery by USB cable
 - 1) Locate the USB port of the device.
 - 2) Connect the device and the computer with the USB cable.

For optimum performance, always keep your tool sufficiently charged. It is recommended that you charge the tool for over 2 hours before the first use

NOTE: Only use the power adaptor or USB cable that is included in our pack to charge this tool. The use of un-approved power supplies may damage your tool and void the tool warranty.

3.7 Power Up by DLC

The tool can also be powered via the vehicle Data Link Connector (DLC). Just follow the steps below to turn on the TPMS tool:

- 1) Connect the OBD II Cable to the TPMS tool.
- Find DLC on vehicle.
- A plastic DLC cover may be found for some vehicles and you need to remove it before plugging the OBD II cable.
- 3) Plug OBD II cable to the vehicle's DLC.
- 4) Power up the TPMS tool by pressing the **Power** button, and wait for the Main Menu to appear (Figure 3.1).

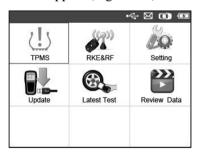


Figure 3.1

NOTE: OBD II connection does not support battery charging.

3.8 System Setting

The tool allows you to make the following adjustments and settings.

- 1) Market: Select the area of work, Europe or America.
- 2) **Language:** Selects the desired language.
- 3) **Pressure Unit:** Sets the pressure unit in kPa, Psi or Bar.
- Temperature Unit: Sets the temperature unit in degree Celsius or Fahrenheit.
- 5) **Distance Unit:** Sets the distance unit in Km or mile.
- 6) **ID Format:** Sets the ID displaying in Hexadecimal or Decimal.
- 7) **Beep Set:** Turns on/off key-press beep.
- 8) Wheels: Sets test modes in One Wheel or All Wheels.
- 9) **Power-off:** Sets the time to power off automatically.
- 10) **Date:** Allows setting date information of the tool.
- 11) **About:** Allows viewing important information of the tool.
- Setting will remain until change to the existing settings is made.

To Enter the Setting Menu

From the **Main Menu**: Use the **UP/DOWN** and **LEFT/RIGHT** scroll button to select **Setting**, and press the **Y** button. The Setting menu displays as below.



Figure 3.2

Market

This function allows you to switch among the supported corresponding models for European and American areas.

- From System Setting screen, use the UP/DOWN scroll button and the LEFT/RIGHT scroll button to select Market, and press the Y button.
- From Market screen, use the LEFT/RIGHT scroll button to select the work area.
- 3) The tool will load the new database for the selected zone.



Figure 3.3

NOTE: The Market Setting is available for Global version only. The SD card is required to get the data when changing the market area. Please select the correct Market before testing.

Language

- English is the default language.
- From System Setting screen, use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select Language, and press the Y button.
- 2) Use the **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select the desired language and press the **Y** button to save your selection and return to previous menu.



Figure 3.4

Pressure Unit

- From System Setting screen, use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select Pressure Unit, and press the Y button.
- 2) From **Pressure Unit** screen, use the **LEFT/RIGHT** scroll button to select the desired unit: **kPa**, **Psi** or **Bar**.



Figure 3.5

3) Press the **Y** button to save your settings and return to previous menu, or press the **N** button to exit without change.

Temperature Unit

 From System Setting screen, use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select Temperature Unit, and press the Y button. 2) From **Temperature Unit** screen, use the **LEFT/RIGHT** scroll button to select the desired unit of temperature.



Figure 3.6

3) Press the **Y** button to save your settings and return to previous menu, or press the **N** button to exit without change.

Distance Unit

- From System Setting screen, use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select Distance Unit, and press the Y button.
- 2) From **Distance Unit** screen, use the **LEFT/RIGHT** scroll button to select the desired unit of distance: **km** or **mile**.



Figure 3.7

3) Press the **Y** button to save your settings and return to previous menu, or press the **N** button to exit without change.

ID Format

- From System Setting screen, use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select ID Format, and press the Y button.
- 2) From **ID Format** screen, use the **LEFT/RIGHT** scroll button to select the desired ID format.



Figure 3.8

3) Press the **Y** button to save your settings and return to previous menu, or press the **N** button to exit without change.

Beep Set

This function allows you to turn on/off the built-in speaker for key pressing.

- From System Setting screen, use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select Beep Set, and press the Y button.
- 2) From **Beep Set** menu, use the **LEFT/RIGHT** scroll button to select **ON** or **OFF** to turn on/off the beep.



Figure 3.9

3) Press the **Y** button to save your selection or the **N** button to exit without change.

Wheels

This function allows you to set sensor testing mode in All Wheels or One Wheel.

- From System Setting screen, use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select Wheels, and press the Y button.
- 2) From **Wheels** screen, use the **LEFT/RIGHT** scroll button to select **All Wheels** or **One Wheel** mode for TPMS sensor testing.



Figure 3.10

3) Press the **Y** button to save your selection or the **N** button to exit without change.

NOTE: In All Wheels mode, the tool will determine if a duplicate sensor ID has been read. In this case, the tool will display a message "Sensor ID Duplicated.". In One Wheel mode, the tool will not check the duplication of sensor ID.

Power-off

- From System Setting screen, use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select Power-off, and press the Y button.
- 2) Press **UP/DOWN** scroll button to increase or decrease the interval time for auto power-off, and then press the **Y** button to confirm your change or the **N** button to exit without change.

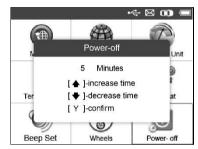


Figure 3.11

- NOTE: Before the tool powers off automatically, it will save all the TPMS test data. Next time when the tool is powered on, you may retrieve the recorded data or return to the last operation.
- **NOTE:** When using external power, the scan tool stays on until you turn it off. When using internal battery power, the scan tool turns off automatically after a set time of inactivity.

Date

This function allows setting the date information of the tool.

 From System Setting screen, use UP/DOWN scroll button and LEFT/RIGHT scroll button to select Date, and press the Y button; wait for the Date screen to appear. 2) Use **UP/DOWN** scroll button to increase or decrease the value and **LEFT/RIGHT** scroll button to select the item need to change.



Figure 3.12

About

This function allows viewing of some important information such as serial number and software version number of the tool.

- From System Setting screen, use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select About, and press the Y button; wait for the About screen to appear.
- 2) View tool information on screen. Press the N button to exit.



Figure 3.13

NOTE: If the tool is Global version, please select the correct area under Market Setting before performing test.

3.9 Product Troubleshooting

This part describes problems that you may encounter while using the TPMS tool.

Vehicle Linking Error

A communication error occurs if the TPMS tool fails to communicate with the vehicle's ECU (Electronic Control Unit) when running the diagnostic function. You need to do the following to check up:

- ✓ Verify that the ignition is ON.
- ✓ Check if the TPMS tool's OBD II connector is securely connected to the vehicle's DLC.
- ✓ Verify that the vehicle is OBD II compliant.
- ✓ Verify that the vehicle is equipped with TPMS.
- ✓ Verify that the tool battery is sufficiently charged.
- ✓ Turn the ignition off and wait for about 10 seconds. Turn the ignition back to on and continue the testing.
- ✓ Verify the control module is not defective.

Operating Error

If the scan tool freezes, then an exception occurs or the vehicle's ECU (Engine Control Unit) is too slow to respond to requests, do the following to reset the tool:

- ✓ Reset the scan tool.
- ✓ Turn the ignition off and wait for about 10 seconds. Turn the ignition back to on and continue the testing.

4. TPMS Check & Diagnostics

The MaxiTPMS® TS501 is a new generation TPMS diagnostic & service tool specially designed to activate all known OEM/Universal TPMS sensors, and provide users with direct access to the vehicle's ECU through OBD II connection, thus allowing users to reprogram sensor IDs and retrieve/clear TPMS DTCs, helping technicians to quickly find out faulty TPMS and turn off MILs.

NOTE: All software screens shown in this manual are examples, actual test screens may vary for each vehicle being tested. Observe the menu titles and onscreen instructions to make correct option selections.

4.1 TPMS Sensor Check

The sensor check function allows activating of TPMS sensor to view sensor data such as sensor ID, tire pressure, tire temperature, sensor battery, sensor position, frequency. It also sends the sensor data to vehicle's ECU to let the ECU learn the positions of sensors whenever wheels are rotated or sensors are replaced.

There are two means to check TPMS sensors:

Select by Vehicle

Users can start activating sensors directly by selecting the specific vehicle make, model and year. The graphed vehicle with 4 or 5 wheels makes the sensor activation process more simple and convenient.

- Use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select TPMS from Main Menu (Figure 3.1), and press the Y button to confirm.
- 2) From the vehicle make screen, select a specific vehicle brand and press the **Y** button (Take Chrysler as an example).



Figure 4.1

- 3) Observe the menu title and use **UP/DOWN** scroll button to select by model and year to identify the vehicle being tested.
- The selected vehicle is remembered by the tool when a test is commenced.

Select by Model:

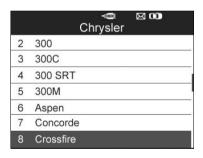


Figure 4.2

Select by Year:

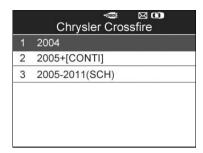


Figure 4.3

4) For some vehicle types an option screen will show up to let users choose between 4 Wheels and 5 Wheels test mode.

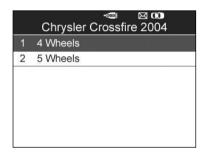
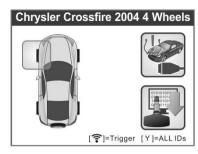


Figure 4.4

• Depending on the test mode (All Wheels or One Wheel), results are displayed in different manners.

All Wheels Mode

In this mode, a function menu screen will show up (Figure 4.5). Use the **UP/DOWN** and **LEFT/RIGHT** scroll button to select a desired wheel and press the **TEST** button to start sensor activation (Figure 4.6).



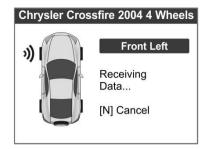


Figure 4.5 Figure 4.6

The tool will do TPMS test in a sequence of FL (Front Left), FR (Front Right), RR (Rear Right), LR (Rear Left) and SPARE, if the vehicle has the option for the spare. Or, you can use the **UP/DOWN** or **LEFT/RIGHT** scroll button to move to the desired wheel for testing.

Place the tool alongside the valve stem, point toward the sensor location, and press the **TEST** button.

The tool will send LF signal to trigger the sensor. Once the sensor is successfully activated and decoded, the tool will display as below with a beep (Figure 4.7).

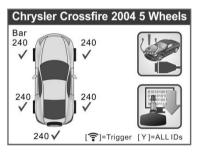


Figure 4.7

✓ Wheel with a feedback icon, "√", "x", "D", indicates wheel test has been finished. Refer to *Table 1* for detailed description to learn what testing result each icon stands for.

✓ Press the Y button to read all sensor data, including sensor ID, tire pressure, temperature, battery condition and modulation.

Under All Wheels mode, the tool can save up to 5 TPMS sensor data records at each time. Press the **UP/DOWN** or **LEFT/RIGHT** scroll button to turn over data screens while viewing. If more than five records are stored, the latest record will overwrite the oldest record.

One Wheel Mode

In this mode the screen will show as below (Figure 4.8). The tool will check TPMS sensor on the single wheel. Place the tool alongside the valve stem, point toward the sensor location, and press the **TEST** button. Wait for test result before moving the tool.

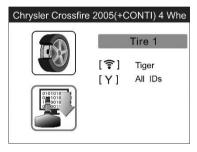


Figure 4.8

The tool will send LF signal to trigger the sensor. Depending on the sensor type, the tool will activate the sensor on the first or last step. Once the sensor is successfully activated and decoded, the tool will display as below with a beep (Figure 4.9).



Figure 4.9

Once the first sensor test is completed, the screen will remain for 3 seconds for data viewing and then automatically switch to next sensor test. Follow the same procedure for the other sensor tests.

Under One Wheel mode, the tool can save up to 10 TPMS sensor data records at each time. Select the wheel icon and press Y button to view all sensors' information. Press the UP/DOWN and LEFT/RIGHT scroll button to turn over data screens while viewing. If more than ten records are stored, the latest record will overwrite the oldest record.

Table 1 Possible Results for Testing

Icon	Test Results	Description
√	Successful Sensor Read	TPMS sensor is successfully activated and decoded. The tool displays the sensor information.
х	Failed Sensor Read	If the search period expires and no sensor is activated or decoded, it may be caused by wrong sensor fitting or non-functioning sensor. The tool then displays a message "No sensor detected". In this case, repeat testing to confirm the TPMS failure.

X	Wrong Sensor Type	A TPMS sensor is activated and decoded, but does not match the protocol for the Make, Model or Year that the tool was set-up for. The tool displays a message "Sensor triggered but cannot be known". In this case, verify the Make, Model or Year or other features you have selected as well as the sensor part number that was fitted.
D	Duplicate ID (only checked in All Wheels mode)	A sensor with a duplicate ID has been read. The tool displays a message "Sensor ID Duplicated.". In this case, clear data and re-read again.

- NOTE: With Ford sensors, the tool should be held 180 degree away from the stem. Please refer to vehicle user's manual.
- If the TPMS sensor requires a magnet, place the magnet over the stem and then place the tool alongside the stem, and press **TEST** button.

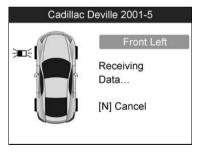


Figure 4.10

• If the TPMS sensor requires tire deflation (of the order of 10PSI), then deflate the tire and place the tool alongside the stem while pressing the **TEST** button.

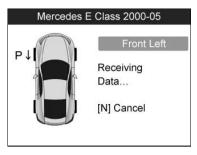


Figure 4.11

 Anytime while doing the TPMS test, pressing 2 button allows reading the sensor make, OEM part no., and relearn information for the vehicle being tested for reference. Use the UP/DOWN scroll button to view all details if the data information covers more than one page.

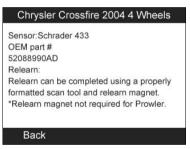


Figure 4.12

- Sensor activation can be aborted at any time by pressing the N button. When the activation is aborted, the screen will return to the previous menu.
- By pressing the Y button, you may review information of all sensors tested. Press the LEFT/RIGHT scroll button to turn over data screens while viewing.

Pos	ID-H	KPa	°C
FL	97DE6F	240	38
FR	8DD3FC	240	38
RR	6E378E	240	38
RL	1B984C	240	38
SP	5DBBCB	240	38
[4 •]=	Change Page	[N]=Exit	1/2

Figure 4.13

Pos	BAT	Mode	Modulation
FL	OK	TEST	433AM
FR	OK	TEST	433AM
RR	OK	TEST	433AM
RL	OK	TEST	433AM
41007040			
[◆▶]=Change Page [N]=Exit 2/2			

Figure 4.14

[Pos] – Indicates the wheel sensor position.

 $[ID\hbox{-}H/D]-Shows\ sensor\ ID\ data.$

 $[kPa/Psi/Bar]-Indicates\ tire\ pressure.$

 $[^{\circ}C/^{\circ}F]-Indicates\ tire\ temperature.$

[BAT] - Indicates battery condition.

[Mode] – Defines tire sensor working mode or status.

[Modulation] – Indicates sensor signal amplitude.

NOTE: Different ID format, pressure and temperature units will display at the title bar according to the device's system setting, please refer to 3.8 System Setting for detailed instruction.

Select by Latest Test

This function allows you to review the last tested sensor data and activate the sensor by using the wave signal of the latest trigger event,

which is very convenient and useful for technicians to wake up sensors of the same vehicle

- 1) Use the **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select **Latest Test** from **Main Menu** (Figure 3.1).
- 2) An activation screen with the previously activated sensor information will show up (Figure 4.15). Use the UP/DOWN or LEFT/RIGHT scroll button to select the desired wheel, and press the TEST button to reactivate the sensor, or press the Y button to view all detailed sensor data (Figure 4.16).

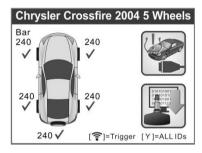


Figure 4.15

Pos	ID-H	KPa	°C
FL	97DE6F	240	38
FR	8DD3FC	240	38
RR	6E378E	240	38
RL	1B984C	240	38
SP	5DBBCB	240	38
[◆▶]=Change Page [N]=Exit 1/2			

Figure 4.16

3) If user is going to retest the sensor, a prompt will come up asking for your confirmation.

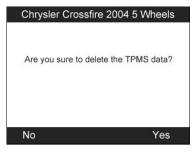


Figure 4.17

4) Press the Y button to delete all test records and enter test mode. Or press the N button to reserve the previous data and check the remaining untested sensors.

4.2 TPMS Relearn

This function, which provides users with quick access to the vehicle's ECU, enables users to do TPMS diagnostics, such as reading/writing sensor IDs on vehicle ECU and reading/ clearing codes of TPMS system, and to save data for later reviews and printing.

- 1) Connect the TPMS tool to the vehicle's DLC with the OBD II cable. Press the **POWER** button to turn on the tool.
- 2) Turn the ignition on but do not start the engine.
- Make sure the testing mode is set to All Wheels mode in System Setting.
- 4) Follow the same process in 4.1 TPMS Sensor Check to enter the activation screen. Use the UP/DOWN scroll button or LEFT/RIGHT scroll button to select the TPMS Relearn function on the upper right corner of the screen (Figure 4.18).

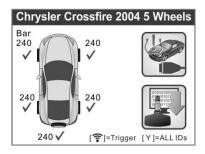


Figure 4.18

5) The tool will display a function screen as below. Use the **UP/DOWN** scroll button to select the desired menu and press the **Y** button to continue (Figure 4.19).

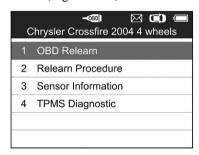


Figure 4.19

- 6) The **OBD II Relearn** allows user to write the IDs to the system directly without performing other procedures.
- 7) The **Relearn Procedure** allows referring to the related procedures before performing Relearn.
- NOTE: This menu is not available for all models.
- 8) The **Sensor Information** enables retrieval of the OEM sensor maker, OEM frequency and OEM part number.
- 9) The **TPMS Diagnosis** option allows user to write IDs to vehicle, read IDs from vehicle, read/clear TPMS codes.

- For some vehicles users may be asked to choose the specific engine model or other features before turning to the function menu. The procedure may vary by the vehicle being tested.
- NOTE: In this manner, the scan tool will communicate with the vehicle being tested. If there is a linking error, a notice screen will show up. Please refer to 3.9 Product Troubleshooting for more details.

Write IDs to Vehicle

There are two ways to write IDs to vehicle:

1) Select **OBD II Relearn** to write IDs to vehicle directly without performing further procedures (Figure 4.19).

Once the sensor IDs are successfully written, a confirm screen will show up. Press any key to continue.



Figure 4.20

- **NOTE:** The OBD II Relearn function is not supported by all vehicles. If the OBD II Relearn item doesn't present, please write the ID by Write IDs to Vehicle under TPMS Diagnosis.
- 2) From **TPMS Diagnosis** Menu, use the **UP/DOWN** scroll button to select the **Write IDs to Vehicle**, and press the **Y** button.

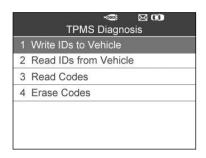


Figure 4.21

The tool will display the sensor IDs and positions for your confirmation. Press the Y button to register ID in vehicle ECU, or N button to exit.

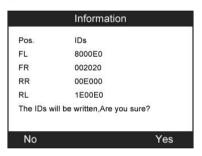


Figure 4.22

Once the sensor IDs are successfully written, a confirm screen will show up. Press any key to continue the TPMS diagnostic procedure.



Figure 4.23

- **NOTE:** The sensor writing procedure may vary for different vehicles being serviced. Please follow the onscreen instruction and take appropriate measures and selections to complete the process.
- NOTE: If there are untested sensors in the vehicle, the writing ID process cannot proceed. The tool will display a warning message as below. In this case, follow the sensor check procedure to activate all sensors in vehicle and register sensor IDs again.

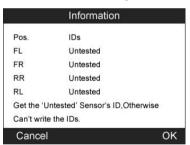


Figure 4.24

- NOTE: If duplicate IDs present, the writing ID process cannot proceed. In this case, follow the sensor check procedure to activate all sensors in vehicle and register sensor IDs again.
- IMPORTANT: Make sure to turn the ignition off before connecting/disconnecting the OBD II Cable to/from the TPMS tool; otherwise it may cause the Malfunction Indicator Light (MIL) to

turn on.

Read IDs from Vehicle

- From TPMS Diagnosis Menu, use the UP/DOWN scroll button to select the Read IDs from Vehicle, and press the Y button (Figure 4.21).
- 2) The tool will display the sensor IDs and positions for your viewing. Press the Y button to save data for future review, or the N button to exit without saving.

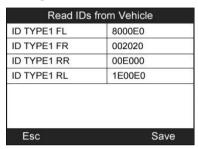


Figure 4.25

Read Codes

- 1) From **TPMS Diagnosis** Menu, use the **UP/DOWN** scroll button to select the **Read Codes**, and press the **Y** button (Figure 4.21).
- 2) A data list of TPMS DTCs retrieved from the vehicle's ECU will show up. If the data covers more than one screen, use the UP/DOWN scroll button to view additional DTC information, and press the Y button to save data for future review, or press the N button to exit without saving.

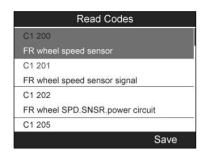


Figure 4.26

• The saved DTC and sensor data can be reviewed in Review Data, which supports easy data playback and printing.

Erase Codes

- 1) From **TPMS Diagnosis** Menu, use the **UP/DOWN** scroll button to select the **Erase Codes**, and press the **Y** button (Figure 4.21).
- 2) The tool will display a warning message for your confirmation. Press the **Y** button to continue, or **N** button to exit.

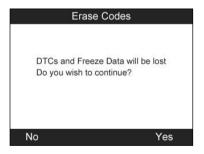


Figure 4.27

3) If the erase command is sent successfully, the screen will show as below (Figure 4.28). Press any button to continue. To make sure codes are erased clearly, run **Read Codes** again.

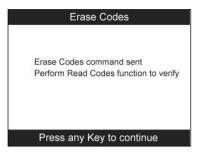


Figure 4.28

4.3 Review Data

The Review Data function allows user to view and print out saved data of the latest TPMS diagnostic recordings by the service tool.

Use the **UP/DOWN** and **LEFT/RIGHT** scroll button to select **Review Data** from Main Screen (Figure 3.1), and wait for the review data menu to appear.

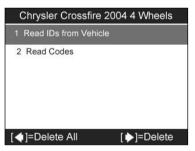


Figure 4.29

- NOTE: If no data from the previous TPMS diagnosis is recorded, a message "No data available!" will show on the screen.
- Use the UP/DOWN scroll button to select the desired stored data (taking Read IDs from Vehicle as an example) from review menu and press the Y button.
- 2) A list of retrieved sensor IDs will show on the screen.

Read IDs from Vehicle	
ID TYPE1 FL	8000E0
ID TYPE1 FR	002020
ID TYPE1 RR	00E000
ID TYPE1 RL	1E00E0
ÿ	Print

Figure 4.30

- Print -- Select this function to print out the data on screen. For detailed instructions, refer to 7.1 Print Data.
- Delete -- Use the RIGHT scroll button to delete the selected data.
- Delete All -- Use the LEFT scroll button to delete all data on the screen.
- NOTE: Don't use Delete All unless you are definitely sure what you are going to proceed.

4.4 Audit Report

After the user finished the TPMS test, the tool is capable of presenting all of its stored TPMS data in a HTML file when connected to a PC via an USB cable.

The tool will automatically pop up an explorer window in PC screen when connected to an active USB port on the PC. Make sure the tool is powered on. Otherwise, there will be no communication between the tool and computer.

Once the explorer window is open, you may view a file by double-clicking on the file. If this explorer window does not automatically pop up, the user may browse for the newly connected device manually.

The data presented is in a HTML form format that displays not only information regarding the TPMS, but also automatically updates with

the date. It also provides data entry areas for other tester and vehicle data.

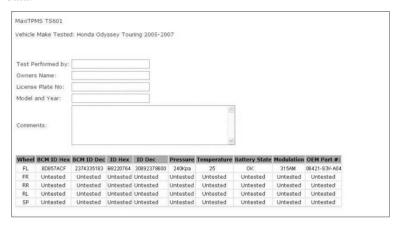


Figure 4.31

5. TPMS Sensor Programming

The Programming function allows users to program the sensor data to the MX-Sensor and replace faulty sensor with low battery life or one that is not functioning. The scan tool is easy-to-use with a proven efficiency and guaranteed accurate results.

NOTE: Programming function will only work with Autel's MX-Sensor. The Clamp-in Sensor is taken as an example in this manual. Please choose the right MX-Sensor when programming.

Under All Wheels mode, there are two options available when programming MX-Sensor using this scan tool: **Auto Create** and **Copy by OBD**.

Under One Wheel mode, you can rapidly program more than 5 MX-Sensors for the same vehicle model at a time by **Auto Create**. That is really convenient for tire shops.

5.1 Auto Create

This function is designed to program the MX-Sensor by applying random IDs created according to the test vehicle, when it is unable to obtain the original sensor ID.

- 1) Use the **UP/DOWN** scroll button and the **LEFT/RIGHT** scroll button to select **TPMS** from **Main Menu** (Figure 3.1), and press the **Y** button to confirm.
- 2) From the vehicle make screen, select a specific vehicle brand and press the **Y** button (Take Chrysler as an example).



Figure 5.1

- 3) Observe the menu option and use the **UP/DOWN** scroll button to select by model and year to identify the vehicle being tested.
- NOTE: Please pay attention to the frequency used in the vehicle. Refer to the original sensor information for the exact frequency.
- The selected vehicle is remembered by the tool when a test is commenced.

Select by Model:

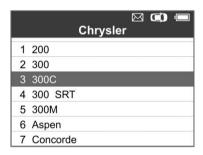


Figure 5.2

Select by Year:

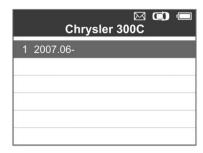


Figure 5.3

4) For some vehicles (like Chrysler), an option screen will show up allowing users to choose between **4 Wheels** test and **5 Wheels** test mode before accessing the activation screen.

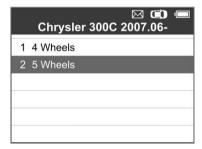


Figure 5.4

• Depending on the test mode (All Wheels or One Wheel), results are displayed in different manners.

All Wheels Mode

 In this mode, use the UP/DOWN scroll button and LEFT/RIGHT scroll button to select MX-Sensor icon on the lower right corner.

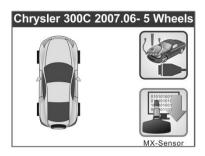


Figure 5.5

- NOTE: The MX-Sensor icon on the lower right corner will not appear if the TPMS Sensor Programming is not supported by the selected vehicle.
- 2) Use the **UP/DOWN** scroll button to select the wheel which needs to be programmed.

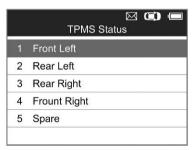


Figure 5.6

3) Use the **UP/DOWN** scroll button to select **Auto Create** to create a new random sensor ID.

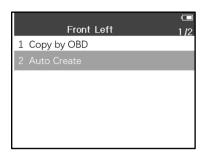


Figure 5.7

4) Insert the correct MX-Sensor into the sensor slot as displayed below:

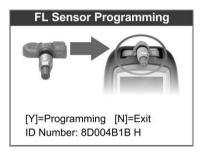


Figure 5.8

- NOTE: Please pay attention to the MX-Sensor type displayed in the screen and insert the correct MX-Sensor. Inserting incorrect MX-Sensor will cause programming failure.
- 5) Press the Y button to write in the new created sensor ID to the MX-Sensor and the screen will show as below (Figure 5.9), or the N button to exit without change. If an error prompt displays (Figure 5.10), please try another type of MX-Sensor, for the type of the inserted MX-sensor may be incorrect.

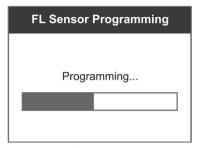




Figure 5.9

Figure 5.10

If programming failed, the screen will show as below, in this case, please perform programming function again.



Figure 5.11

After programming is finished, a series of beep sound will be heard and the tool will display the data details such as the sensor ID, the temperature and the battery voltage after testing the new programmed MX-Sensor.

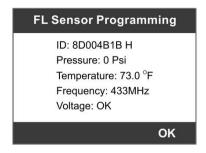


Figure 5.12

Press **OK** to return to the previous screen, and a sensor mark will appear on the right side of the screen, indicating the wheel sensor has been programmed.

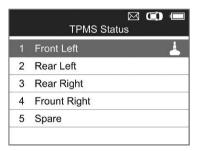


Figure 5.13

After all required MX-Sensor is programmed, please select **Write IDs to Vehicle** in **Relearn** function, and refer to **4.2 TPMS Relearn** for details.

One Wheel Mode

 In this mode, the screen will show as below. Use the UP/DOWN scroll button to select MX-Sensor icon on the lower left corner.

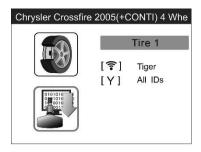


Figure 5.14

2) Use the **UP/DOWN** scroll button to select **Auto Create** to create a new random sensor ID.

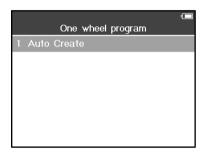


Figure 5.15

3) Insert the correct MX-Sensor into the sensor slot as displayed below:

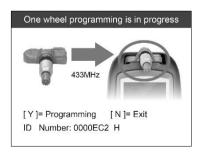


Figure 5.16

- **NOTE:** Please pay attention to the MX-Sensor type displayed in the screen and insert the correct MX-Sensor. Inserting incorrect MX-Sensor will cause programming failure.
- 4) Press the Y button to write in the new created sensor ID to the MX-Sensor and the screen will show as below (Figure 5.17). If an error prompts, please keep the MX-Sensor to be programmed away from other MX-Sensor (Figure 5.18).

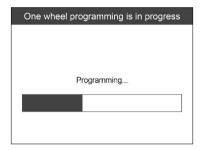


Figure 5.17



Figure 5.18

If programming failed, the screen will show as below. In this case, please perform programming function again.



Figure 5.19

After programming is finished, a series of beep sound will be heard and the tool will display the data details such as the sensor ID, the temperature and the battery voltage after testing the new programmed MX-Sensor.

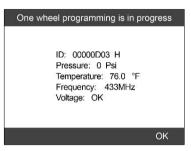


Figure 5.20

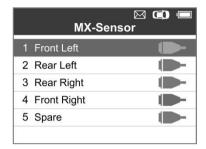
After all required MX-Sensor is programmed, please switch to All Wheels Setting and select **Write IDs to Vehicle** in Relearn function, refer to *4.2 TPMS Relearn* for details.

5.2 Copy by OBD

This function allows users to write in the saved sensor information to MX-Sensor after performing **Read IDs from Vehicle** in **Relearn** function.

- **NOTE:** This function is not available under **One Wheel** mode.
- 1) Follow the steps in 5.1 Auto Create to select MX-Sensor to enter

the Programming function. The OBD mark will appear on the right side of the screen (Figure 5.21). After selecting the specific wheel and pressing the **Y** button, the "Copy by OBD" option is available on the function menu (Figure 5.22).



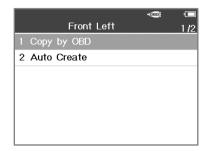


Figure 5.21

Figure 5.22

2) Select **Copy by OBD**, insert the correct MX-Sensor into the sensor slot, and then press the **Y** button to start programming the saved sensor information to the MX-Sensor.

6. RKE & RF Monitor

Today's keyless remotes -- also known as key fobs -- make life easier. But when your key fob stops working or starts to perform sporadically, it will be particularly frustrating. Check your key fob to make sure it is in top condition so it will work when you really need it.

Since a key fob is attuned to a special frequency that is only detected by the car for which it was issued, you will need to use your vehicle to test the fob. Otherwise you will have to take it to a dealership or an automotive locksmith to have it tested for the right frequency. But with our TPMS tool, the key fob testing becomes easy and convenient.

- 1) Use the **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select **RKE & RF Monitor** from **Main Menu** (Figure 3.1), and press the **Y** button to confirm.
- 2) Hold the key fob very close to the tool and press the function buttons on key fob to test. If the button works and the key fob is sending a signal, the tool will beep and the screen shows as below. If the button does not work, the tool will do nothing. To make sure each button is working properly, please test each button in turn.

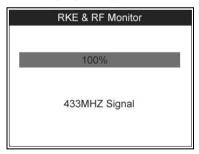


Figure 6.1

- The progress bar indicates the approximate power level of the key fob.
- The stronger the signal, the higher the beep tone.
- The tool only tests 315MHz and 433MHz key fobs.
- 3) Press the **N** button to return to previous menu.

7. Print and Update

To print out retrieved data or update software, you will need the followings:

- ✓ TS501 tool with SD card inserted
- ✓ PC or laptop with USB ports
- ✓ USB cable

7.1 Print Data

The Print Data function allows printing out TPMS DTC data recorded by the service tool by connecting the scan tool to a PC or laptop with the USB cable supplied.

- **NOTE:** The print function is not available on Mac-based computers for the present.
- 1) Install the Maxi PC Suite program to the PC.
- 2) Connect the scanner to computer with the USB cable supplied.
- 3) Run **Printer** software on computer.
- 4) Select Review Data function in Main Screen of the TPMS tool. In data menu screen, use the UP/DOWN scroll button to select the data you want to print. Wait for the reviewing window to display (Figure 4.30), and then select Print function by pressing the Y button. The selected file will be uploaded to your computer. For more detailed instructions, please refer to 4.3 Review Data.
- 5) The **Printer** will show as below.

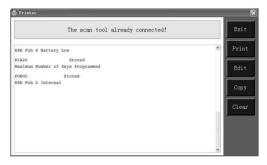


Figure 7.1

- 6) The selected data will display on the textbox of **Printer**. By selecting the function keys on the right, you could execute the following operations:
 - **Print** Print all data in the textbox to a printer connected to your computer.
 - Edit Once clicked, the software will automatically open a NOTEPAD window with all recorded data showing on.
 - Copy Copy all data in the textbox to the clipboard.
 - Clear Delete all data in the textbox.
 - **Exit** Quit the operation.
- 7) You are also allowed to edit, copy, and delete the data in the **Printer** window.

7.2 Software Update

This function allows you to update the scan tool software through a computer. You can use a **Mac** or a **Windows-based** computer to download the suitable version from the www.maxitpms.com website and proceed.

Register the Tool

User could update the scan tool **ONLY** after you had registered the tool on our website: www.autel.com. Then you could download software, update online, retrieve information and get warranty service.

- NOTE: Prior to registration, please confirm your network is working properly.
- 1. Visit the website http://pro.autel.com.
- 2. On the Sign In page, input your account ID and other information to log in, if you already have an account.
- 3. If you are a new member to Autel and do not have an account yet, click the **Create Autel ID** button on the left side.
- 4. Enter the required information in the input fields, read through Autel's Terms and Conditions and tick on **Agree**, and then click **Create Autel ID** at the bottom to continue.
- The online system will automatically send a confirmation email to the registered email address. Validate your account by clicking the link provided through the mail. A product registration screen opens.
- 6. Select the product model of your device, enter the product serial number and password on the Product Registration screen, and click **Submit** to complete the registration procedure.
- ✓ NOTE: Please use the About function to find out the Product Serial No. and Register Password. For details, please refer to the Section 3.8 System Setting.

Update Procedure

Autel frequently releases software updates that you can download. The Update feature makes it very easy to determine and get exactly what you need.

Please update the TPMS tool via SD card. Remove the SD card from the tool and connect it with computer. And then follow the update procedure to finish updating.

1) Run the Maxi PC Suite. Wait for the Log In window to pop up

(Figure 7.2).



Figure 7.2

- 2) Enter your Autel ID and password and wait for the Update window to display. If you forget your password unintentionally, you may always click the [Forget Password?] to link to our website and get your password back.
- 3) In the **Update** window, select the items you want to install. Usually, you should install all available updates.



Figure 7.3

Generally there are two ways to update the programs:

Batch Update

 Select the programs that you would update by clicking on the check boxes next to those items. Then click the **Update Selected Items** button on the right side of screen. Or

- 2) Click on the **Select All** checkbox on the right side of screen and all updatable items will be selected automatically. Then click the **Update Selected Items** button on the right side of screen.
- 3) Check the updating process by observing the upper left progress bar [Downloads] and upper right progress bar [Installs]. You may also find progress information in the Status column of updated items.
- 4) Anytime you could click the **Pause** button on the right side of screen to suspend all progresses, and the state of those suspended items would change to STOPPED.
- 5) To resume updating process, you may need to select those suspended items again, and then click the **Update Selected Items** button. The progress will resume from the break point.
- 6) When the downloading is completed, the downloaded programs will be installed automatically. The new version will replace the old version.

Single Update

- 1) Find out the desired updating item and click the **Install** button in the same line and the **Install** button changes to **Pause** at the same time.
- 2) Check the updating process by observing the upper left progress bar [Downloads] and upper right progress bar [Installs]. You may also find progress information in the Status column of updated items.
- 3) Anytime you could click the **Pause** button in the line to suspend this progress, and the state of this item would change to STOPPED.
- 4) To resume updating process, click the **Install** button in the line again. The progress will resume from the break point.
- 5) When the downloading is completed, the downloaded program will be installed automatically. The new version will replace the

old one.

- 6) Once the update is complete, disconnect the tool from the computer. It is now updated and ready to go.
- For users who choose to update by SD card, please insert the SD card into the scan tool, and switch on the TPMS tool. It's now updated and ready to go.

View or Delete Programs

To view the list of installed programs or to delete an installed program, please follow these steps:

- 1) Click on the **Installed Programs** tag entry and the page will show the list of programs installed.
- 2) Select the program(s) that you would delete.
 - ❖ Batch delete: Select the programs that you would delete by clicking on the check boxes to the left of those items. Then click the Delete button on the right side of screen.
 - Single delete: Click the Uninstall button in the line of your would-be-deleted program.
- 3) A window asking "Are you sure to delete the software?" will pop up for your confirmation.



Figure 7.4

• Click on Yes to delete the program(s) selected, or on No to cancel the action.

• The deleted program will automatically add to the end of program list in the UPDATE page in case you would like to install again.

8. Compliance Information

FCC COMPLIANCE

FCC ID:WQ83017501601

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

- 1. This device may not cause harmful interference.
- 2. This device must accept any interference received, including interference that may cause undesired operation.

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

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: i. Reorient or relocate the receiving antenna. ii. Increase the separation between the equipment and receiver. iii. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. iv. Consult the dealer or an experienced radio/TV technician for help.

RF warning statement:

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

The term "IC" before the radio certification number only signifies that IC technical specifications were met.

RoHS COMPLIANCE

This device is declared to be in compliance with the European RoHS Directive 2011/65/EU.

CE COMPLIANCE

This product is declared to conform to the essential requirements of the following Directives and carries the CE mark accordingly:

EMC Directive 2004/108/EC R&TTE Directive 1999/5/EC Low Voltage Directive 2006/95/EC

9. Warranty and Service

9.1 Limited One Year Warranty

Autel warrants to its customers that this product will be free from all defects in materials and workmanship for a period of one (1) year from the date of the original purchase, subject to the following terms and conditions:

- The sole responsibility of Autel under the Warranty is limited to either the repair or, at the option of Autel, replacement of the TPMS tool at no charge with Proof of Purchase. The sales receipt may be used for this purpose.
- 2) This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our Service Center or facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance.
- 3) Autel shall not be liable for any incidental or consequential damages arising from the use, misuse, or mounting of the TPMS tool. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.
- 4) All information in this manual is based on the latest information available at the time of publication and no warranty can be made for its accuracy or completeness. Autel reserves the right to make changes at any time without notice.

9.2 Service Procedures

If you have any questions, please contact your local store, distributor or visit our website at www.autel.com.

If it becomes necessary to return the tool for repair, contact your local distributor for more information.