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Safety Warnings

Please read all safety warnings and operating information carefully. To avoid personal injury, property loss or accidental damage to the product caused by improper operation, please pay attention to the following points when using this product:

- Always conduct vehicle detection in a safe environment.
- Never operate the detection device while driving a vehicle to avoid distraction and thus cause a car accident.
- Before starting the engine, the handbrake should be pulled, especially the front wheel should be protected, and the gear shift lever should be placed in **Neutral** (manual transmission) or **P** gear (automatic transmission), so as to avoid starting the engine and causing the vehicle to rush out and hurt people.
- The exhaust gas from the engine contains a variety of toxic compounds (such as hydrocarbons, carbon monoxide, nitrogen oxides, etc.), which can cause slow reaction and even serious personal injury or death. The vehicle under test should be parked in a well-ventilated place during operation.
- Use extreme caution when working around ignition coils, distributor caps, ignition lines and ignition plugs. These components generate dangerous voltages when the engine is running.
- Do not look directly at the laser beam of the device, and it is recommended to wear ANSI compliant goggles.
- Keep safety tips and warning labels on the device clean and legible.
- Keep the detection device dry and clean, away from gasoline, water and grease. If necessary, clean the surface of the device with a clean cloth coated with a mild detergent.
- Use only authorized and qualified parts for device repair and maintenance.
- All internal maintenance of the detection device must be carried out by an authorized maintenance organization or authorized technicians. Attempts to disassemble or modify the device will void the warranty.
- The safety information described herein covers all situations of which our company is aware. We cannot know, predict, or recommend all possible hazards. The operator must ensure that the maintenance operation performed under any circumstances will not cause harm to personal safety.

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1. Packing List

The product configuration is different for different markets. For details, please consult the local dealer or check the packing list distributed with the unit.

No.	Accessory name	Picture for Reference	Quantity
1	Main unit		1
2	USB cable (Type-C)		1
3	Calibration platform		1
4	User manual	-	1

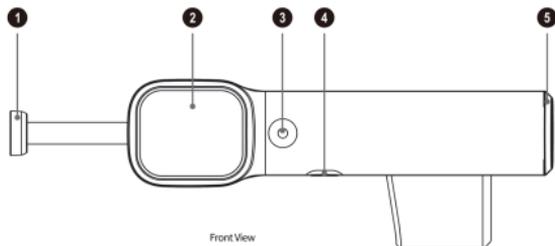
2. Product Introduction

2.1 Overview

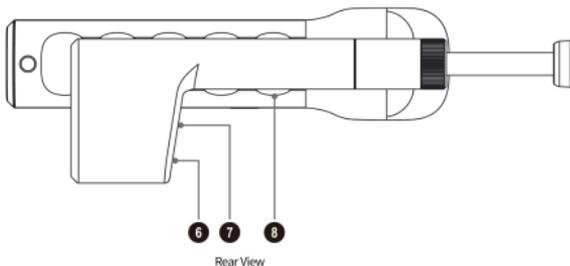
TTM113 tire tread depth examiner is a device developed by SmartSafe for vehicle tire tread detection and wear analysis. The device can scan multiple grooves at a time to accurately and quickly detect tire wear. The tool can be used alone or in conjunction with the detection device to view and print detailed tire tread detection reports.

Warning: This tool is a Class II laser product. Avoid direct eye exposure to the laser. Failure to follow the warning may result in serious injury.

2.2 TTM113 Main Unit



- 1 - Magnetic head
- 2 - Touch screen
- 3 - Power button/measurement button
- 4 - Type-C charging port
- 5 - Battery compartment



- 6 - Laser window
- 7 - Camera window
- 8 - Handle

2.3 Technical Parameters

No.	Parameter Name	Parameter Description
1	Processor	4-core A53
2	Memory	2G DDR & 8G Flash
3	Screen	1.7-inch LCD touch screen, with a resolution of 240*280
4	Wireless communication	Wi-Fi (support 2.4GHz/5GHz dual-band)
		Bluetooth
5	Charging/data interface	Type-C
6	Camera	2 million pixels, 30fps
7	Battery	3.7V, 3,000mAh
8	Operating temperature	0 - 45°C
9	Storage temperature	-20 - 60°C
10	Size	224×97×70 mm

3. First Use

3.1 Charge

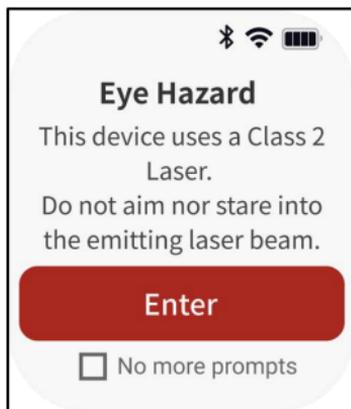
Plug the charging cable into the Type-C port of the main unit to charge it. The battery identification on the main unit screen displays , indicating that it is charging; the battery identification on the main unit screen displays , indicating that charging is complete.

3.2 Startup

3.2.1 Startup

Press and hold the power button on the device until the screen lights up, the device enters the startup screen, and then enters the warning page. Click **Enter** to go to the main interface.

*Note: Check the box before **No more prompts** and click **Enter**. You can skip the prompt page and enter the main interface directly after the next startup.*

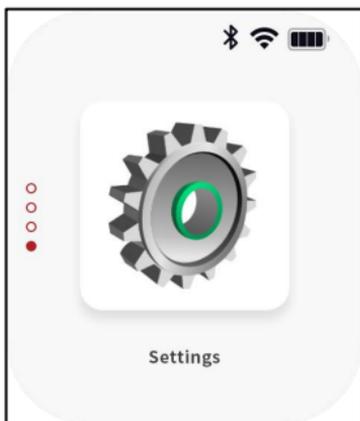
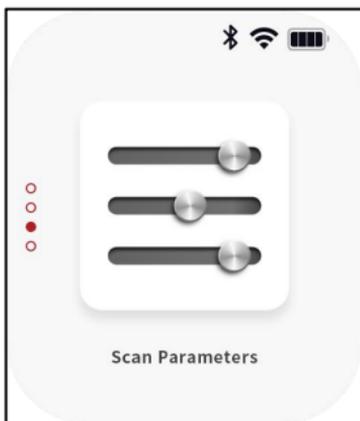
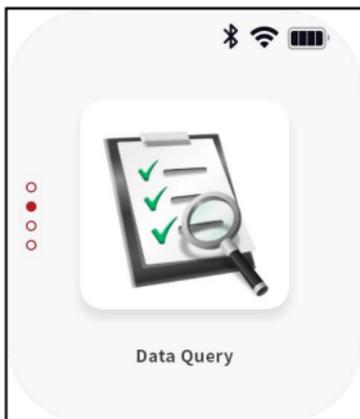
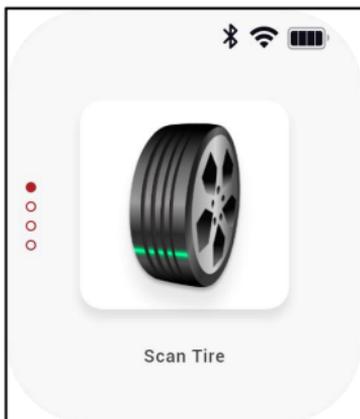


3.2.2 Shutdown

Press and hold the power button on the device until a shutdown prompt dialog box pops up on the screen. Click **Shutdown** to turn off the device or click **Restart** to restart the device.

3.3 Main Interface

The main interface of the TTM113 main unit mainly includes the following function modules, swipe along the screen up and down to switch to different functional modules, the order from top to bottom is **Scan Tire** ↔ **Data Query** ↔ **Scan Parameters** ↔ **Settings**.



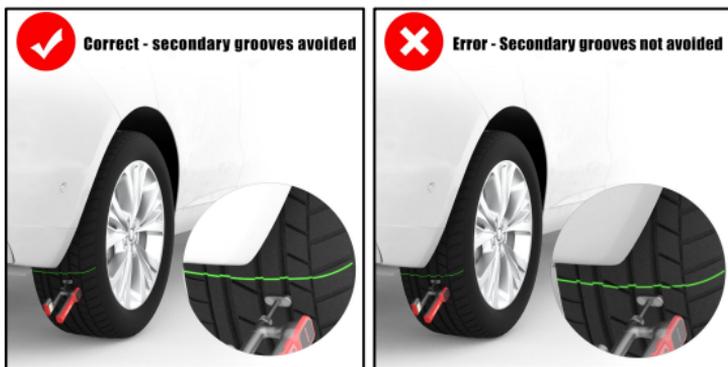
Function module	Functional description
Scan Tire	Used to detect the depth of vehicle tire grooves.
Data Query	Used to query and share the tire tread detection report.
Scan Parameters	Used to set detection parameters.
Settings	Used for system settings, updates, factory settings restoration, and device calibration.

4. Tread Detection

4.1 Measurement methods and data display

Precautions:

- Avoid using the examiner in an environment exposed to direct sunlight or other strong light to avoid affecting the measurement accuracy.
- When using an examiner to detect tire tread, avoid projecting the examiner's laser line on the secondary grooves. Refer to the figure below to demonstrate the correct and incorrect measurement methods.



- Some unconventional tires have complex tread patterns (including but not limited to the types of tires shown in the figure below). After using the examiner for tread detection, users need to match the detection data with the grooves of the detection area one by one to eliminate invalid detection values.

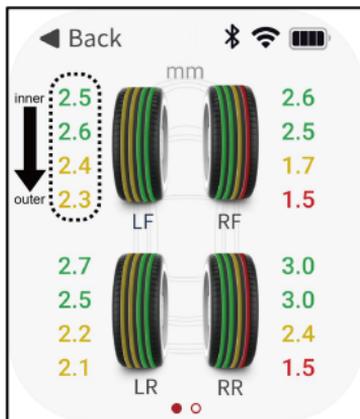


1. The screen must be kept facing the outside of the vehicle when using the

examiner, as shown in the following figure.

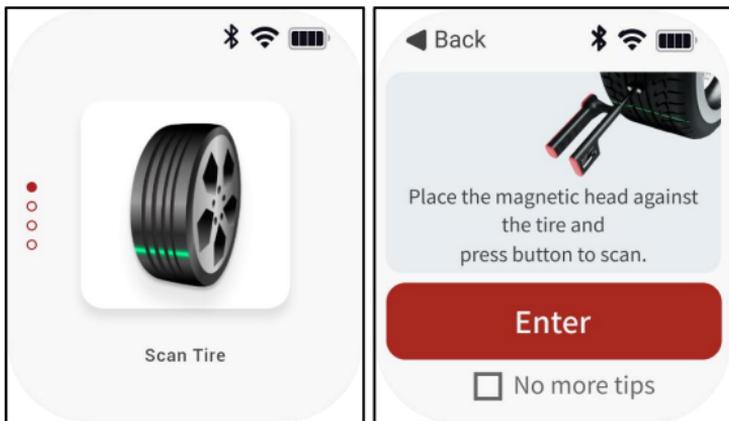


2. The measured values are displayed from inner to outer to show the values of each groove.



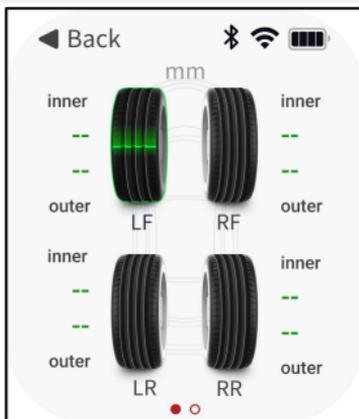
4.2 Operation Steps

1. Swipe the screen up or down to switch to the **Scan Tire** function module, and click the function module icon to enter the following prompt interface.



2. Read the detection method prompted on the screen and click **Enter** to go to the tire tread detection interface.

*Note: Check the box before **No more tips** and click **Enter** to skip the prompt page and directly enter the detection interface the next time you click **Scan Tire**.*

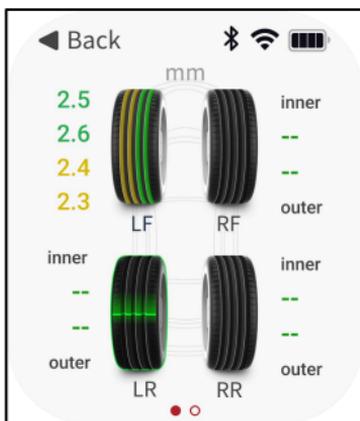


3. The system starts the detection from the left front wheel of the vehicle by default, but you can also manually select any tire for detection. After clicking on the tire icon, attach the magnetic head of the device to the tread of the corresponding tire, and press the measurement button on the device to start the detection. At this time, a scanning animation is displayed on the

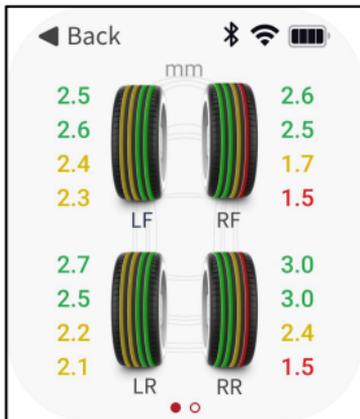
icon corresponding to the current tire, and a green laser is emitted in the laser window of the device.

*Note: The system defaults to 4-wheel detection mode. If you need to switch to the 6-wheel detection mode, you can click **Check Settings** on the main interface and modify the quantity of tires.*

4. After completing the current tire detection, the scanning cursor automatically jumps to the next tire icon in a counterclockwise direction.

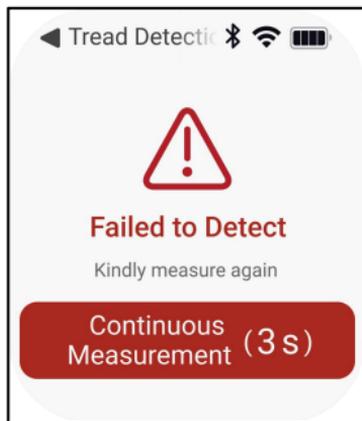


5. After all tire tests are completed in turn, the tire icon will identify the tire detection results in different colors.

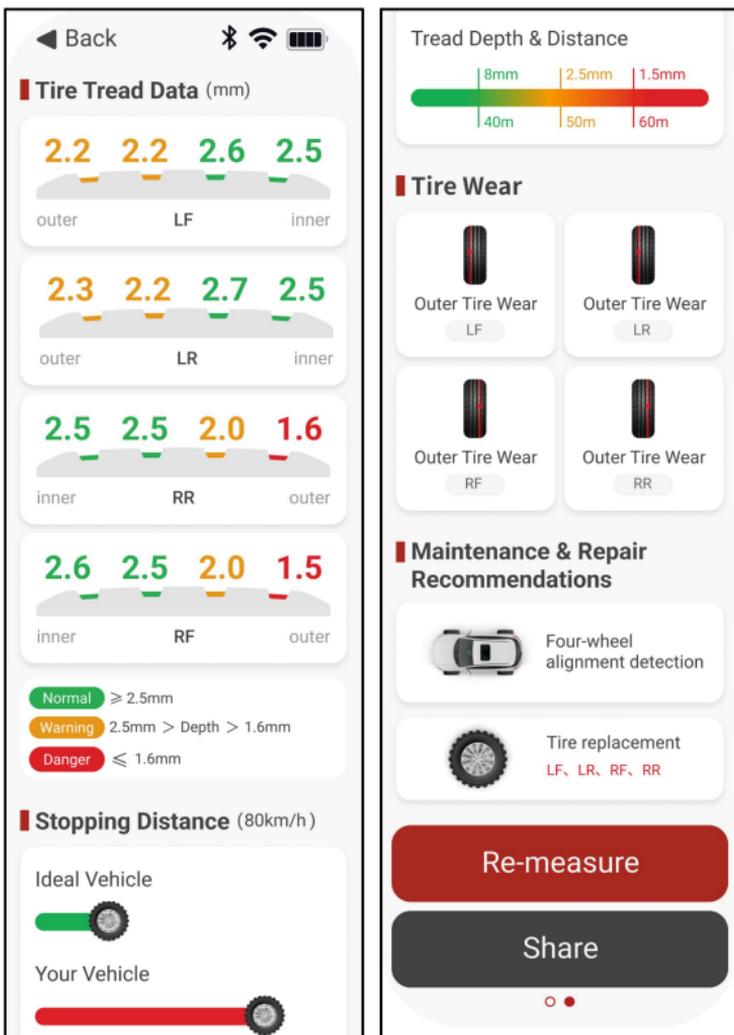


Display item	Description
Green Groove	Indicates that the detected groove wear degree is within the normal range, its depth is greater than or equal to the safe value.
Yellow Groove	Indicates that the detected groove wear degree is within the warning range, its depth is greater than the safe value but less than the normal value, it is recommended to replace the tire.
Red Groove	Indicates that the detected groove is seriously worn, its depth is less than or equal to the dangerous value, and the tire needs to be replaced immediately.
Groove depth value	Display the numerical value of each groove depth (2-5 grooves) of the tire. <i>Note: When performing 6-wheel mode detection, each tire only shows the minimum value of all groove depths..</i>

If the detection fails, the following pop-up window will pop up on the screen. Please confirm that the magnetic head of the device fits the tread of the tire and press the measurement button again to measure again.



6. After all tires are detected, swipe the screen to the left to view the current detection report.

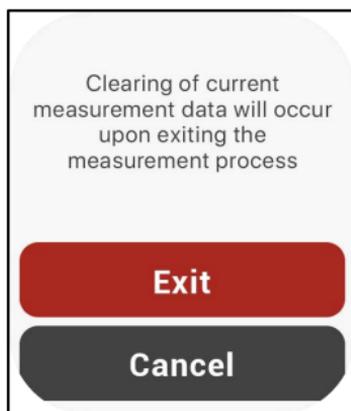


Display item	Description
Tire Tread Data	Display the tire tread data for each tire, including each groove depth data. Green indicates normal depth, yellow indicates warning depth, and red indicates dangerous depth.
Stopping Distance	Predict the stopping distance of the detected vehicle under limited road conditions and vehicle speeds and compares it with the ideal stopping distance.
Tire wear	Display the wear status of currently detected vehicle wheels.
Maintenance & Repair Recommendations	Based on the current vehicle detection data, maintenance proposal will be given on whether tires need to be replaced and four-wheel alignment performed.

7. Click **Re-measure** to return to the scan tire interface and start the next set of tire inspections.

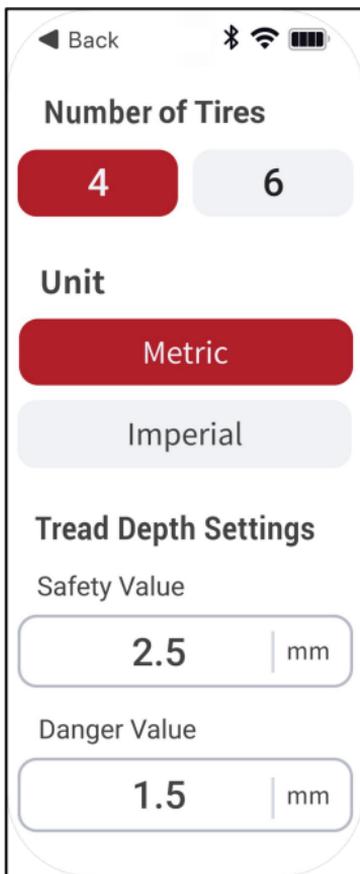
8. Click the **Share** button to generate a QR code, scan the QR code to share the detection report.

9. Click **Back** to return to the main interface, please note that existing the measurement process will clear the current measurement data.



5. Check Settings

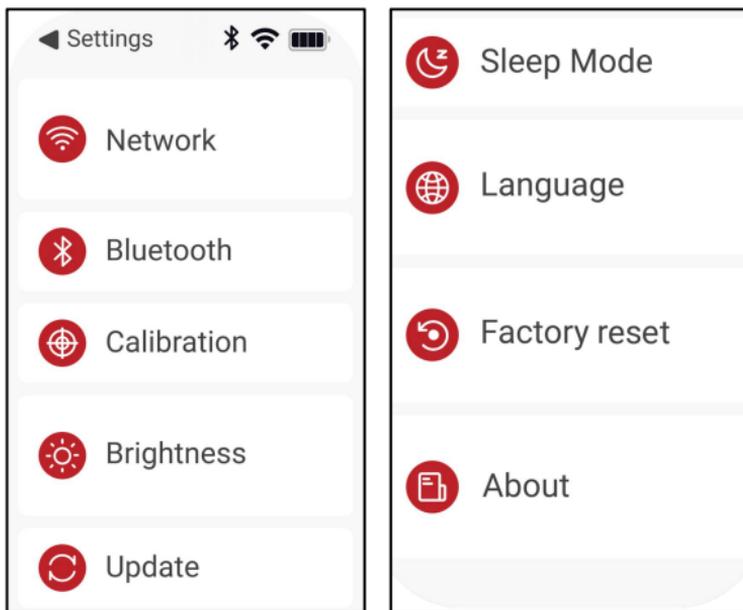
Click **Check Settings** on the main interface to enter the following interface:



Setting Item	Description
Number of Tires	Switch the detection mode to 4-wheel or 6-wheel according to the tire quantity of the vehicle to be detected, and click on the corresponding value.

Unit	Switch the display unit of test results to metric system or imperial system as required.
Tread Depth Settings	Set safe and dangerous values as needed.

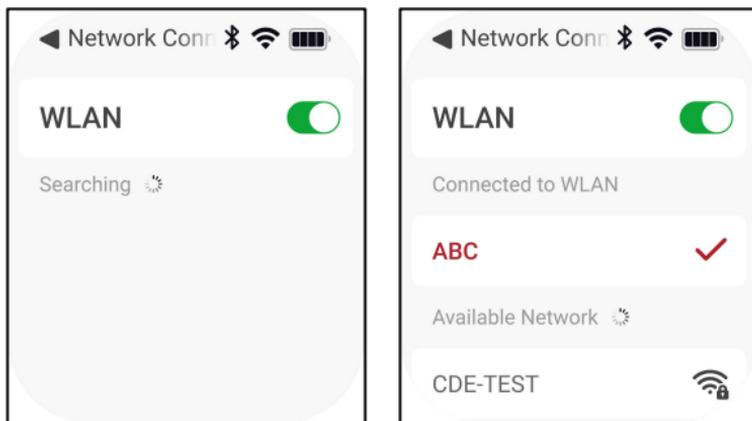
6. System Settings



Click **Settings** on the main interface to enter the following interface. Swipe up the screen to view more setting items.

6.1 Network Connection

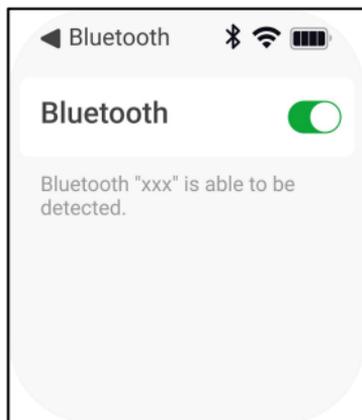
This item is used to set the wireless network connection of the device. Please follow the steps below to set it up:



- 1) Click **Network Connection** on the system settings interface, then click or slide the WLAN switch to turn it on, and the device will start automatically scanning available wireless networks.
- 2) Select the network you want to connect to:
 - If you select an open network, you can directly connect to it.
 - If you select an encrypted network, you will need to enter an access password before you can connect.
- 3) When the network name you are trying to connect to appears in red and a “✓” appears after it, it means the connection is successful.

6.2 Bluetooth

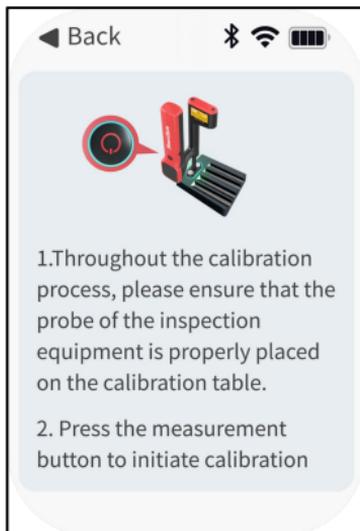
It is used to set up Bluetooth communication connection. Click **Bluetooth** on the system settings interface, then turn on the Bluetooth switch, and the detector can be paired with other detection devices for data transmission.



6.3 Calibration

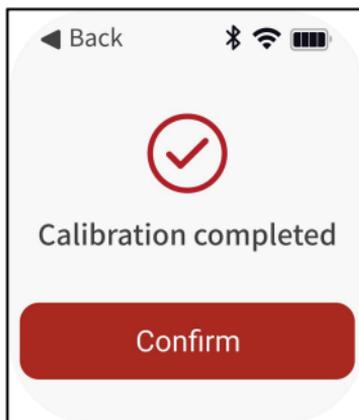
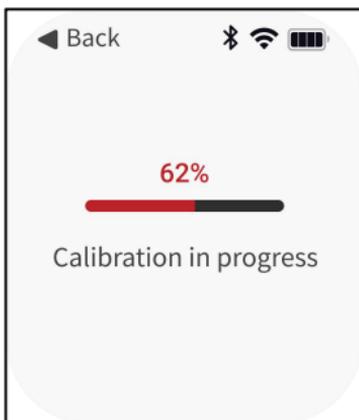
It is used to perform device calibration.

- 1) Click **Calibration** on the system settings interface, and follow the on-screen prompts to correctly place the detector on the Calibration platform so that the magnetic head of the detector fits the magnetic area on the Calibration platform.
- 2) Press the measurement button on the device to start calibration.



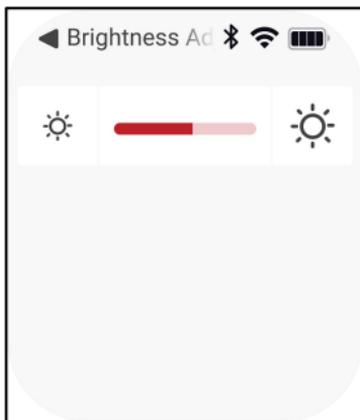
3) After calibration is completed, click **Confirm** to return to the main system settings interface.

*Note: If the calibration fails, please adjust and confirm that the magnetic head of the examiner is correctly placed on the calibration platform, and then click **Recalibration** to perform the calibration steps again.*



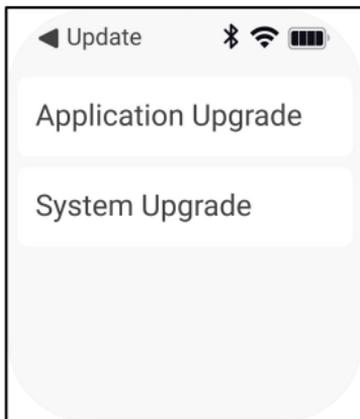
6.4 Brightness Adjustment

It is used to adjust screen brightness.



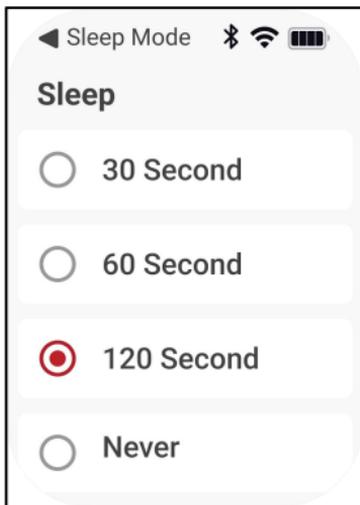
6.5 Update

It is used for application and system upgrades.



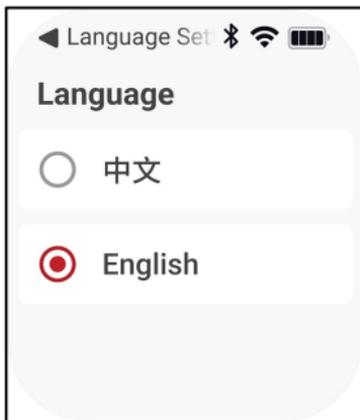
6.6 Sleep Mode

It is used to set the waiting time for the system to start sleep mode.



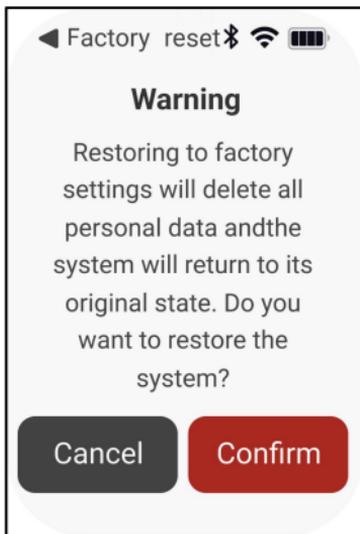
6.7 Language Settings

It is used to switch system language.



6.8 Factory Reset

It is used to initialize the device. Restoring the device to factory settings will delete all personal data, please proceed with caution.



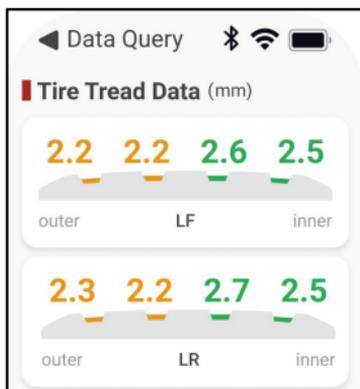
6.9 About

It is used to view the device model, system version and application version.

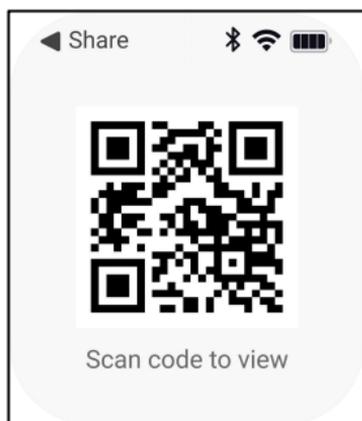
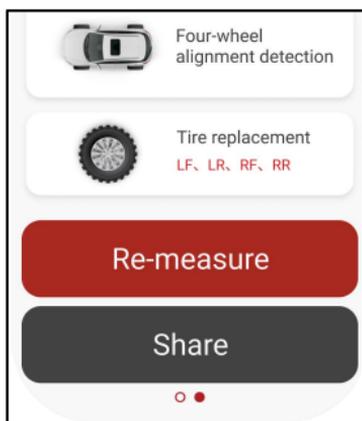


7. Data Query

This function module is used to view and share detection reports. Click **Data Query** on the main interface to view the latest detection report.



Swipe up the screen to the bottom, click the Re-measure button to **Share** button to generate a QR code, and scan the QR code to share the detection report.



Warranty

This WARRANTY applies only to customers and dealers who have purchased SmartSafe products through normal procedures.

Within one year from the date of delivery, SmartSafe Company shall guarantee the defects of its electronic products caused by materials or processes. Damage of the equipment or components caused by abuse, unauthorized modification, use for purposes other than the design of the product, or failure to operate in the way specified in the instruction shall not be covered by this warranty.

Disclaimer

The warranty mentioned above may supersede any other warranty.

Order notification

The replaceable parts and optional parts can be ordered directly from the dealers authorized by SmartSafe. Please specify when ordering:

- Quantity ordered
- Part number
- Part name

Customer Service Center

If the equipment needs to be repaired, please send the equipment to SmartSafe, together with the purchase invoice and problem description. If the equipment is within the scope of the warranty, SmartSafe offer free maintenance; If the equipment is outside the scope of the warranty, SmartSafe will charge for maintenance and return freight.

Address of SmartSafe Company:

3F Building B, Qiao'an Technology Industrial Park, Guanlan, Longhua New District, Shenzhen, Guangdong, China. Postcode: 518110

Statement: The Company reserves the right to change the product design and specifications without prior notice. The appearance and color of the object may be different from that shown in the instruction manual. The object shall prevail. We have tried our best to make all the descriptions in the book accurate, but there are still some inaccuracies. If you have any doubt, please contact the distributor or after-sales service center. The company will not assume any consequences caused by misunderstanding.