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BN360-4000AI
Setup Tool User Guide

Please read this manual thoroughly before operating the device and keep it for future reference.
V1



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1 Introduction

1.1 Welcome

This manual provides instructions on how to use the BN360-4000AI Setup Tool, including descriptions of each component and guidance on configuring settings.

Applicability

This manual applies to the BN360-4000AI Setup Tool, version 1.0.0.0.

Purpose of the manual

This guide explains how to use the BN360-4000AI Setup Tool to generate the calibration binary file required for the firmware upload process.

Contents

This manual is organized as follows:

- **1 Introduction** – Outlines the purpose and applicability of this manual.
- **2 Installation and Uninstallation** – Provides instructions for installing and uninstalling the BN360-4000AI Setup Tool.
- **3 General Functions** – Describes the main user interface components and how to edit calibration settings within the tool.
- **4 Calibration Mode** – Describes the Calibration Mode user interface, including the main menu bar and the captured image screen panel.
- **5 Getting Started** – Explains the procedures for loading, saving, and generating the calibration binary file.
- **6 Configuration Mode** – Describes the device configuration settings and how to save the configuration binary file.

1.2 Terms in this manual

Term	Explanation
Config (config file)	A configuration file provides the input data required by the calibration tool,
	including view data and other parameters used during calibration.
Generation	The process of converting edited calibration settings and source data into a final binary file according to specified conditions.
Binary File	The output file generated by the BN360-4000AI Setup Tool. It contains the finalized calibration values edited in the configuration panel and is used during the firmware upload process.
Components	All graphical user interface (GUI) elements and controls displayed within the BN360-4000AI Setup Tool.

2 Installation and Uninstallation

2.1 System requirements

To install and run the BN360-4000AI Setup Tool, the following minimum system requirements must be met:

- **Operating system:** Windows 10, version 2004 (20H1), or later.
- **Available storage space:** 10 GB or more.
- **System memory (RAM):** 8 GB or more.
- **GPU:** NVIDIA GeForce 900 series or later.
- The application may prompt you to install the required Microsoft .NET Framework version or Windows service pack when it is first launched.
- The application may prompt you to install the Microsoft Visual C++ 2013 Redistributable Package when it is first launched.
- Administrator privileges may be required to save or generate files in protected locations.

2.2 Installing BN360-4000AI Setup Tool with the installer

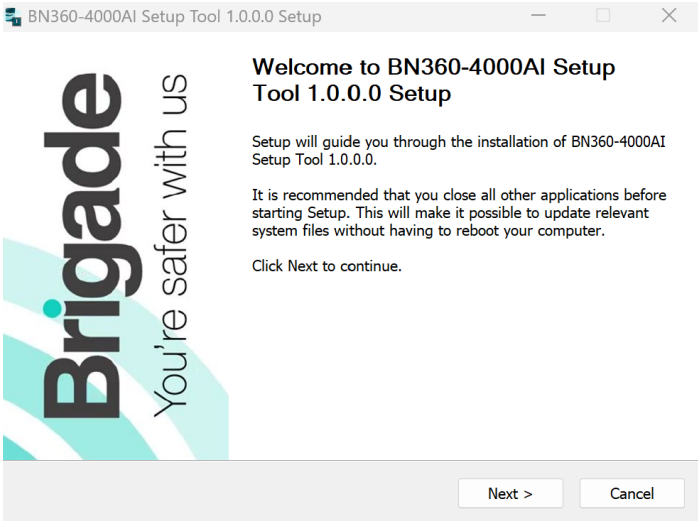
Note:

✓ It is recommended that you uninstall any previous version of the BN360-4000AI Setup Tool before installing a new version. See section 2.3, Uninstalling BN360-4000AI Setup Tool with the installer.

✓ Close the application completely before beginning the installation.

Installation steps

1. Run BN360-4000AI Setup Tool 1.0.0.0 Installer.exe.
2. In the BN360-4000AI Setup Tool Setup Wizard, click **Next**.

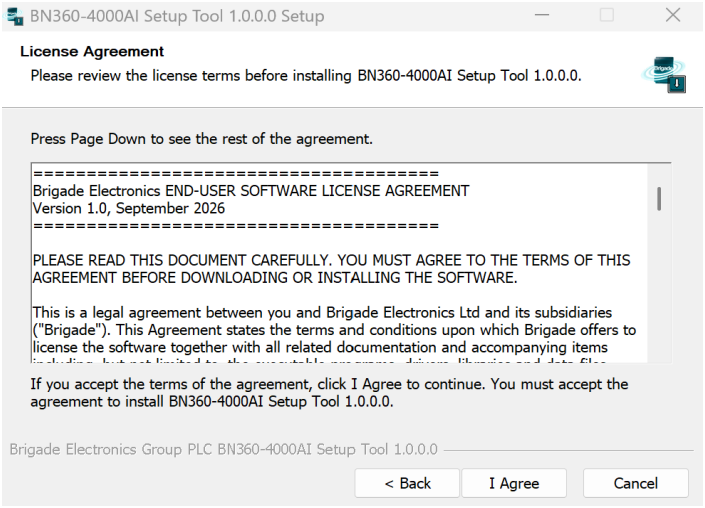


2 Installation and Uninstallation

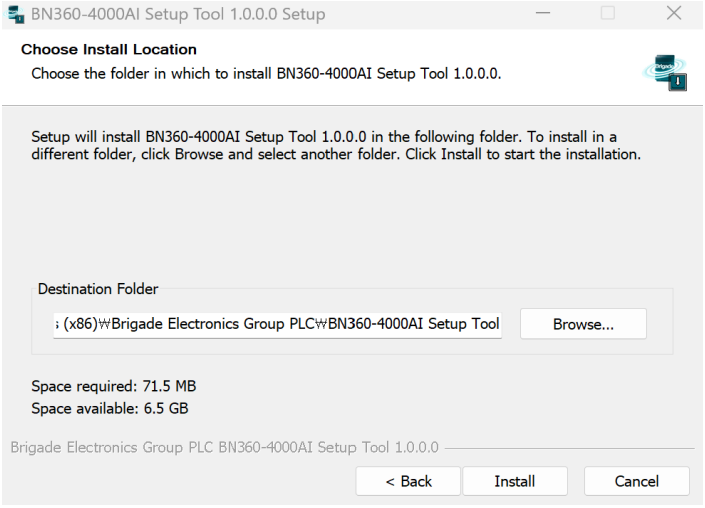
Continued

Installation steps - Continued

3. Review the licence agreement. If you accept its terms, click **I Agree**.

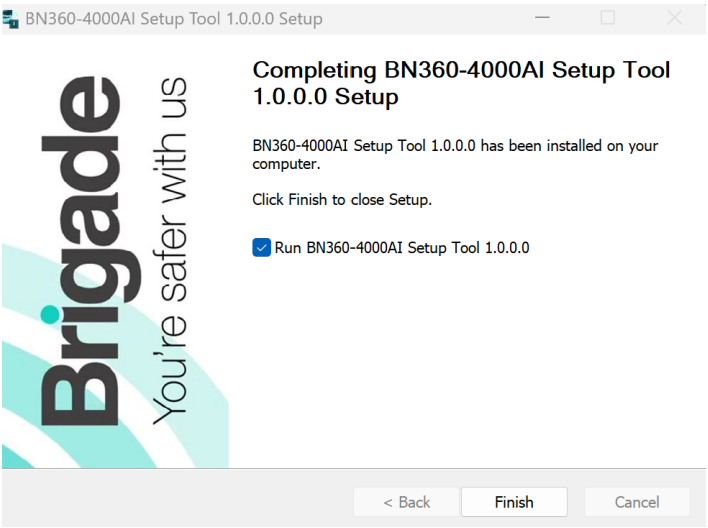


4. Choose a destination folder and click **Install** to start the installation.



Installation steps - Continued

5. When the installation is complete, clear the Run BN360-4000AI Setup Tool check box if you do not want the application to start automatically, and then click Finish.



2.3 Uninstalling BN360-4000AI Setup Tool with the installer

The BN360-4000AI Setup Tool can be uninstalled in two ways:

1. Run the Uninstall.exe file located in the program installation folder.
2. Use Windows Settings.

Note:

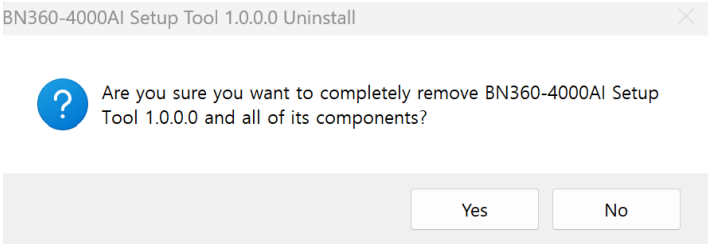
✓ Close the application before beginning the uninstallation.

2 Installation and Uninstallation

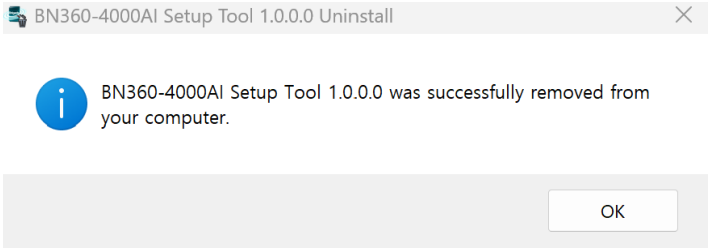
Continued

Using the uninstaller

1. Run **uninst.exe** in the program installation folder.
2. Click **Yes** to uninstall the BN360-4000AI Setup Tool.



3. When uninstallation is complete, click **OK**.

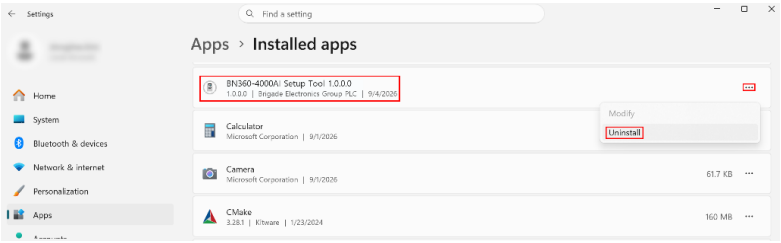


2 Installation and Uninstallation

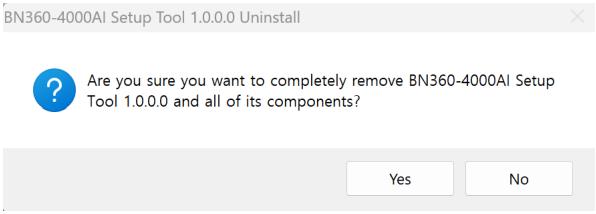
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Using Windows Settings

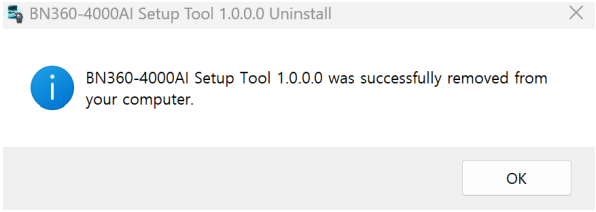
1. In Windows 11, go to **Settings** → **Apps** → **Installed apps**.
   Locate the BN360-4000AI Setup Tool, select **More options**, and then select **Uninstall**.



2. Click **Yes** to uninstall the BN360-4000AI Setup Tool.



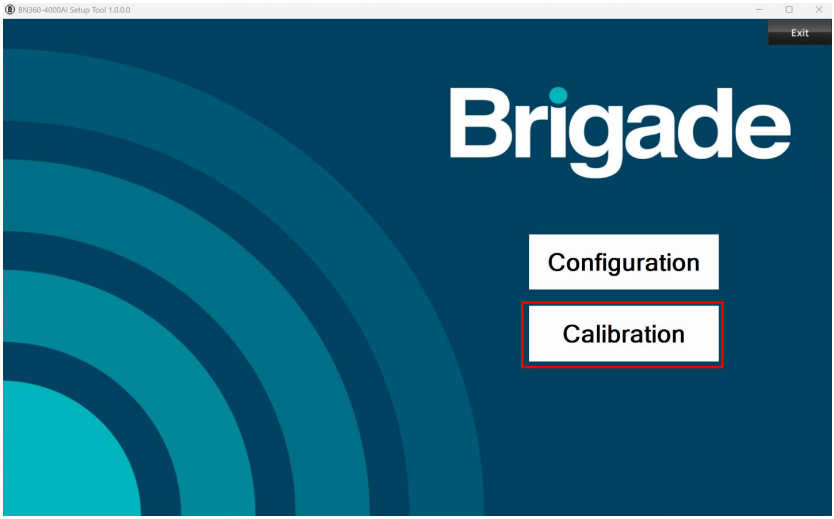
3. When uninstallation is complete, click **OK**.



3 General functions

3.1 Main user interface components

This chapter describes the user interface (UI) components and how to use them.



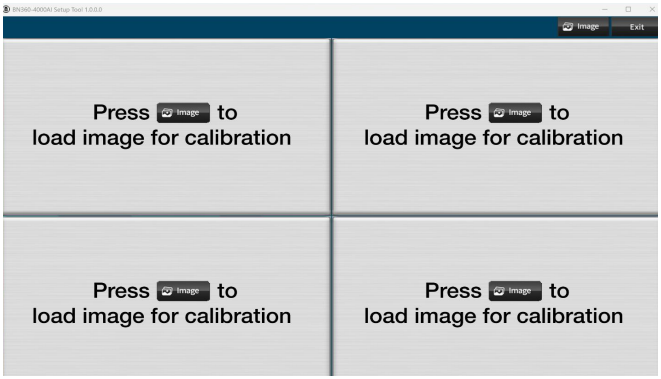
When you select Calibration, the program starts in Calibration Mode.

4 Calibration Mode

4.1 User interface components

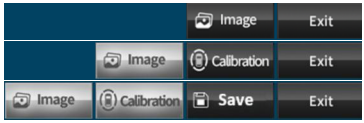
The user interface consists of the following parts:

1. Title bar 2. Main menu bar 3. Captured image screen panel



4.1.1 Main menu bar

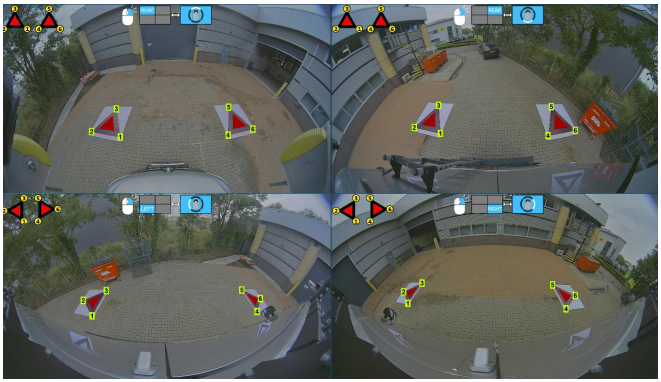
The main menu bar is located below the title bar.



- Image: Opens the Image Loader to load a captured image file.
- Calibration: Opens the Calibration window. This command becomes available after image data is loaded.
- Save: Generates an updated calibration binary file. This command becomes available after the calibration data is configured.
- Exit: Closes the calibration tool.

4.1.2 Captured image screen panel

After you load a captured image file, the Captured image screen panel displays the four camera images, as shown below:

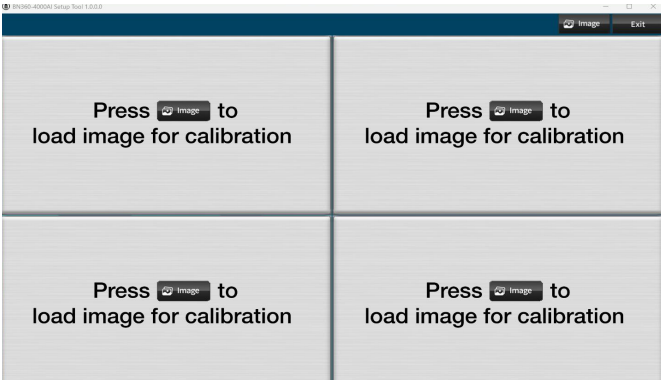


5 Getting Started

5.1 How to use functions

5.1.1 Run BN360-4000AI Setup Tool

When the BN360-4000AI Setup Tool is launched, the main screen appears, as shown below.



5.1.2 Load a captured image file

To load a captured image file, select Image after loading the configuration file. The Image Loader window opens, allowing you to select the captured image file and configure the required image-loading options.

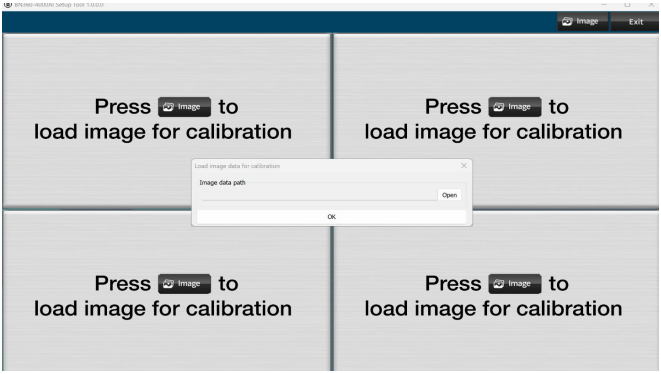
In the Image Loader, specify the captured image file path, enabled camera channels, marker type, and marker length, and then select OK. The tool imports the data and detects or loads the control points.

When the image file has loaded successfully, the Image button changes to its active state.

After the control points are detected or loaded, the calibration tool labels them according to the option selected in the Image Loader:

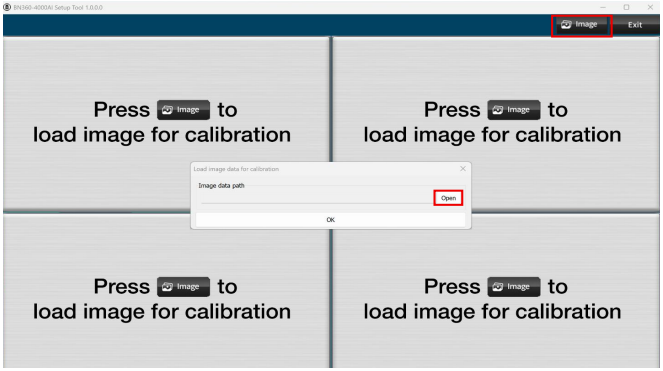
• If Load Control Points is used, the labels are orange.

• If auto-detection is used, the labels are light green.

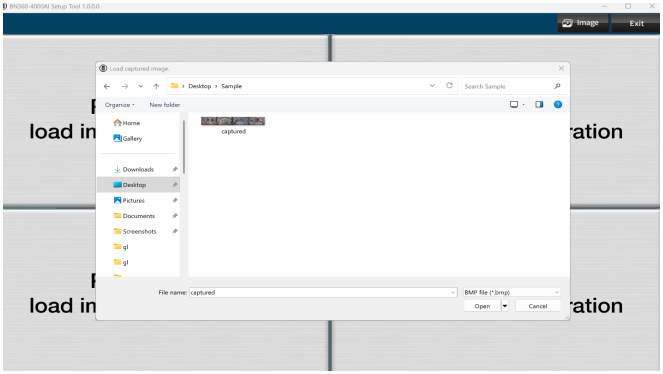


5 Getting Started Continued

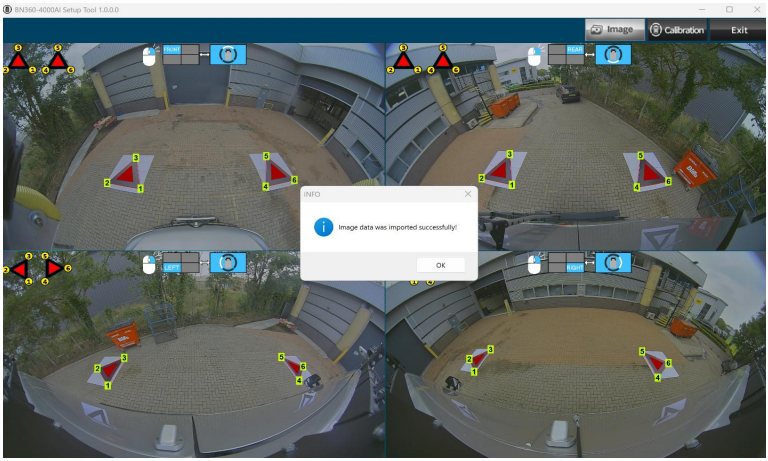
• Opening the Image Loader.



• Opening the system file browser to select a captured image file.

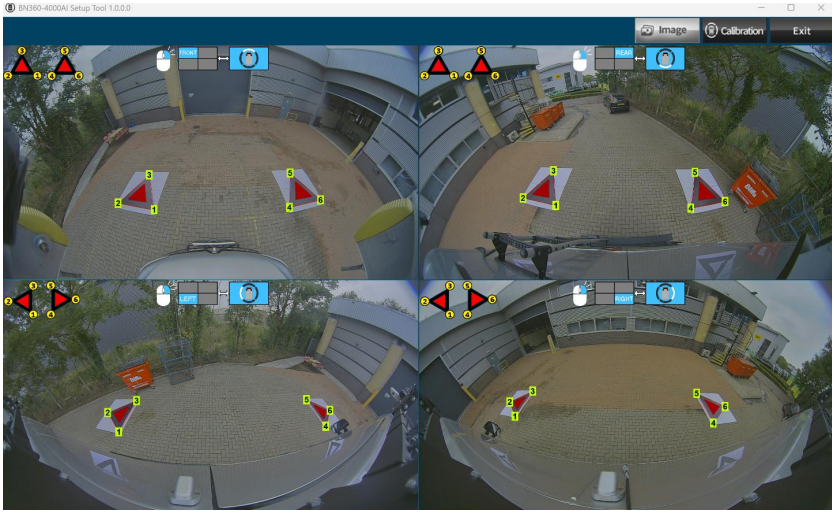


• Captured image file loaded with auto-detected control points (light-green labels).



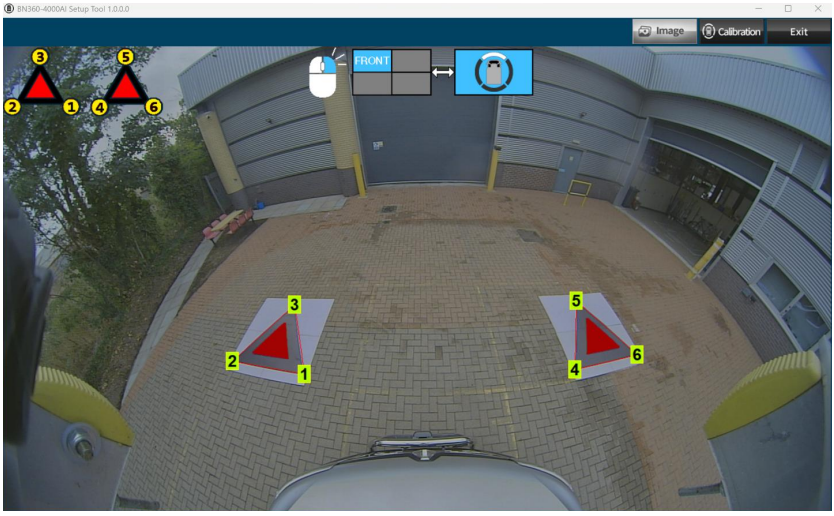
5.1.3 Modify control points

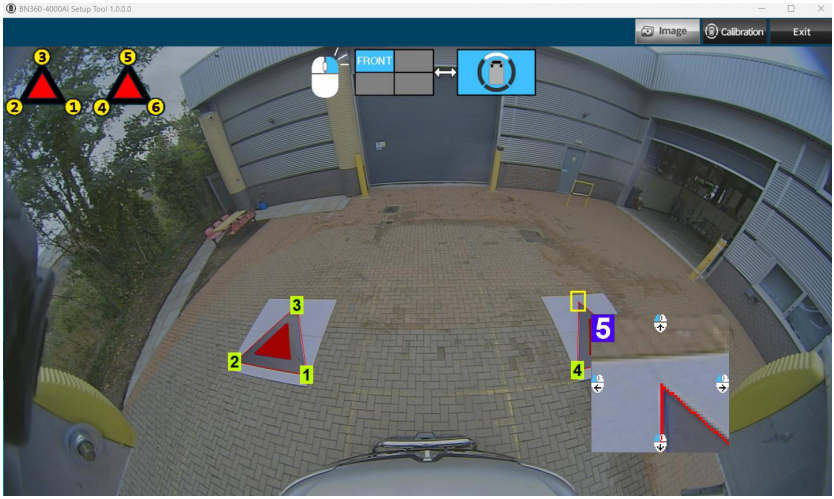
After the captured image file is loaded, the calibration tool displays the captured image for each channel in the **Captured image screen panel**, as shown below.



The calibration tool provides the following features to make it easy to modify the control points:

- Right-click a channel to switch the **Captured image screen panel** between four-channel (4 CH) and single-channel (1 CH) view.





- The tool allows you to drag and drop linked triangular control-point groups.
- You can also move each vertex by using the arrow keys.
- To move the selected vertex by a larger increment, hold Ctrl while pressing an arrow key.

5.1.4 Calibration

Select Calibration to run the calibration process using the imported settings and control points. When the process is complete, the calibration results appear in the **Calibration Tool** window.

To improve the calibration result, modify values such as **Vehicle Settings** and **Vehicle Margin**, and then run the calibration again.

The calibration user interface consists of the following parts:

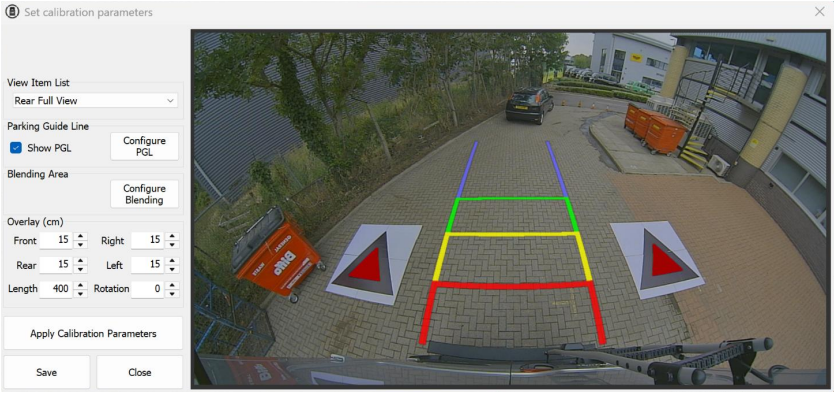
1. Calibration Control Panel 2. View Screen



- The Calibration Control Panel contains the following components:
  - View Item List
  - Parking Guide Line
  - Blending Area
  - Overlay (cm)
  - Apply Calibration Parameters
  - Save
  - Close
- **View Item List**

  View Item List displays all view items available in the application.
  - When you select a view item, it is displayed on the **View Screen**.
  - When calibration is complete, the **View Item List** automatically switches to **Top View**.
  - View items are listed in the order defined in the view specification.
- **Parking Guide Line**

  Parking Guide Line displays parking guidance lines in the rear-camera view to assist with reversing. The option is available only for supported views.



You can set the detailed parameters in “Configure PGL”.



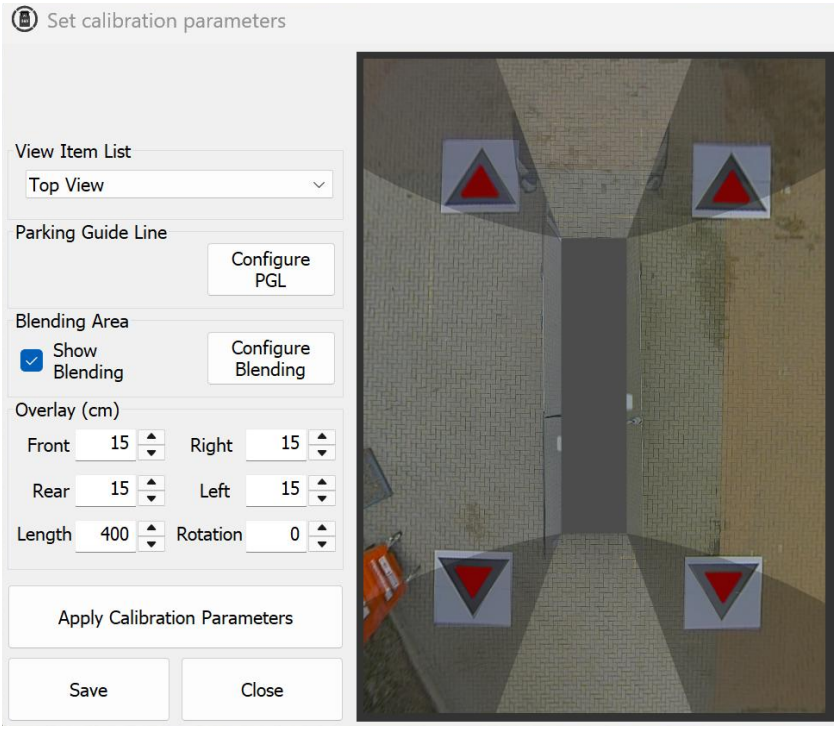
The detailed parameters of the Parking Guide Line are as follows:

- **Common Info:** General settings for the Parking Guide Line.
  - Width: Sets the width of the Parking Guide Line.
  - Vertical Shift: Sets the vertical position of the Parking Guide Line in the rear-camera view.
  - Connecting Line: Sets the style of the horizontal branch lines. (Connected (checked) or Broken (unchecked))
  - Opacity: Sets the opacity of the Parking Guide Line. (0% (transparent) to 100% (opaque))
- **Zone:** Sets the detailed settings for the PGL zones (up to 5 zones).
  - Distance: Sets the position of each zone.
  - Branch Length: Sets the length of the branch lines (available only with the Broken line style).
  - Colour: Sets the colour of each zone.
  - Guideline: Sets the length and colour of the lines showing the vehicle's expected path.

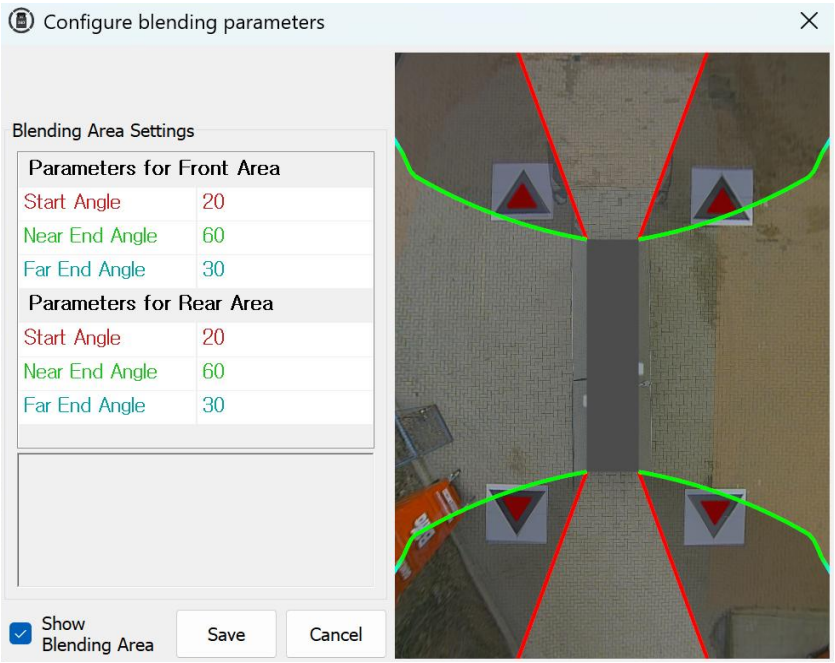
After modifying the parameters, select Save to apply the new settings.

- **Blending Area**

Blending Area sets the blending region where adjacent camera images overlap at each corner of the vehicle in the Top View. The option is available only for supported views.



You can set the detailed parameters in “Configure Blending”.



Blending areas can be set separately for the front and rear. You can set the **Start Angle, Near End Angle**, and **Far End Angle** for each channel. To change an angle value, click it and enter the new value.

Note: The sum of the Start Angle and Near End Angle values must not exceed **85 degrees**.

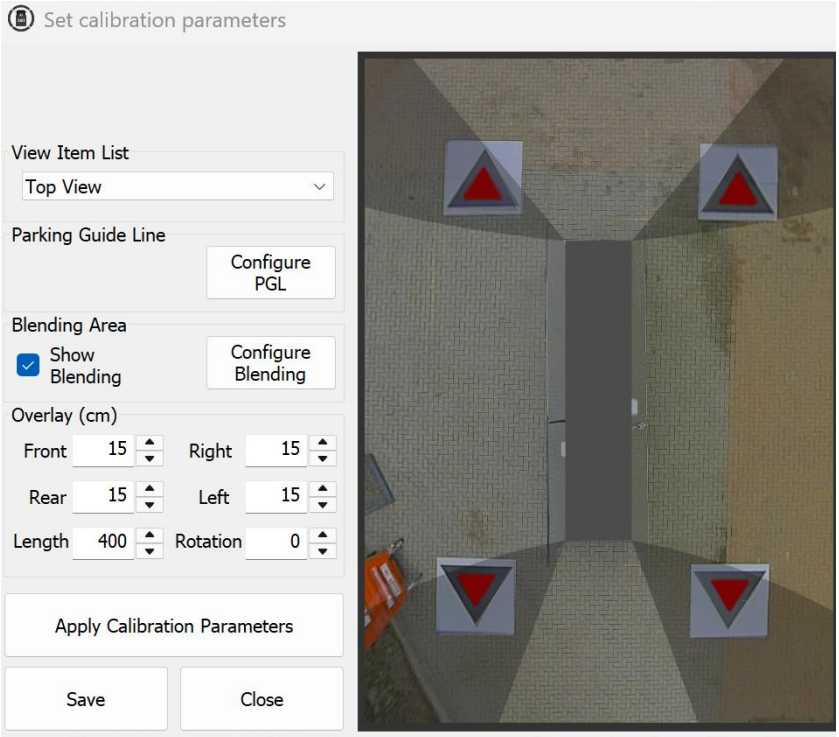
After modifying the parameters, select **Save** to apply the new settings.



Start Angle = **20 degrees**



Start Angle = **40 degrees**

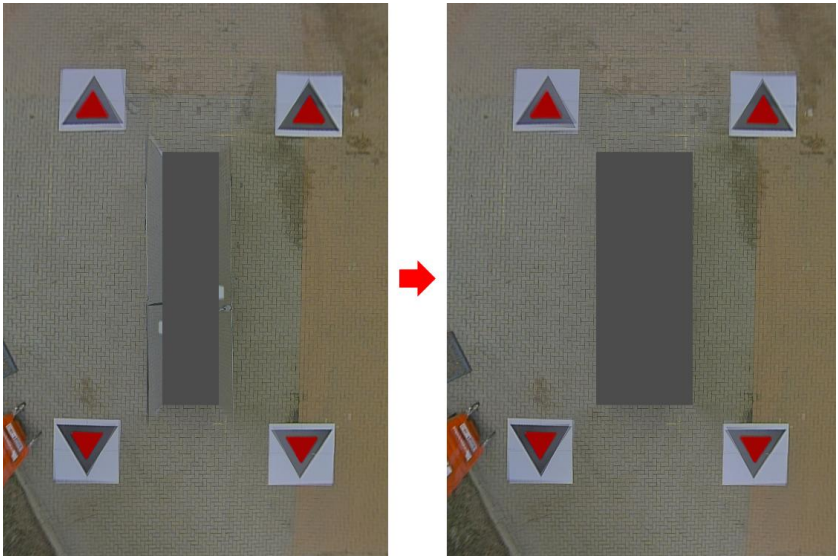


The updated Top View image is displayed after you save the new blending parameters.

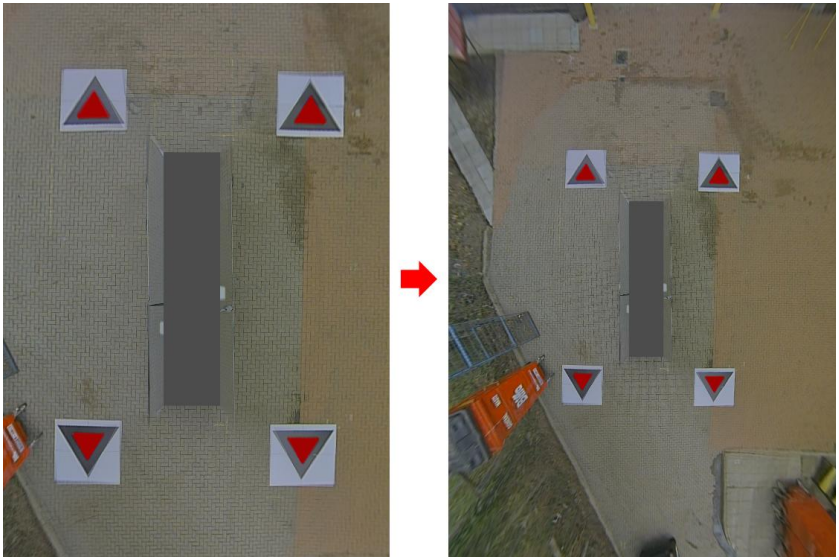
- **Overlay**

Overlay provides six controls: Front, Rear, Right, Left, Length, and Rotation.

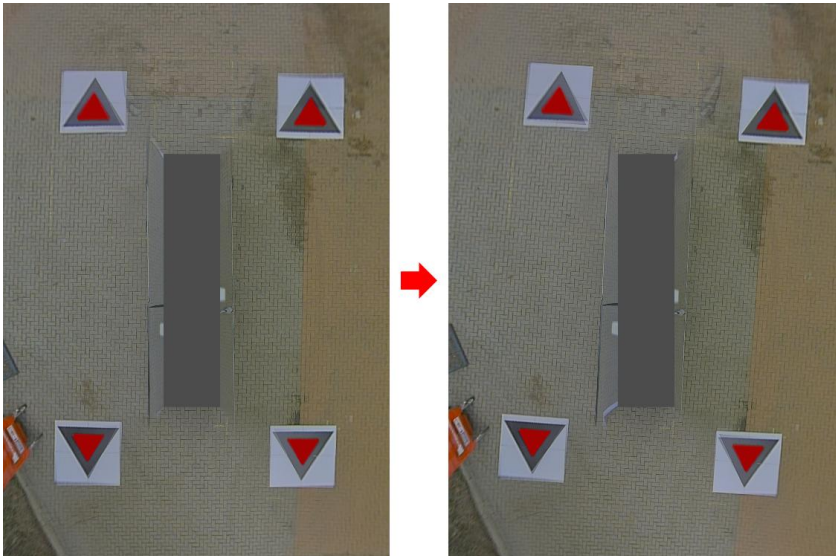
- The vehicle masking area can be resized by modifying each margin.
- After you change a value and move the focus (by pressing Enter or Tab, or by clicking elsewhere), the calibration runs automatically and the updated Top View image is displayed.
- This function is particularly useful when the vehicle body is visible outside the masking area.
- For example, the first image below shows the vehicle body outside the masking area with all margins set to zero, and the second shows the masking area resized with appropriate margins (Front: 15, Rear: 15, Right: 15 → 65, Left: 15 → 65).



- Use Length to adjust the area displayed around the vehicle in the Top View. For example, change Length from 400 to 800.

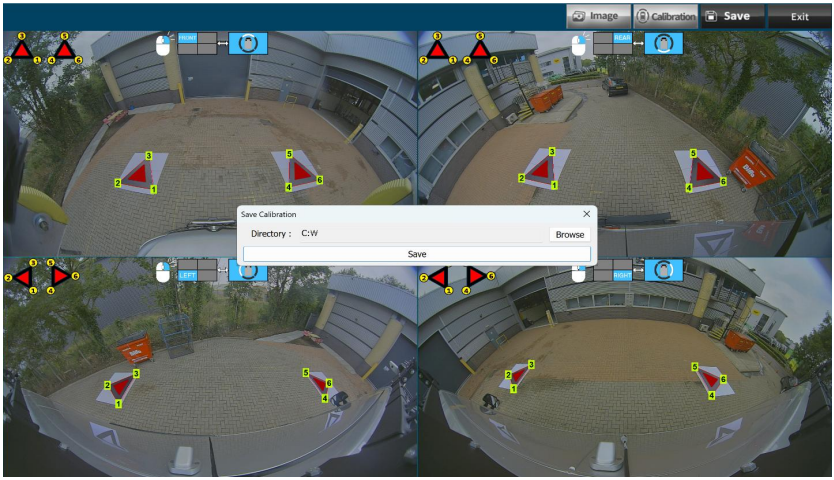


- Use Rotation to rotate the Top View. For example, change Rotation from 0 to -3.



5.1.5 Save

Save is available from **Tools** on the main menu bar. Use it to generate the calibration binary file for upload to the system.



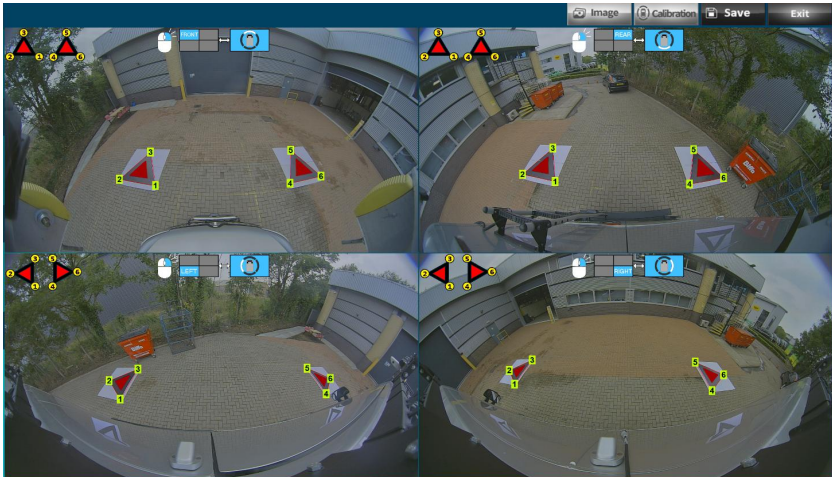
- Select **Save**.
- Select **Save** to export the calibration binary file.
- Select Browse to specify a custom save location for the binary file.

Note: Name the file ns7ResPack.bin before uploading it to the ECU.

If the file has a different name, the ECU configuration upload will fail.

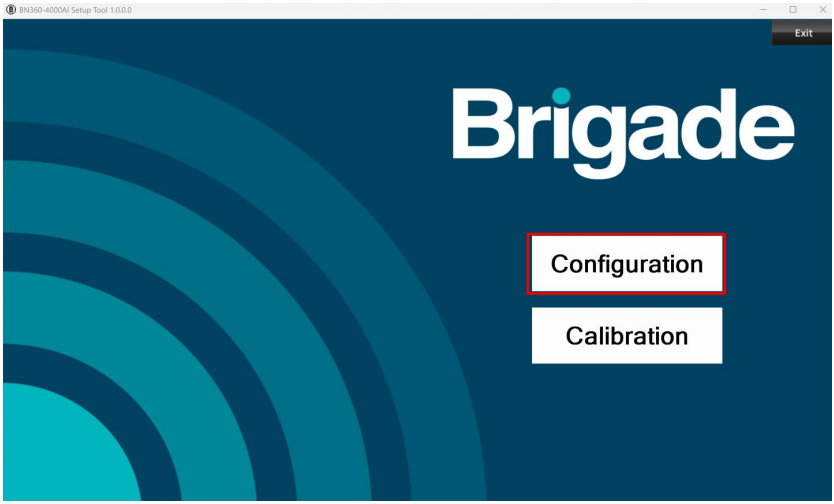
5.1.6 Exit

Select Exit to close Calibration Mode and return to the main menu.



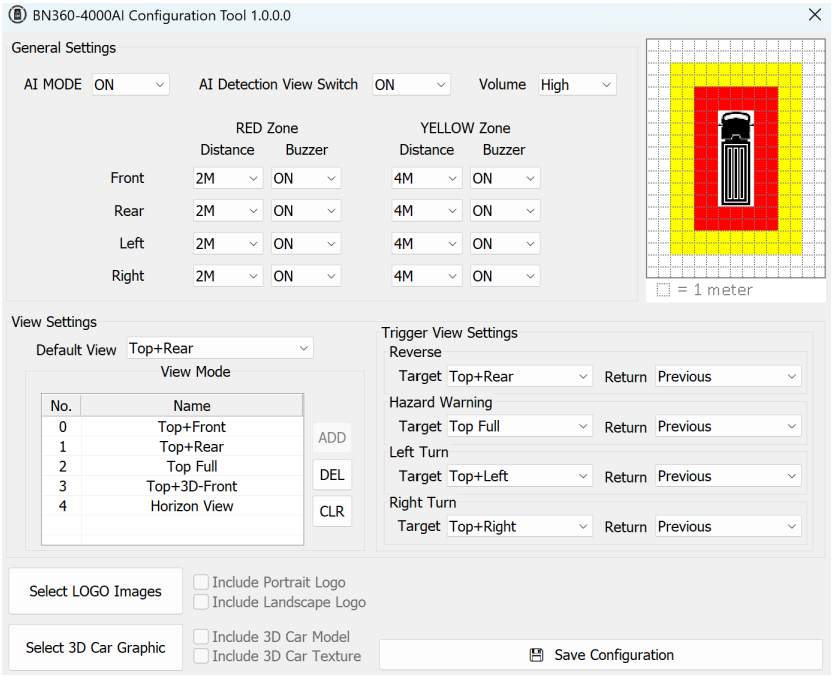
6 Configuration Mode

6.1 Main user interface components



When you select Configuration, the program starts in Configuration Mode.

6 Configuration Mode Continued



The user interface consists of the following parts:

1. General Settings
2. View Settings
3. Trigger View Settings
4. Select LOGO Images
5. Select 3D Car Graphic

6.2 General Settings

AI MODE	Enables or disables AI Mode on the device.
AI Detection View Switch	Enables or disables automatic view switching based on AI Mode.
Volume	Sets the volume of the alert sound.
RED Zone	Sets the RED zone distance and buzzer for each camera channel.
YELLOW Zone	Sets the YELLOW zone distance and buzzer for each camera channel.

Note: The RED zone distance cannot exceed the **YELLOW zone distance**.

6.3 View Settings

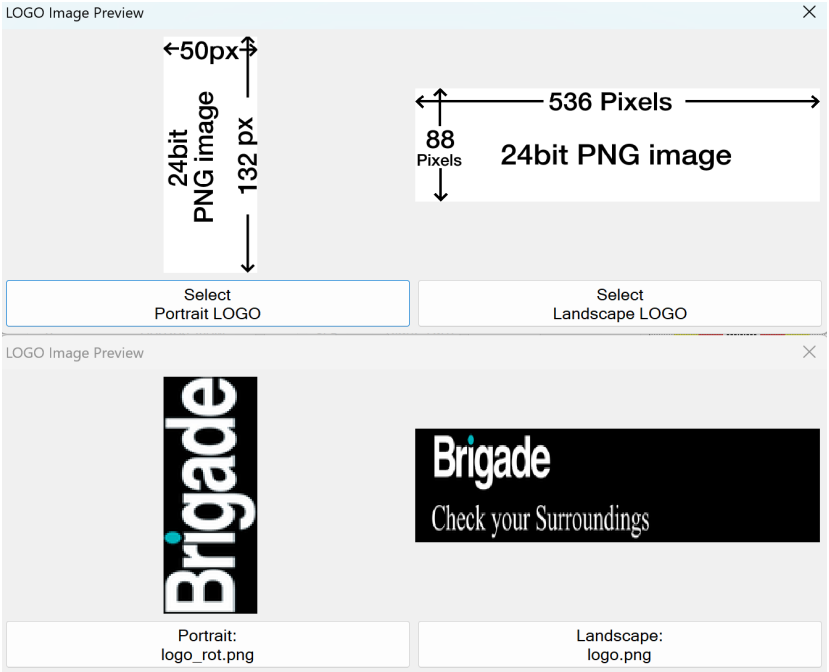
Default View	Sets the view displayed when the device starts up.
View Mode	Sets the list of views that can be selected on the device.

Note: View Mode can contain **up to 5 items.**

6.4 Trigger View Settings

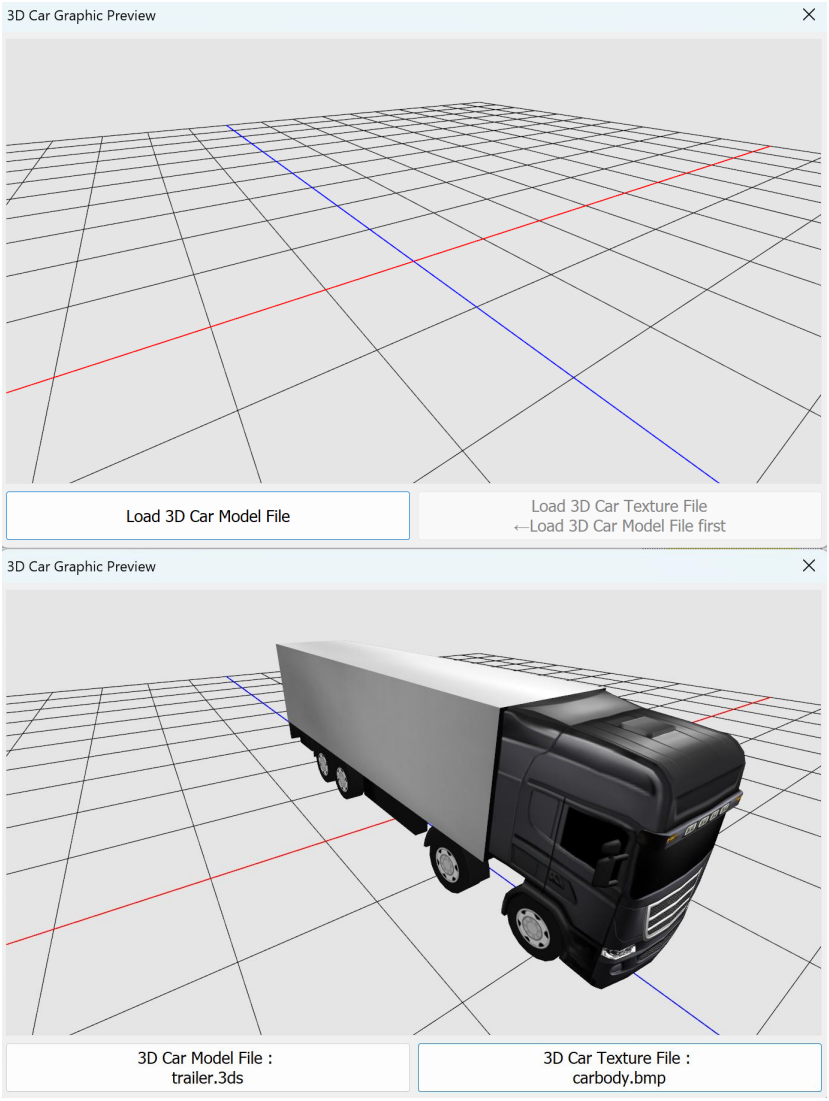
Reverse	Sets the view displayed when the vehicle is in reverse gear.
Hazard Warning	Sets the view displayed when the system detects an obstacle around the vehicle.
Left Turn	Sets the view displayed when the left turn signal is on.
Right Turn	Sets the view displayed when the right turn signal is on.

6.5 Select LOGO Images



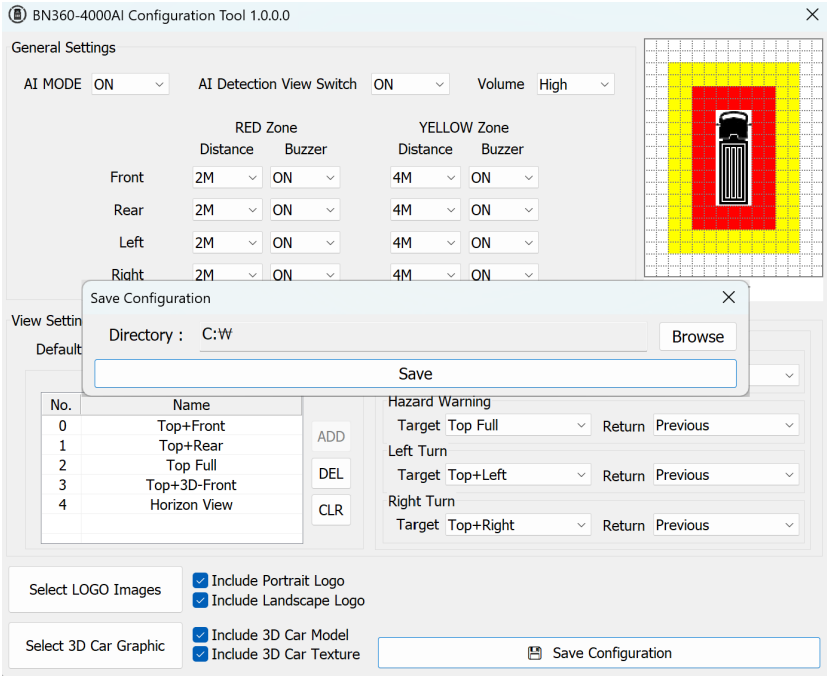
- Select the button or image to import a logo image file.
- Select X in the upper-right corner to return to the main menu.

6.6 Select 3D Car Graphics



- Select the buttons to import the 3D car model and texture image files.
- Select X in the upper-right corner to return to the main menu.

6.7 Save Configuration



- Select Save to export the calibration binary file.
- Select Browse to specify a custom save location for the binary file.
- Select or clear each check box to include or exclude the corresponding resource file.

Note: Name the file ns7ResPack.bin before uploading it to the ECU.

If the file has a different name, the ECU configuration upload will fail.