

BYD 2023 Yuan PLUS EV Multifunction Video Controller Static Calibration

Tested Model: BYD 2023 Yuan PLUS EV

Function Description:

This function is used to perform static calibration of the front camera for Yuan PLUS EV. This function needs to be executed when the following situations occur:

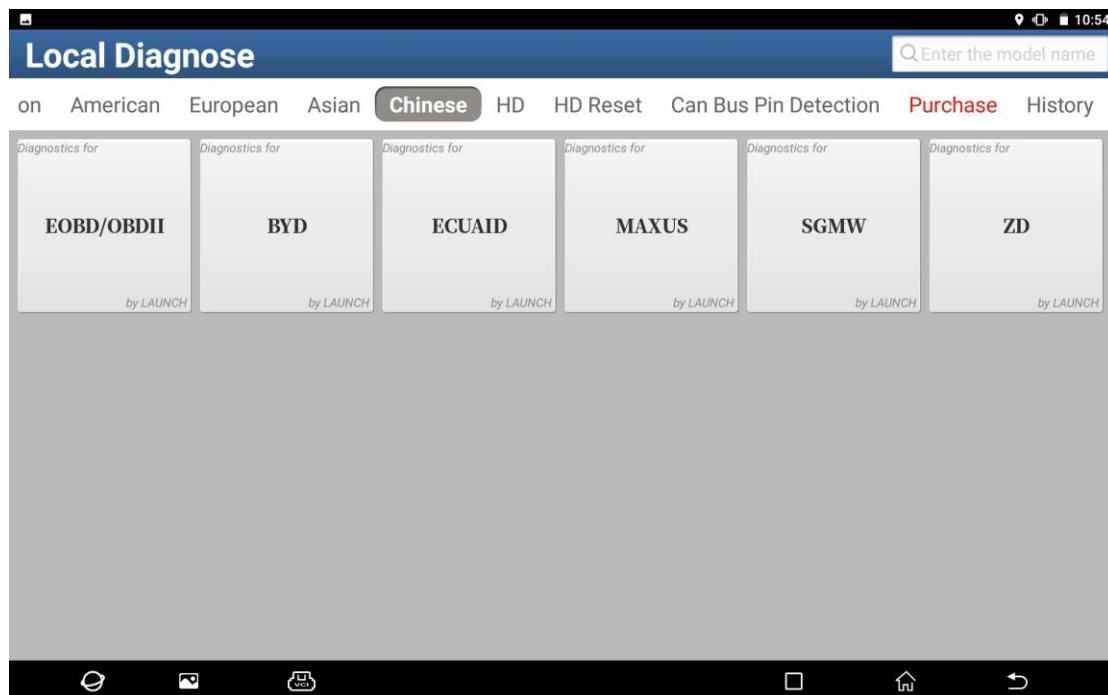
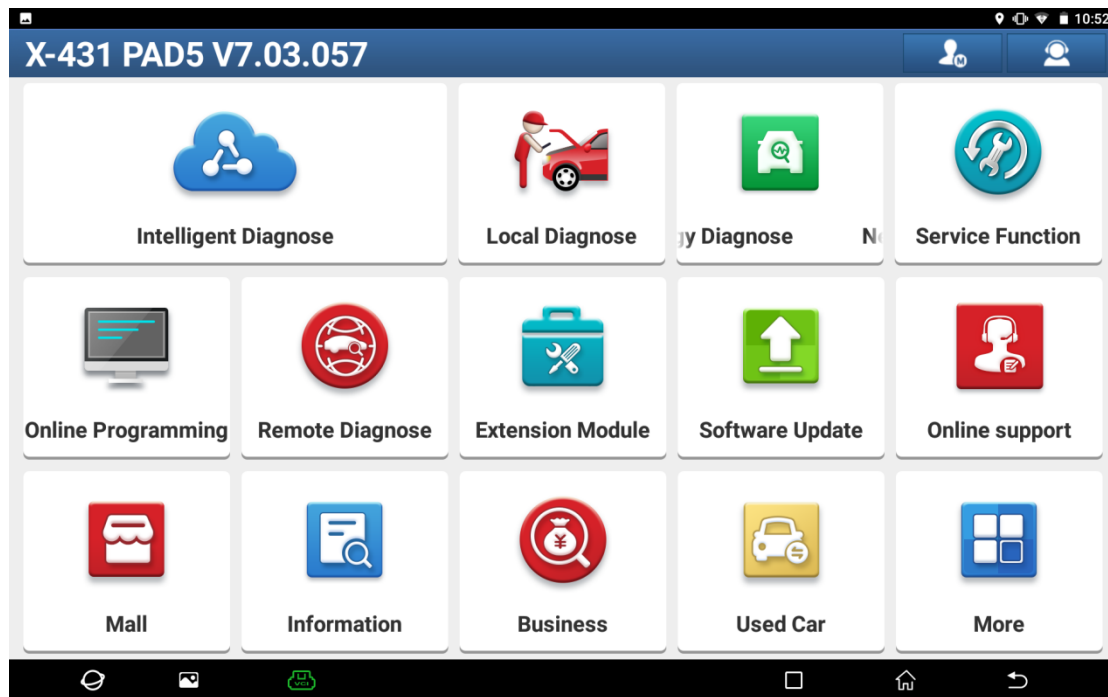
1. The front camera or multifunction video controller is replaced.
2. The front windshield is replaced.
3. The body structure is changed and the chassis is adjusted.
4. There are DTCs related to no-calibration.

Execution Conditions:

- The ADAS device is activated.
- The target and target placement tool are available.
- The calibration site is suitable.
- The ignition switch is in the ON position.
- The diagnostic instrument is connected to the network.

Procedure:

1. On an X-431 PAD 5, choose [Local Diagnose], and then choose [BYD] for testing.



2. Choose the latest BYD software upgrade version V19.80 or later. Click OK.

The screenshot shows the 'Vehicle Version Information' screen. At the top, there is a blue header with the title and navigation icons. Below it is a table with two columns: 'Software ID' and 'Version #'. The first row shows 'BYD' and 'V19.80'. Below the table is the title 'BYD Diagnosis Program V19.80' and the section 'UPDATE'. Under 'UPDATE', there are three sections: 'Summary:', 'New Functions:', and 'Optimized Functions:'. The 'Summary:' section contains a bullet point about adding five Toyota models. The 'New Functions:' section contains a bullet point 'None'. The 'Optimized Functions:' section contains three numbered bullet points describing various system updates. At the bottom right, there are two buttons: 'Vehicle Coverage' and 'OK'. The bottom of the screen shows a navigation bar with icons for home, back, and other functions.

Software ID	Version #
BYD	V19.80

BYD Diagnosis Program V19.80

UPDATE

Summary:

- Added five models Toyota bZ3, T5, T5A, T5D and T5LC. Updated the front radar and front camera static calibration target placement for all models.

New Functions:

- None

Optimized Functions:

- 1) Added basic functions and special functions including version information, DTC reading, DTC clearing, data stream reading, actuation test, battery pack code calibration, motor zero position calibration, VIN writing, airbag decoding, dynamic calibration and static calibration of 36 systems for Toyota bZ3.
- 2) Added functions of version information, DTC reading, DTC clearing, data stream reading and actuation test of 186 systems for four models BYD T5, T5A, T5D and T5LC.
- 3) Updated the front radar and front camera static calibration target placement. Added the support of ADAS products such as ADAS PRO PLUS V2, ADAS FCO, ADAS RADAR 3IN1, ADAS Mobile Plus and ADAS LITE.

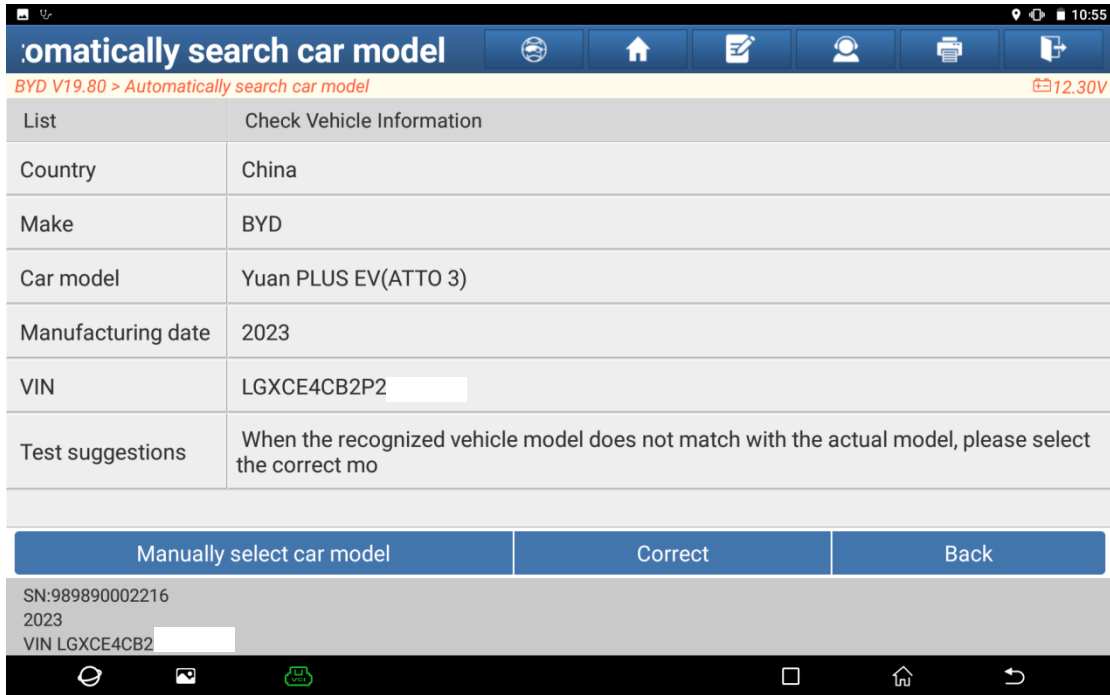
Vehicle Coverage OK

3. Choose [Automatically search car model].

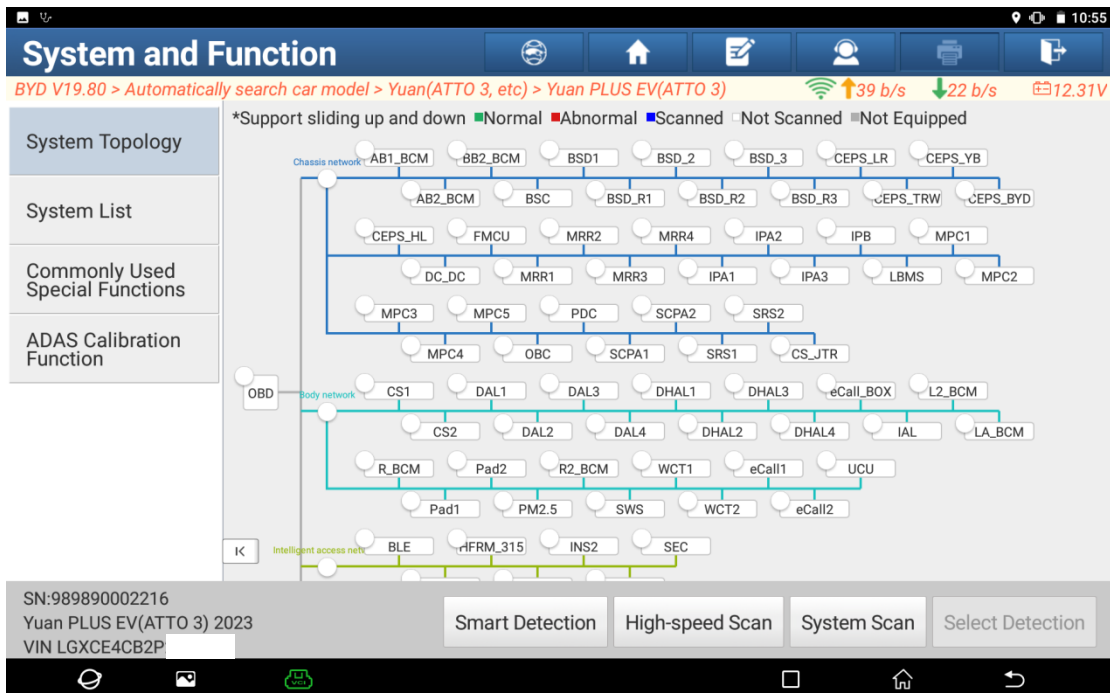
The screenshot shows the 'Show Menu' screen. At the top, there is a blue header with the title and navigation icons. Below it is a yellow bar with the text 'BYD V19.80 > Menu' and network status icons. Below the yellow bar is a search bar with the placeholder text 'Please enter keyword'. Below the search bar are two options: 'Automatically search car model' and 'Manually select car model'. At the bottom of the screen, there is a grey bar with the text 'SN:989890002216', '2023', and 'VIN LGXCE4CB2P2'. The bottom of the screen shows a navigation bar with icons for home, back, and other functions.

SN:989890002216
2023
VIN LGXCE4CB2P2

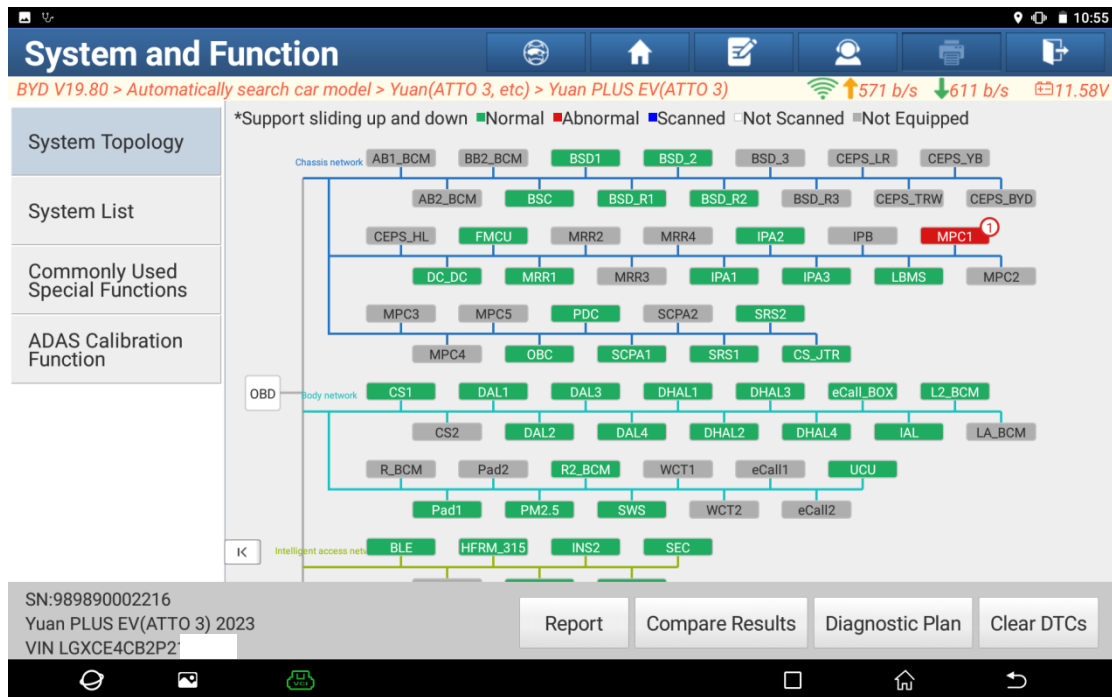
- Determine whether the identified model is consistent with the actual model. If they are consistent, click [Correct]. Otherwise, click [Manually select car model] to select the correct model for testing.



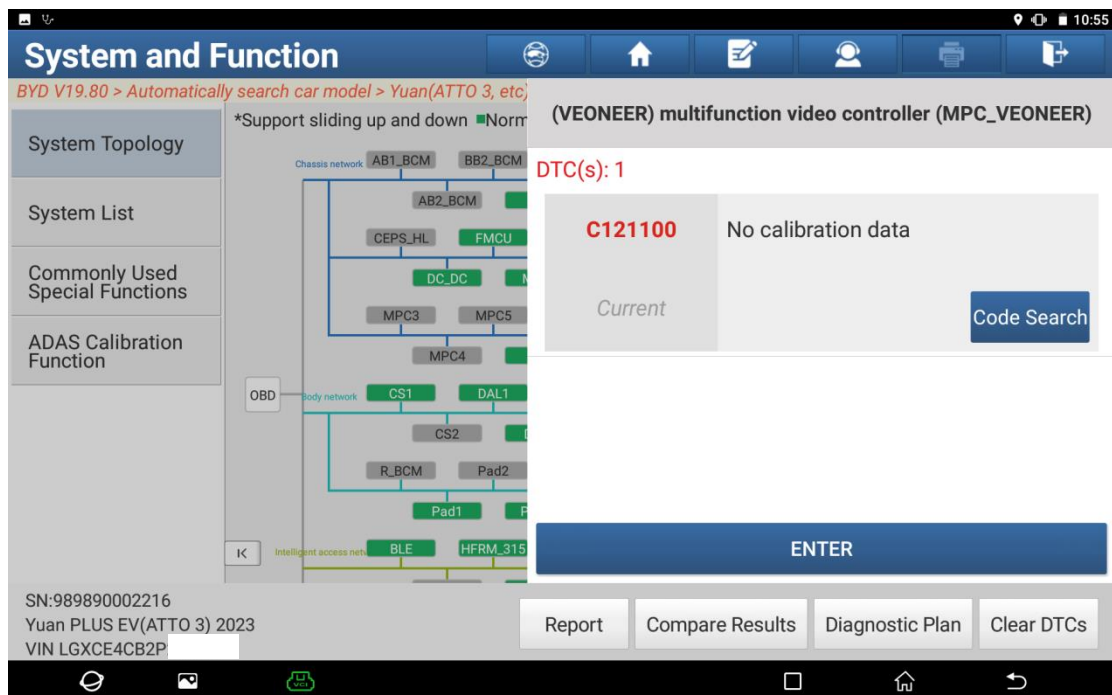
- Click [High-speed Scan].



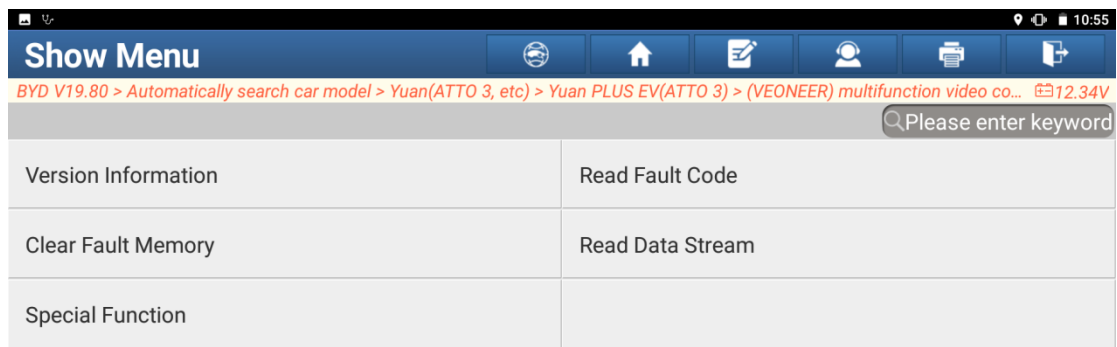
6. The correct front camera system is scanned out. Choose [MPC1] (VEONEER) multifunction video controller (MPC_VEONEER).



7. Click [ENTER].



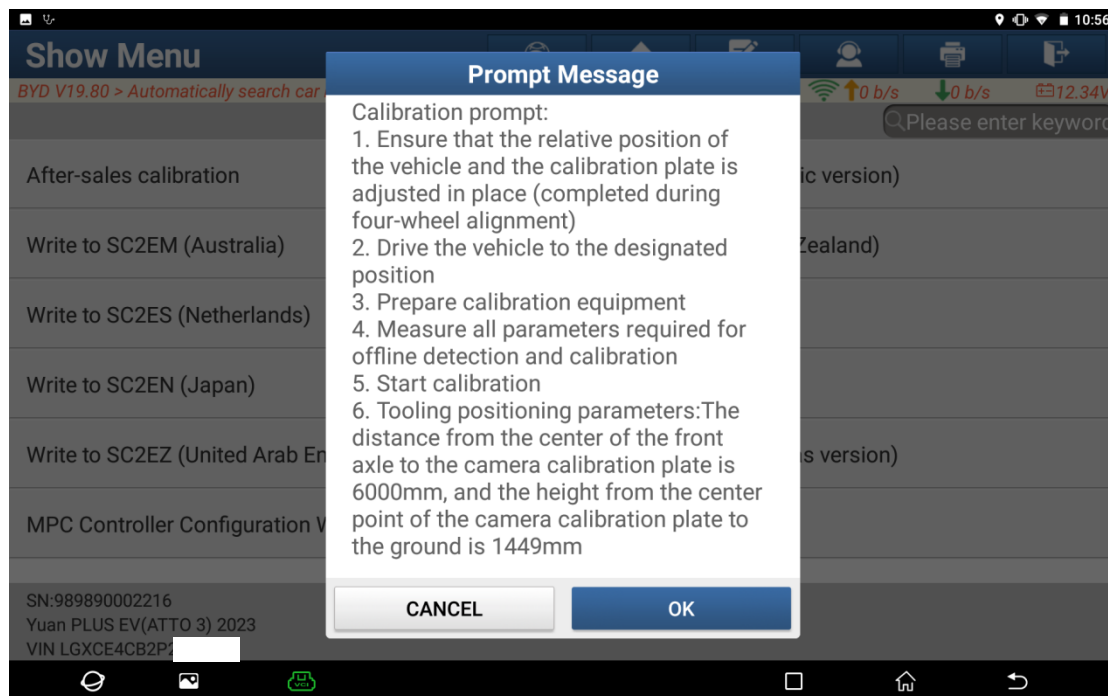
8. Click [Special Function].



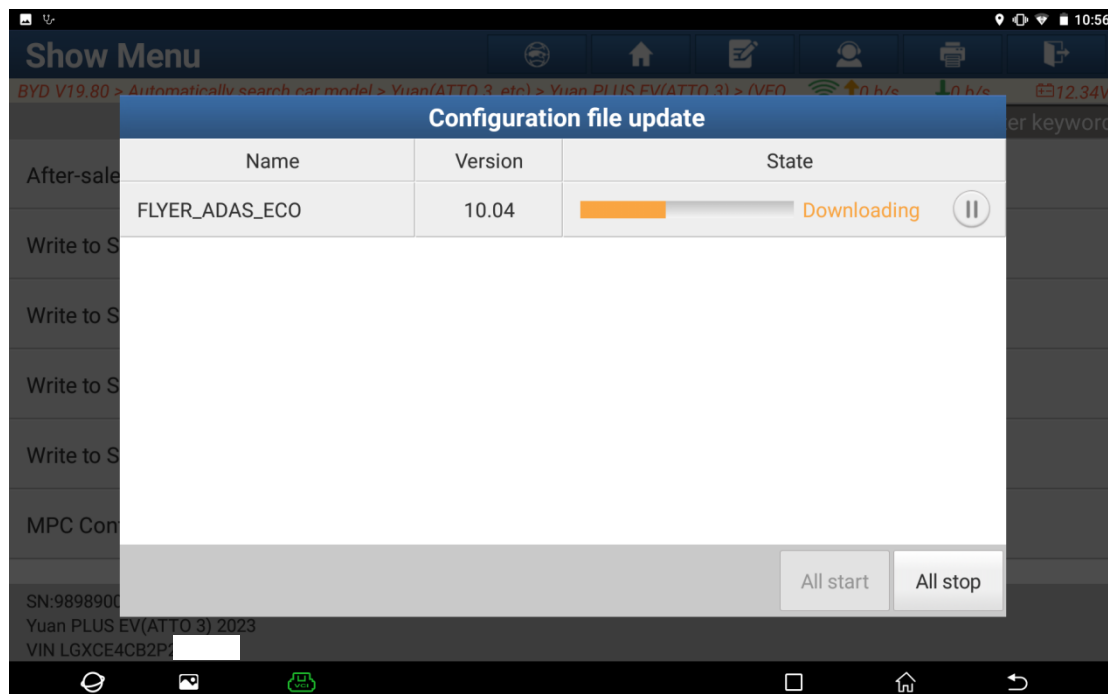
9. Click [After-sales calibration].



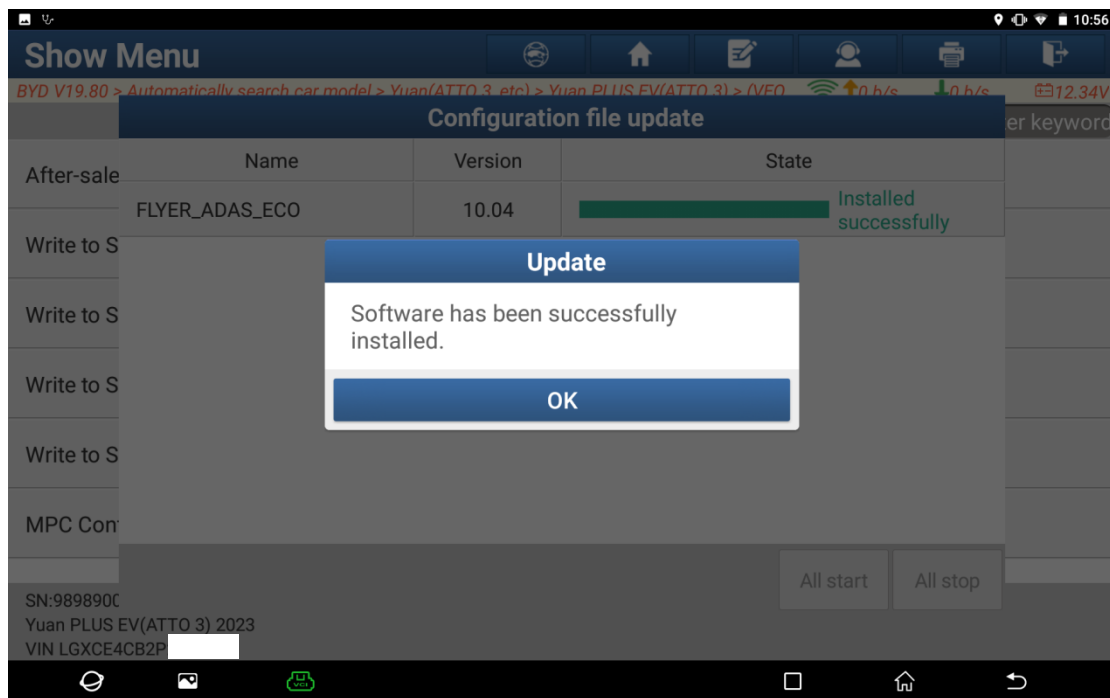
10. Drive the vehicle to a location suitable for calibration and click OK.



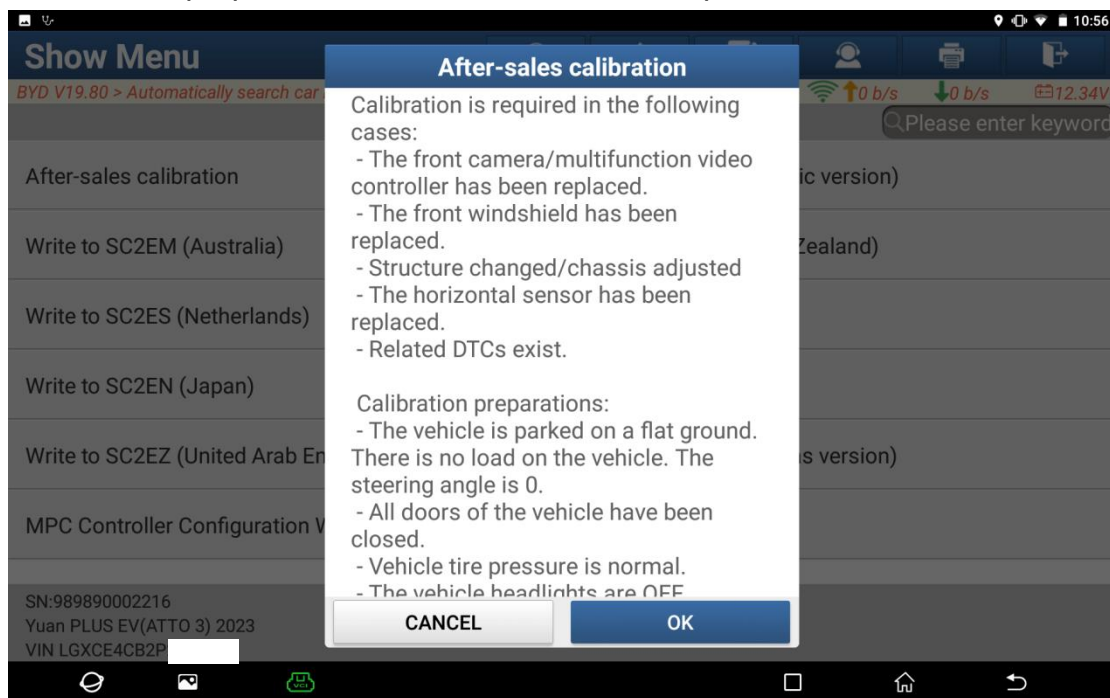
11. Taking the ADAS ECO product as an example, update the FLYER_ADAS_ECO configuration file to the latest version. If it has been updated, it does not need to be updated.



12. The configuration file is updated successfully. Click OK.



13. After the preparation before calibration is completed, click OK.



14. Place the target according to the prompts. Step 1: Confirm point A and point B, and click [Next Step].

After-sales calibration

[Step 1] Confirm point A and point B



1. Place **Plumb LAM09-06** at the center of the front vehicle logo, and let it hang down to the ground naturally. Place **Cross positioning sticker** and mark it as point A.
2. Place **five-line laser instrument** at point A.
3. Place **Plumb LAM09-06** at the center of the rear vehicle logo, and let it hang down to the ground naturally. Place **Cross positioning sticker** and mark it as point B.
4. Place **laser reflectivity plate LAM09-03** at point B.

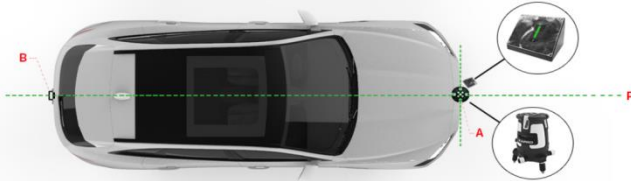
Reback Next Step

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VIN LGXCE4CB2F

15. Step 2: Connect points A and B with laser, confirm the vehicle center line P, and click [Next Step].

After-sales calibration

[Step 2] The laser connects points A and B, confirm the vehicle center line P



1. Place **auxiliary mirror LAM09-04** in front of the vehicle.
2. Ensure that the **five-line laser instrument** is level, turn on the switch and turn on the laser.
3. Slightly adjust the **five-line laser instrument**, so that the longitudinal laser shines on the central axle of **laser reflectivity plate LAM09-03**.
(if the chassis of the vehicle is too low for the laser to pass through, please exchange the positions of **five-line laser instrument** and **laser reflectivity plate LAM09-03**.)

Last Step Next Step

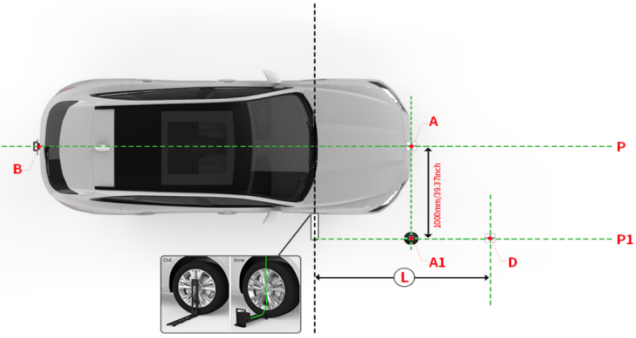
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16. Step 3: Confirm point C and click [Next Step].

After-sales calibration

[Step 3] Confirm point C

1. Place **positioning bracket LAM09-05** at the vehicle front wheel hub center.
2. Place **Cross positioning sticker** on the central horizontal laser line of **five-line laser instrument**, and mark point A1, it's suggested that the distance from point A to point A1 is 1000mm/39.37inch;
3. Move **five-line laser instrument** to point A1, so that its horizontal laser line passes through point A. Measure the distance from D to positioning bracket LAM09-05 on the longitudinal laser line P1, $L=6000\text{mm}/236.22\text{inch}$.

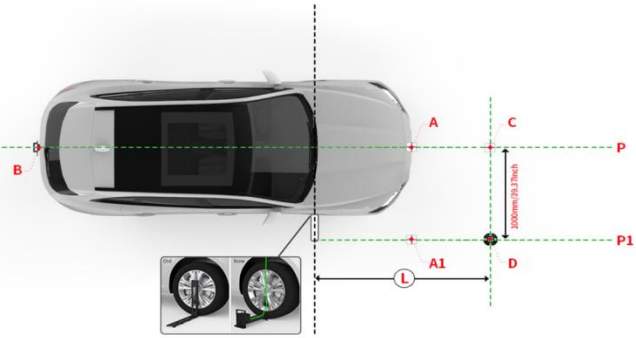


Last Step Next Step

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After-sales calibration

4. Move **five-line laser instrument** to point D, so that its longitudinal laser line passes through point A1, place **Cross positioning sticker** on the center line P, and mark it as point C, it is suggested that the distance from D to C is 1000mm/39.37inch.



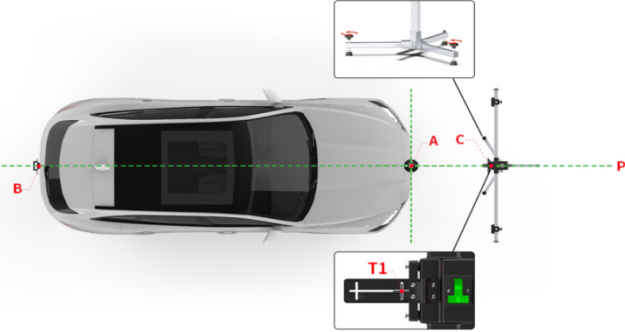
Last Step Next Step

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17. Step 4: Set and adjust the device to be parallel to the vehicle, and click [Next Step].

After-sales calibration

[Step 4] Place and adjust the device to be parallel to the vehicle



1. Place the device so that the T1 position of its base coincides with point C.
2. Observe the horizontal bubble on the beam, if the position is not centered, please adjust the base knob so that the horizontal bubble is located in the center.
3. Ensure that the device is parallel to the vehicle.


Last Step Next Step

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18. Step 5: Set the height and click [Next Step].

After-sales calibration

[Step 5] Set the height



1. Unlock the fixed knob and move the beam so that **H=1349mm/53.11inch**.

Last Step Next Step

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19. Step 6: Select the vehicle model target. BYD uses the Romeo target (LAM01-11). Click [Calibration] to start calibration.

After-sales calibration

[Step 6] Select the vehicle model target

1. Install and fix the target bracket.
2. Turn up the middle hanging plate① of the target support and move the left and right slider② to both sides.
3. Use **LAM01-11** target. Align the groove at the bottom of the target with the clamping position of the bracket③. Lock and tighten the target through the left and right slider②.

Last Step Calibration

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20. Read the calibration results. If the “Calibration Result 1: Completed, Calibration Result 2: Normal” is displayed, the calibration is successful. If it fails, adjust according to the failure prompt, and you can re-calibrate for multiple times. Click [Back] to exit the calibration.

After-sales calibration

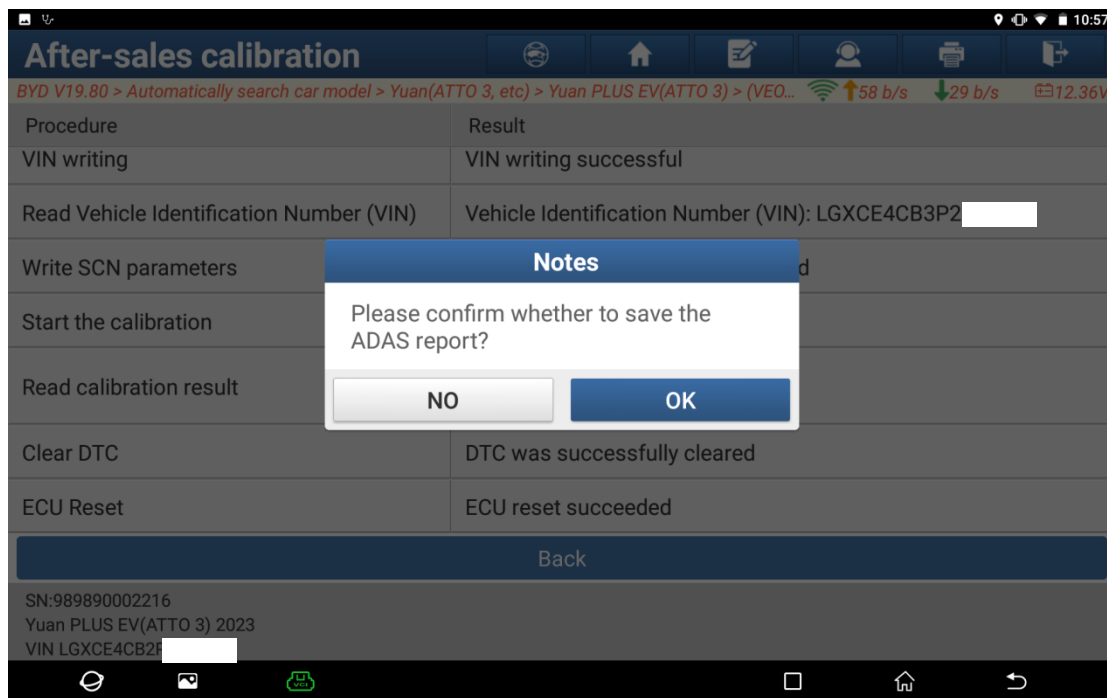
BYD V19.80 > Automatically search car model > Yuan(ATTO 3, etc) > Yuan PLUS EV(ATTO 3) > (VEO... 1.11 kb... 864 b/s 12.36V

Procedure	Result
VIN writing	VIN writing successful
Read Vehicle Identification Number (VIN)	Vehicle Identification Number (VIN): LGXCE4CB3P2
Write SCN parameters	Writing SCN parameters succeeded
Start the calibration	Return Calibration Result: Running
Read calibration result	Calibration Result 1: Completed Calibration Result 2: Normal
Clear DTC	DTC was successfully cleared
ECU Reset	ECU reset succeeded

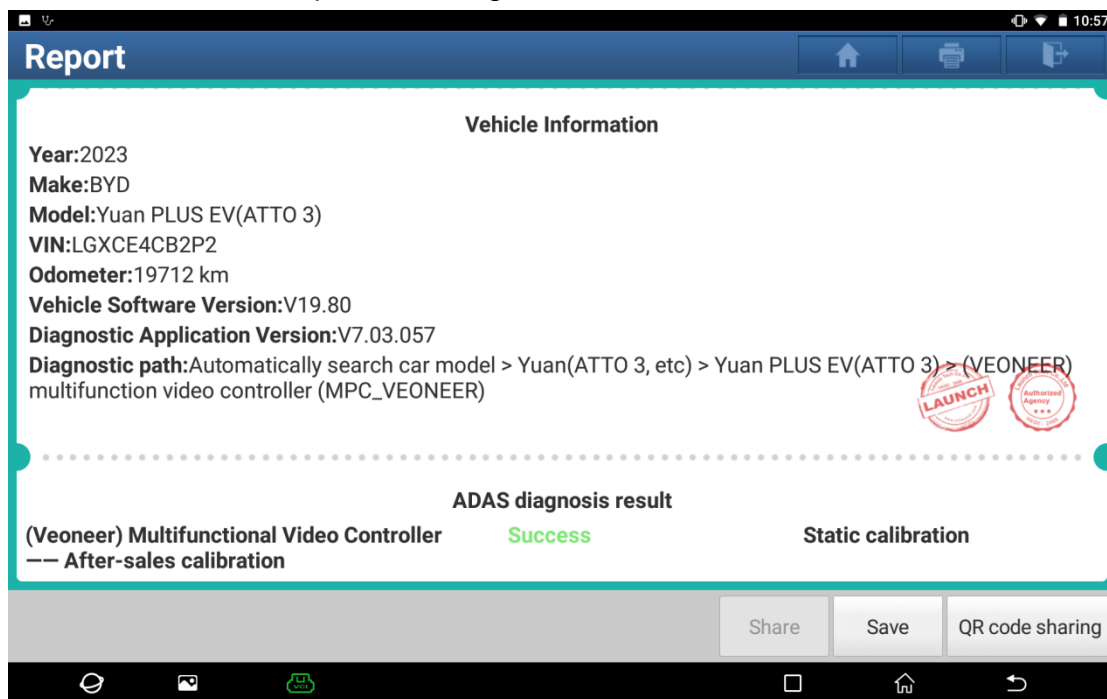
Back

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VIN LGXCE4CB2F

21. Click OK to save the ADAS report or click NO to exit.



22. Save the ADAS report, showing that the calibration was successful.



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