UVIS User Manual

Applicable Models: ZK-VSCN100

Version: 1.0 Date: Sep. 2017

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Chapter 1 User Instruction

1.1 Purpose

Preparation of this document is intended to improve vocational skills of maintenance personnel. Make sure they can play a role as vehicle inspection system maintenance personnel well and respond, judge and maintain for customer quickly. Through this document, you will learn how to install, maintain and use the system.

1.2 Reading Object

Personnel for Under Vehicle Inspection System maintenance and operator.

1.3 General Introduction

This document includes the following several aspects:

1) System requirement.
2) Software installation and configuration.
3) Software instructions.

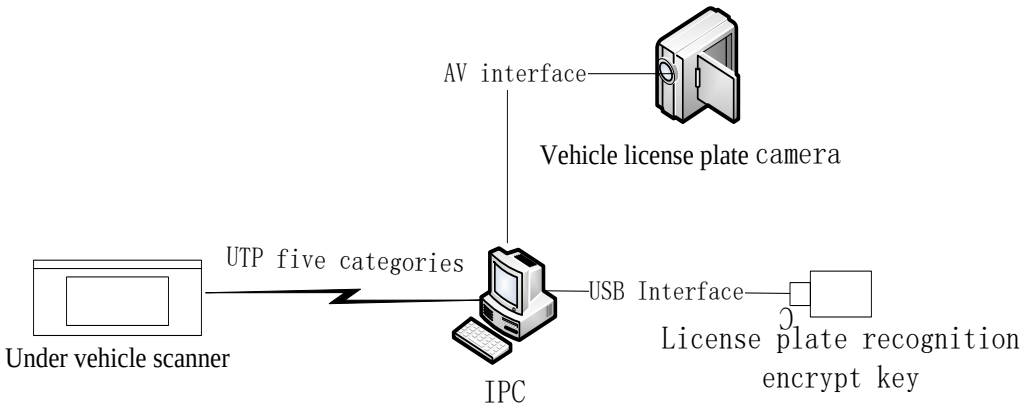
Chapter 2 System Installation

2.1 Installation Profile

Vehicle inspection system required to run the program, including under vehicle scanner drivers, configuration tools, video capture card driver, CCTV DVR, monitor terminal, license plate recognition module drive and control registration and vehicle inspection systems. System database is Microsoft Access 2003/2007 system. All installation procedures required are provided in the root directory where system is installed.

2.2 System Hardware Connection Structure

The hardware device used in system consists of an industrial personal computer, vehicle scanner, vehicle license plate cameras and license plate recognition module. Hardware connection diagram (main part) can be seen below.



Note:

1) When the images saved by capturing is blue, try switching to connect to the channel of host video capture card.

2.3 Software Requirement

Table 1 Software sheet

No.	Software name/catalogue	Note
1	Driver \ PCIVideoCaptureDriver	Video acquisition card driver
2	CCDConfigureTools \ MVGESDK_BIT32.exe	Gigabit nics camera driver
3	CarCheck.exe	Car inspection system software
4	Microsoft Access 2003/2007	Database software
5	Windows XP/Windows 7（32bit）	Windows 7 system, does not support 64 - bit

2.4 Hardware Requirements

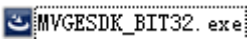
Table 2 Hardware configuration sheet

NO.	Hardware Name	Note
1	under vehicle scanner	Offer by the under vehicle inspection system software provider.
2	PC machine	1） Operation system Windows XP/Windows 7（32bit） 2） Hardware requirement Dual-core 3.0Ghz CPU.Memory:2G,200G or more free hard disk space, Gigabit Ethernet, USB 2.0 interface 2 above 1920*1080
3	PCI video capture card	Offer by the under vehicle inspection system software provider
4	License plate cameras	Offer by the under vehicle inspection system software provider
5	License plate recognition encryption dog	Offer by the under vehicle inspection system software provider

Chapter 3 Software Installation and Configuration

3.1 Scanner Driver Installation and Configuration

3.1.1 Driver Installation

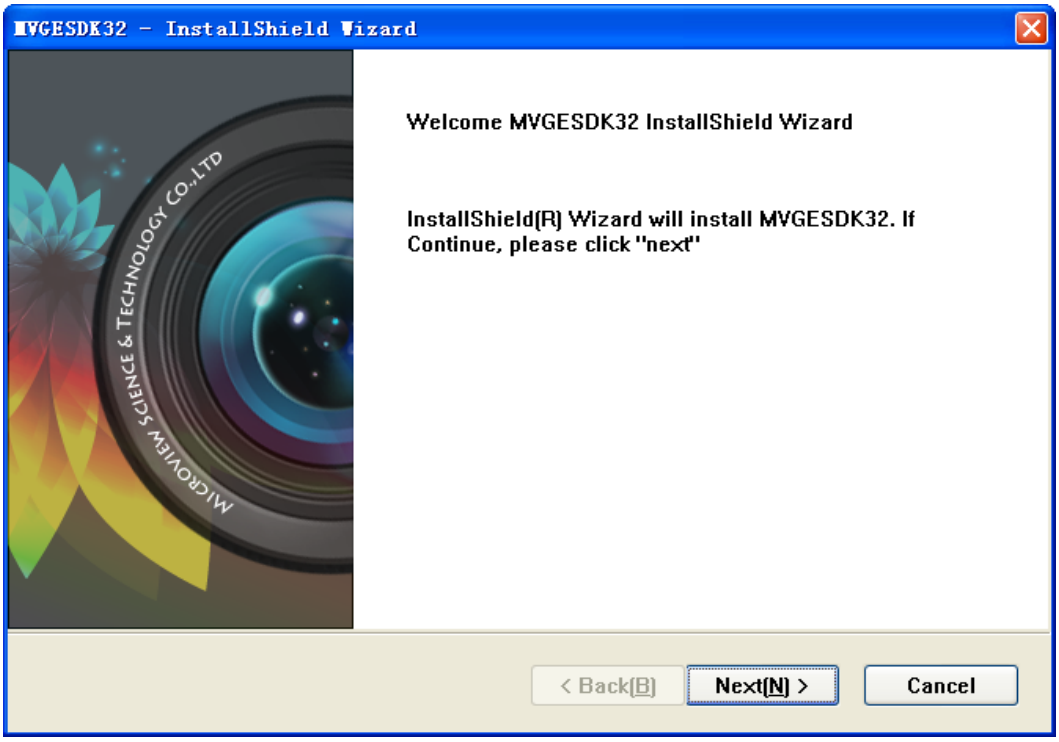
Step 1: Double click 

to install Microview driver.

Step 2: Select the installation language in the pop-up window, as shown below.



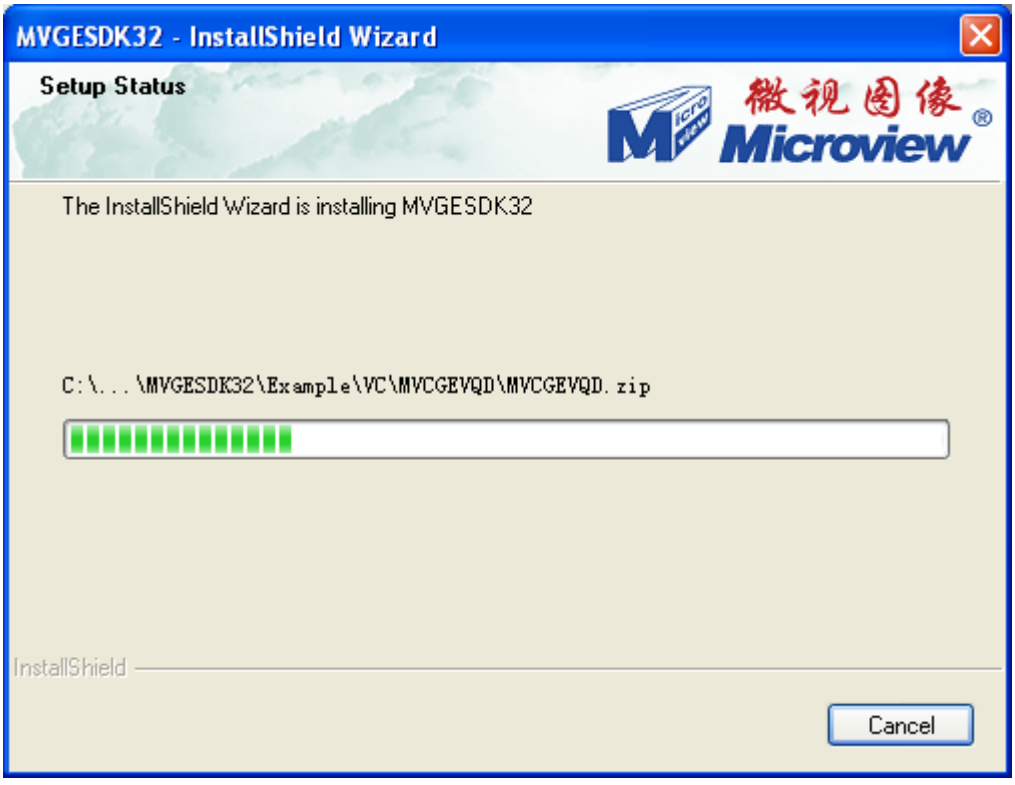
Step 3: After confirming the installation language, please click [Next[N]>] in the following window.



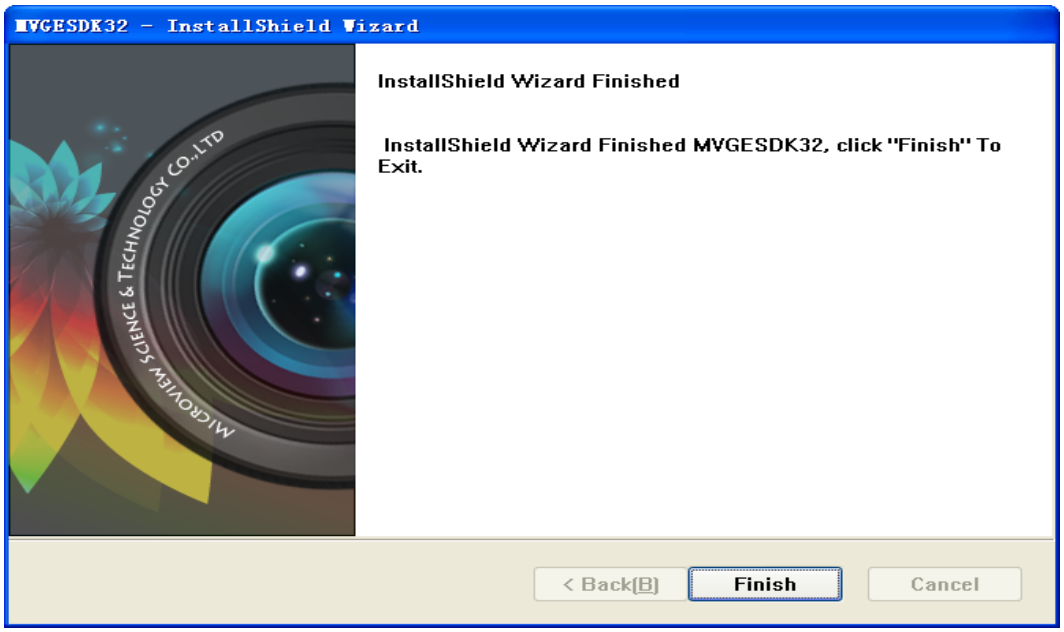
Step 4: When installation progress gets to the following interface, the user is encouraged to select [Complete], unless the user is very familiar with the system to choose click [Custom] key. And then click [Next], Click [Install] in the subsequent window to begin the installation.



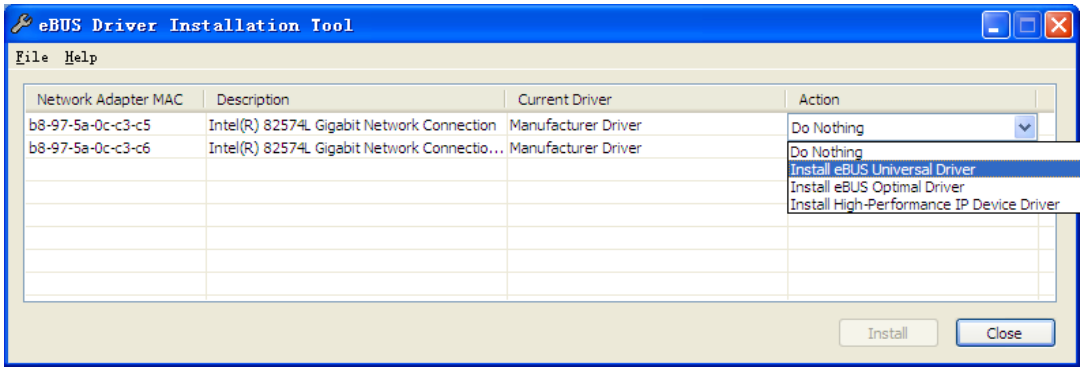
Step 5: There is a progressing picture during installation processing below.



Step 6: Complete the installation interface as shown below, click on [Finish] after the installation program will automatically start the next desired driver.

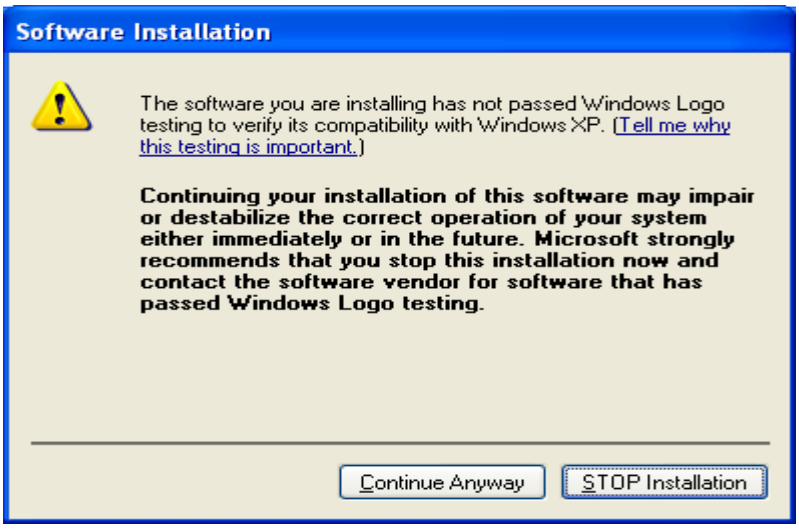


Step 7: When you click [Finish], the display interface is shown as follows.



List all the host card and select a network card to install the camera driver in real scenario. If the host is not used to connect to another network port underbody hardware and use the network port cannot install the camera driver. After assignment, select [Install eBUS Optimal Driver] item in the row Action column drop-down menu bar. If Gigabit Ethernet is not Inter825xx series chipsets, select [Install eBUS Universal Driver] (Universal type), and click the [Install] to begin the installation.

Note: If the interface is shown in the following pop-up window during the installation, click [Continue].



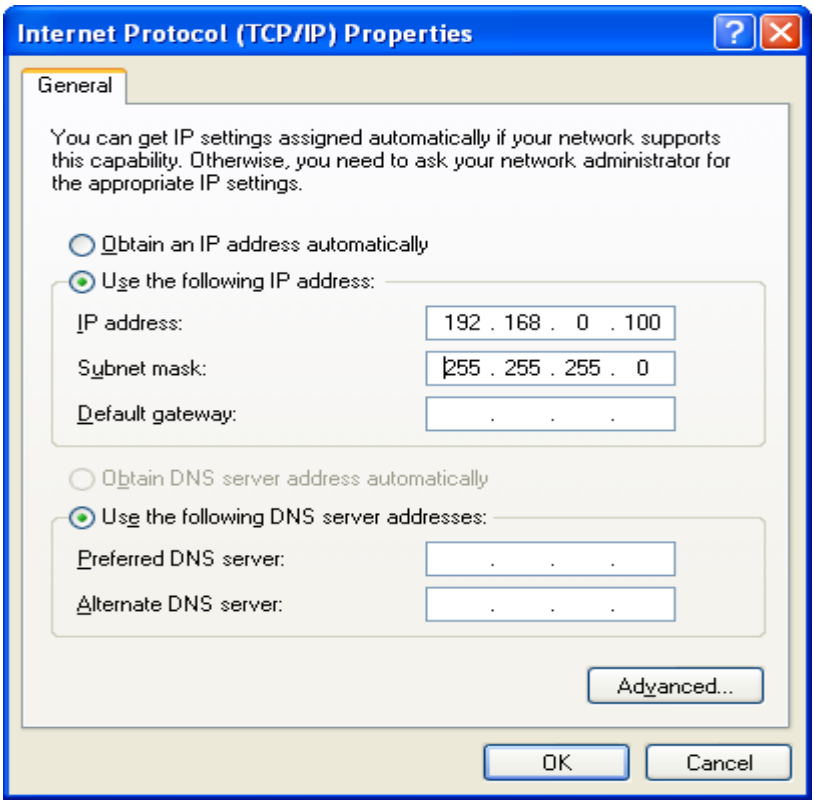
After finishing installation, click [Current Driver] in the previous window, then change the "Manufacturer Driver" to "eBUS Universal Driver]. If error occurred, restart the system and reinstall it.

3.1.2 Configuration

1） The configuration of the host's NIC IP

Windows XP operating system configuration:

Desktop->network neighborhood->Right button to property->Local connectivity->Click property->Select Internet protocol（TCP/IP），Click property, manually change IP address to 192.168.0.100 (Note: It cannot be on the same network segment with another network IP of host) and subnet mask is 255.255.255.0, as shown below.

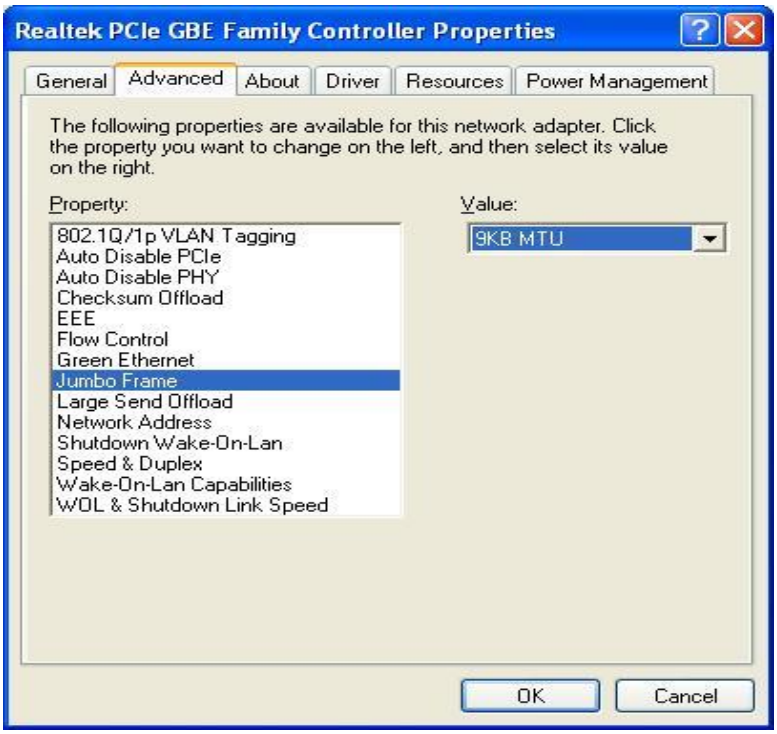


Win7 operating system configuration：

Start->Control Panel->Network and sharing Center->Click Change adapter settings->Local connection->Right button click property，select Internet deal the forth versions（TCP/IPv4）to change IP，this operation is same as the operation in XP system, please follow the above method.

2） Open the card giant frame

During the NIC driver installation processing, select the type of [Install eBUS Optimal Driver] without continue operation. If you choose the type is [Install eBUS Universal Driver], you need to open the configuration of jumbo frame. In the "Local Area Connection Properties" under the General tab, click the "Configure" button. Then click [Yes] in the pop-up prompt dialog box and click the advanced options menu, as shown below.



In the "Advanced "tab properties, find the "Jumbo Frame" and select a value of 9KB MTU.

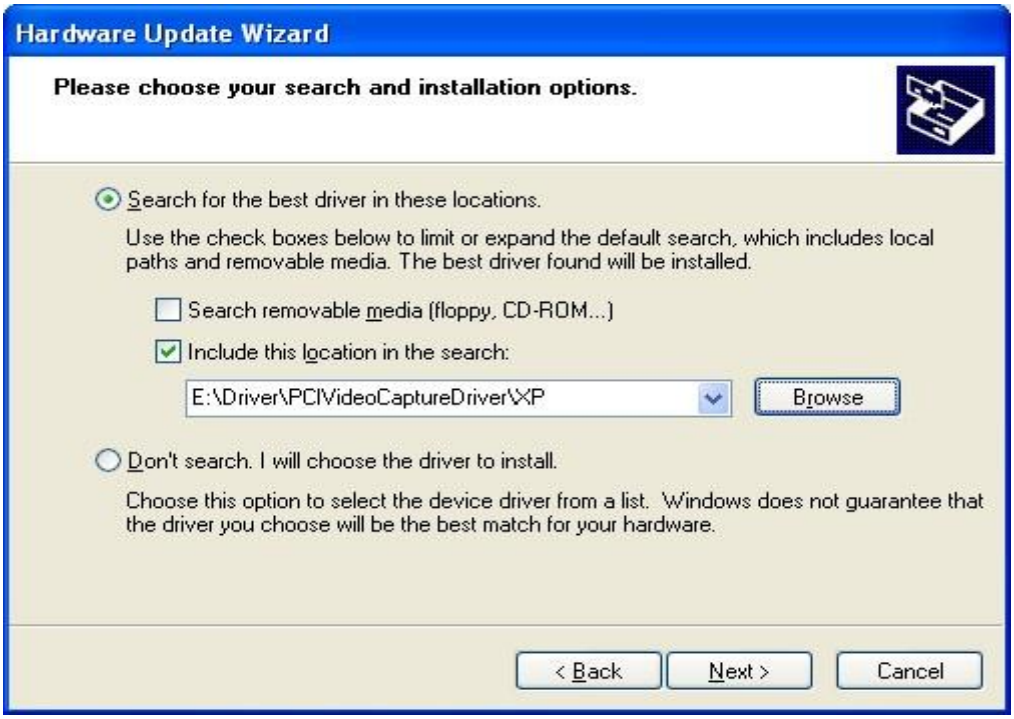
3.2 Video Capture Card Driver Installation

First make sure the host has a PCI slot, if no PCI slot, replace the host. After Installing and securing the capture card, open the host. There is a system prompt about finding new hardware in the lower right corner. And then click "multimedia video controller" and "Found New Hardware Wizard" window will appear. Specific installation steps are as follows:

1） In the pop-up [Found New Hardware Wizard] window, select [Install from a list or specific location (Advanced)], click "Next" to continue the installation.



2） Select the [Include this location in the search] option, click Browse to manually select the directory storing the device driver:[Driver\PCIVideoCaptureDriver] folder, click OK, and then automatically return to the earlier window, single click "Next" to continue(Note: Location of driver).



3） During the installation process, if there is a [required documents] window, click the Browse button in the installation folder [Driver\PCIVideoCaptureDriver], select the desired file MVBY.sys, and click OK. Automatically returns to the previous one [the required documents] window, click OK to continue the installation.

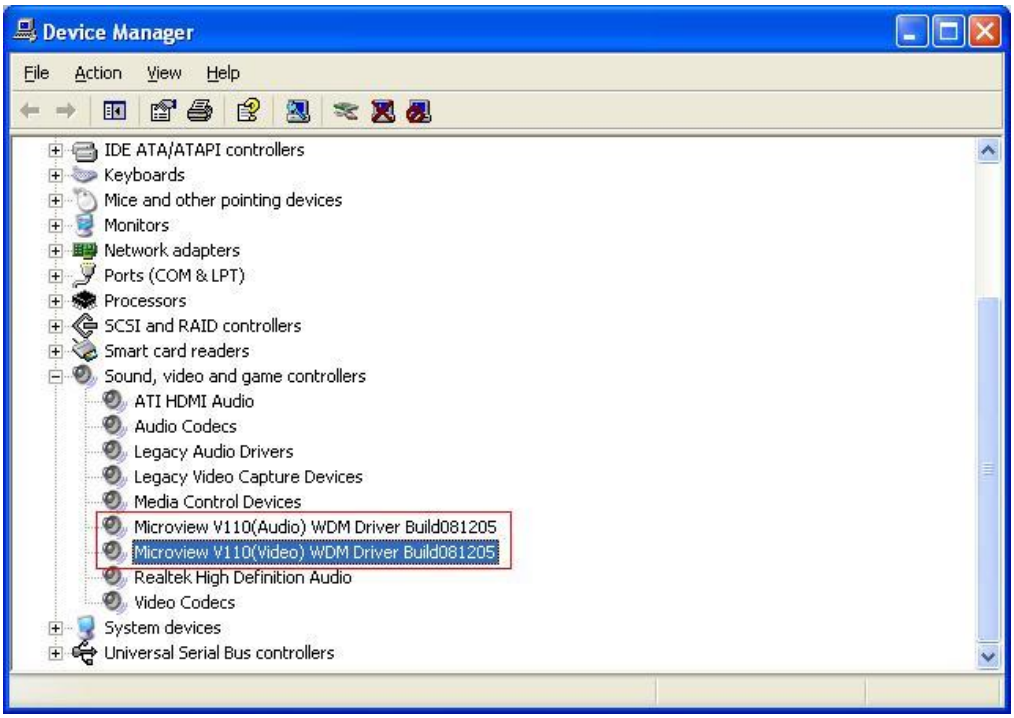
4） Click the "Finish" button to complete the driver installation, as shown below.



5） Follow these steps to check whether the device is successfully installed.

Step 1: Select the desktop [My Computer], right-click and select "Manage".

Step 2: In the pop-up "Computer Management" screen, click "Device Manager" and click to expand [Sound, video and game controllers]. If install properly, there will be two devices. [Microview V110 (Audio) WDM Driver Build081205] and [Microview V110 (Video) WDM Driver Build081205], as shown in the following figure.



If you install the device Microview V110 (Audio) WDM Driver Build081205 and occur some prompt, such as: a yellow "!" "?", follow the above steps to re-install or choose to restart the system.

3.3 Under Vehicle Inspection System

3.3.1 System Survey

Under vehicle inspection system has achieved the video view and save, automatic vehicle license plate recognition and image capture function when the vehicle passing through. The system consists of six main functions: vehicle image display area, Real-time video display area, the license plate number information display area, vehicle information list, image manipulation functional areas and functional operation area.

1） Vehicle image display area: Real-time display of vehicles at the detected image, historical images, and bottom of the vehicle after processing images.

2） Real-time video display area: Real-time display the monitoring video and capturing vehicle plate video, they were saved by digital video surveillance DVR.

3） License plate number information display area: Displays the detected vehicle license plate capture photos with automatic identification of the results, click [Modify] button can modify the number if error occurred.

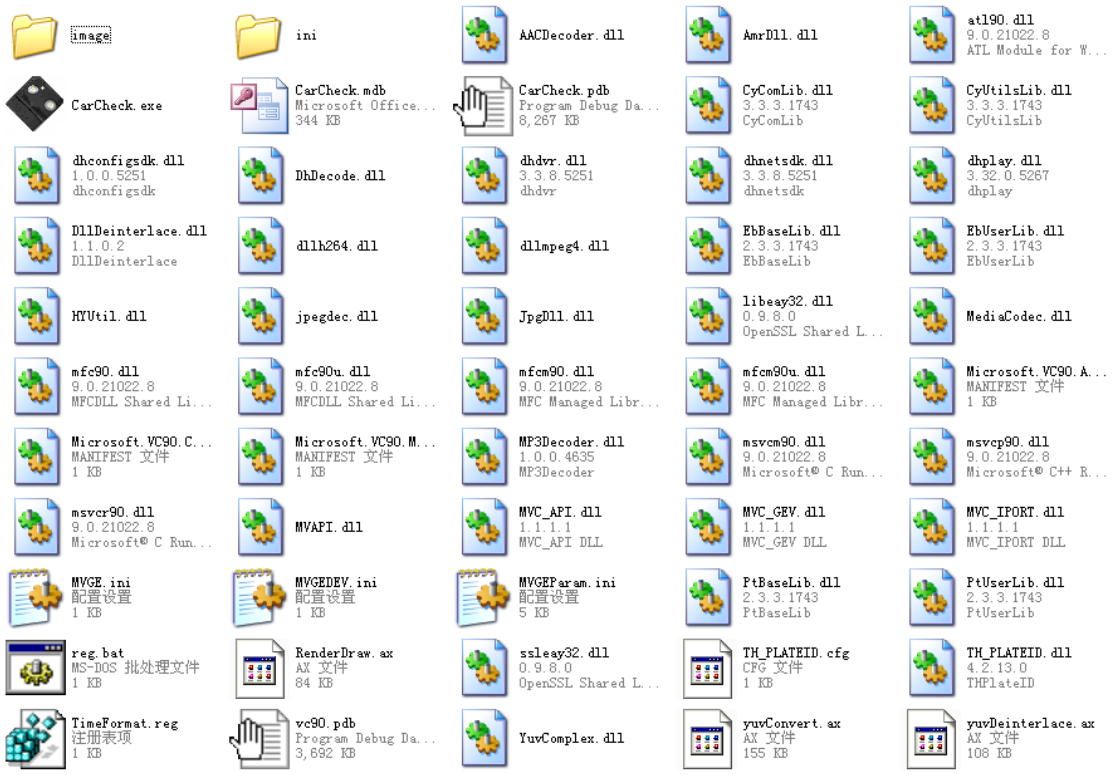
4） Vehicle information list: Checking vehicle information all day, including license plate number, check the time and vehicle inspection results.

5） Image manipulation functional areas: Complete image zoom; brighten, darken, edge enhancement and super-enhanced operation.

6） Functional operating areas: Set parameter of license plate recognition, DVR parameters, playback video recording, equipment registry, system language, real-time curve and historical data query functions.

3.3.2 Installation of System

Copy under vehicle inspection system install files to the appropriate directory, you can complete the system installation. System file is shown below.



Note: After copying install files to the appropriate directory, run [reg.bat] to finish system registration. Otherwise, software may not work correctly.

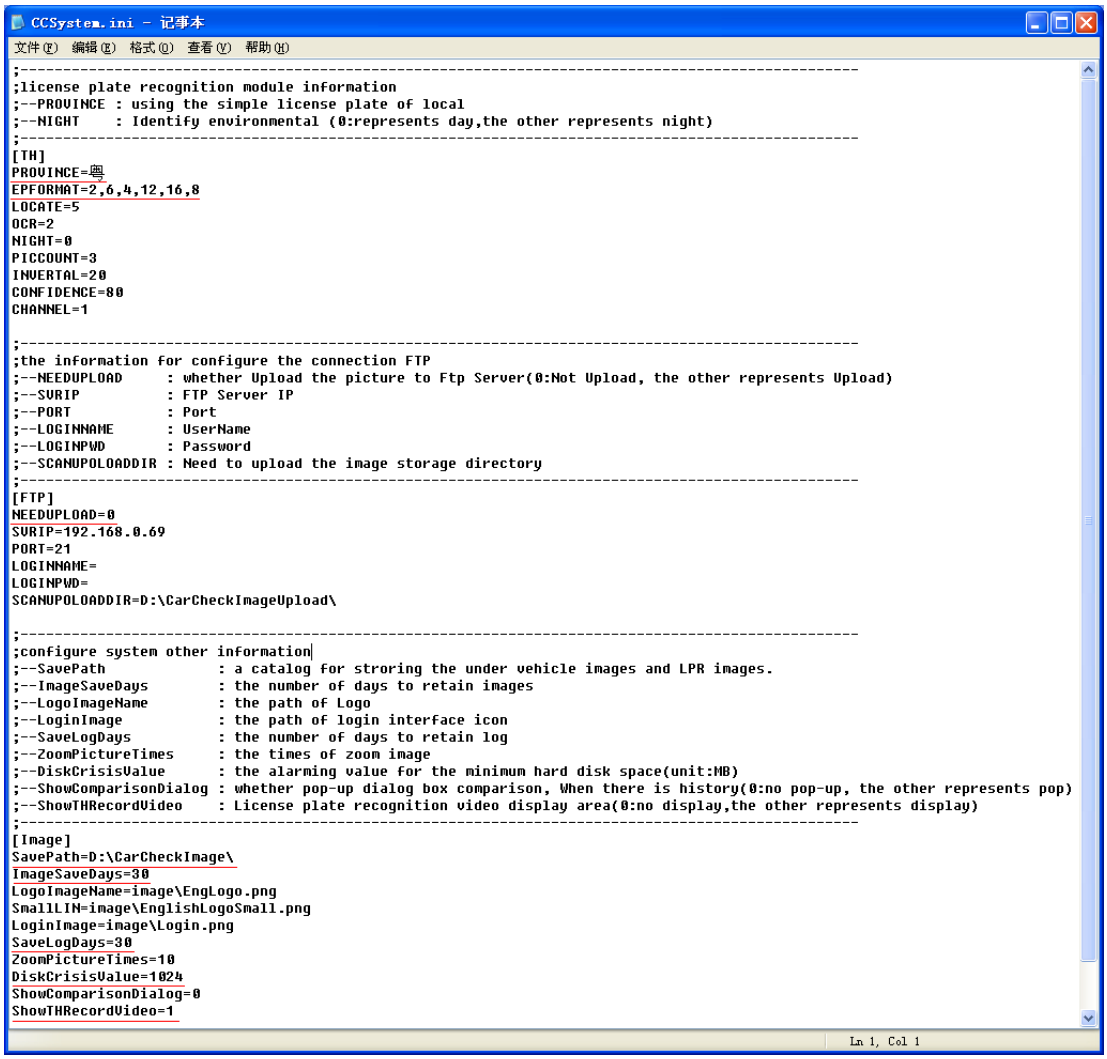
3.3.3 "CCSystem" Files Configuration

"CCSystem", the configuration file. Follow the steps below to finish configuration.

Step1: Open the software installation directory to find "CCSystem.ini" file (For example：[C:\CCD\CarCheck\ini\]), select"CCSystem.ini" file.

Step 2: Double click "CCSystem" file, in the "Notepad" program editing interface to

add different functions if need be. Underline text is corresponding content in figure below.



1) [PROVINCE=粤]: The“粤”is shorthand for province, this configuration is in the “LPR Properties Settings”.

2) [EPFORMAT=2, 4]: The“2, 4” stand for types of special license plate. This configuration is in the“LPR Properties Settings”.

3) [NEEDUPLOAD=0]: Indicate whether image upload feature is start. If you start this function, you need to set FTP server’s IP address and other information and ensure that FTP server connects to host. Specific meaning can be seen in the configuration files note.

4) [SavePath=D:\ CarCheckImage]: The [D:\CarCheckImage] is a catalog for under vehicle images and LPR images.

5) [SaveLogDays=30]: The"30"is the number of days to keep log.

6) [ImageSaveDays=3]: The"30"is the number of days to retain images.

7) [DiskCrisisValue]: Alarming value for the minimum hard disk space.

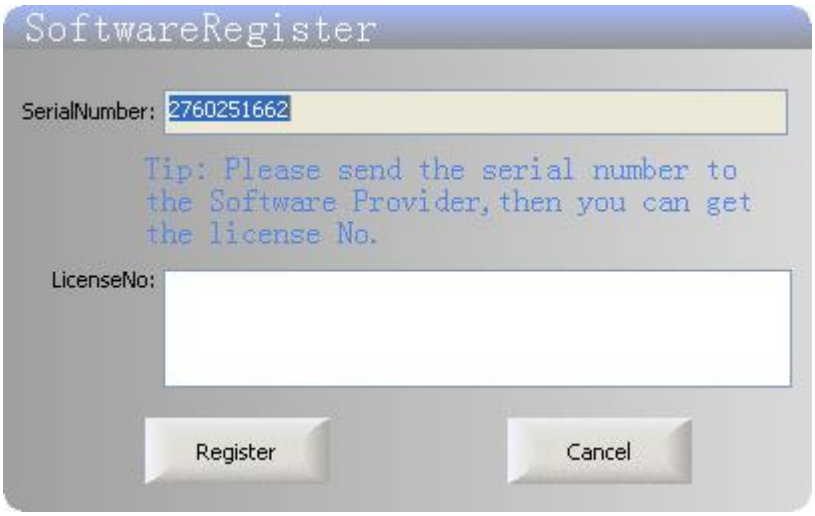
8) [ShowComparisonDialog=0]: When there is history, whether pop-up dialog box to compare (0: do not pop-up, the other represent pop).

Note: Save the file after setting.

3.3.4 Software Registration

Before using under vehicle inspection system, you must activate it.

Registration method: click system installation directory [CarCheck.exe] file. Interface is shown below.



As shown in the interface, users send software provider [serial number] and can obtain the corresponding [License] to complete the software's registration.

Each key has service time. User can freely use under vehicle inspection system during service time. When service time is over, you can buy another registration key to activate the system.

Note： Serial number is different when under vehicle system runs in another computer. It means you need to pay for another key.

Chapter 4 Software Instruction

4.1 Starting Software

Under the "under vehicle inspection system installation catalog", click [CarCheck.exe] file to start the software and pop-up interface, as shown below. (If remaining service time is more than 30 days, interface is shown as Figure 1. If remaining service time is less than 30 days, interface is shown as Figure 2).



Figure 1



Figure 2

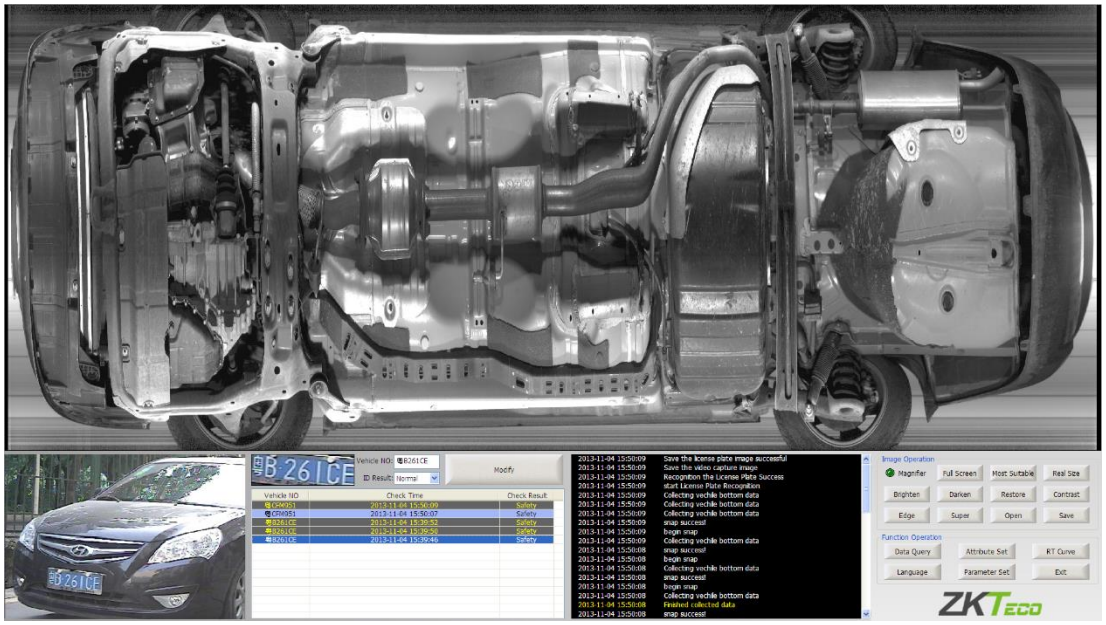
Like the figure above, enter the correct [User Name] and [Password], Click the [Login] button to enter the system. If the times you input user name or password wrong more than three, it will automatically exit the vehicle inspection system.

As described in figure 2 above, the user can click [Tip] information links to pop-up [software registration] interface and activate system.

4.2 Main Interface

After logging in successfully, the system will enter the main interface. And interface

is shown below.



There are six display areas in the main interface, including undercarriage image display area, Real-time vehicle video display area, the license plate number information display area, vehicle information list, image manipulation functional area and functional operation area. Users can view or operate different function in different area.

1) Undercarriage image display area: Real-time display undercarriage image of vehicles detected, historical images and undercarriage image with treatment.

2) Real-time video display area: Real-time display the monitoring video, capturing vehicle plate video, and then they were saved by digital video surveillance DVR. (Customized is based on the actual usage scenarios.).

3) License plate number information display area: Displaying license plate photo of vehicle detected and automatic identification result. Click [Modify] button to modify the number in automatic identification result if error occurred.

4) Vehicle information list: Checking vehicle detected information in that day, including license plate number, the checking time and vehicle inspection results.

5) Real-time log information list: Real-time display log information during the process running. It is convenient for operator and maintenance man to check system state.

6) Image operation functional areas: Make the image to zoom, brighten, darken, edge enhancement, super-enhanced, contrast enhancement, magnifying glass, real size, most suitable and open/save.

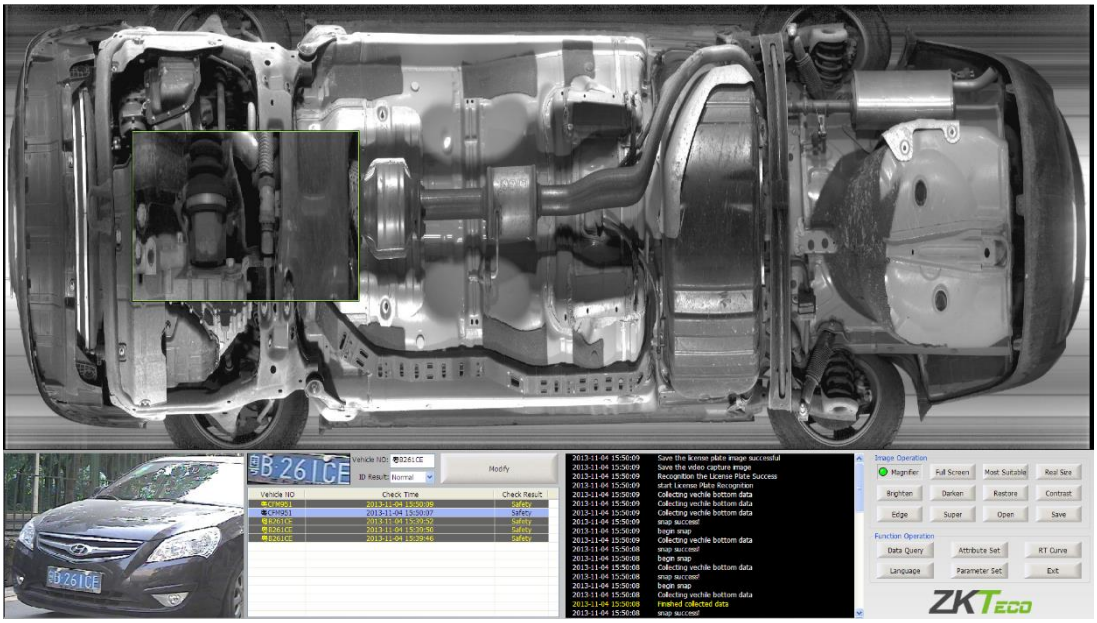
7) Functional operating areas: Setting attributes of license plate recognition, parameters of line CCD camera, DVR video attributes, video playback and registry equipment, system language, real-time curve and historical data query functions.

4.3 Image Operation

There are buttons to operate the undercarriage image, including Magnifying Glass function, zoom in, zoom out, the most suitable, true size, brighten, darken, restoration, edge enhancement, super enhanced features and open/save functions.

4.3.1 Magnifying Glass

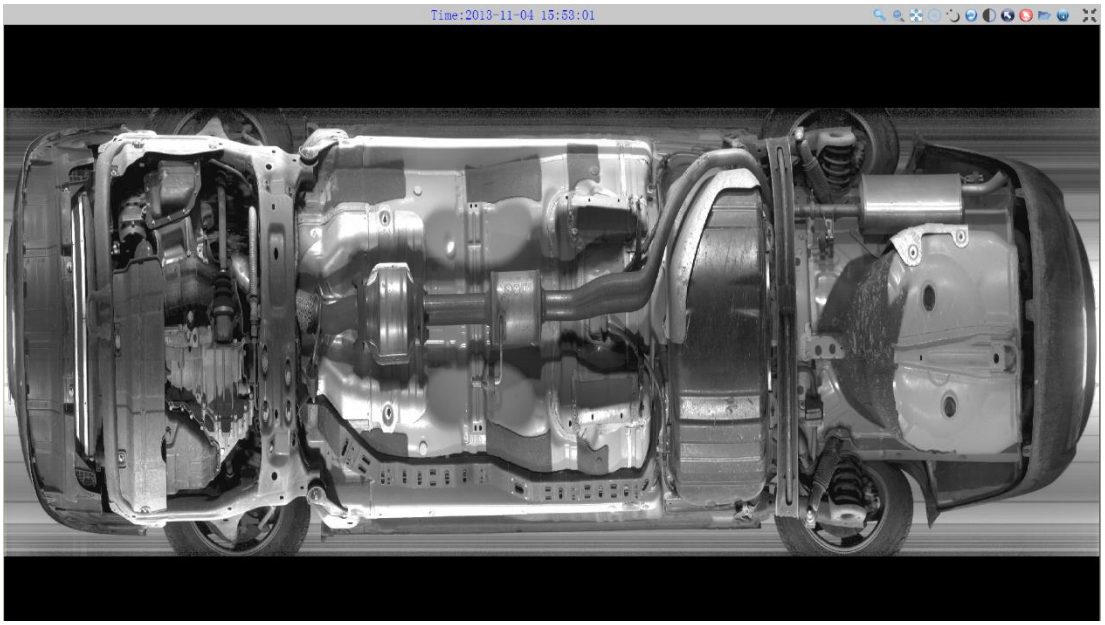
Click [magnifying glass] button and press the left mouse button to create a green box where you want to zoom in in the image. Click the right mouse button or use the left mouse button to click anywhere except the green box in the image can quit magnifying glass function.



4.3.2 Image Full Screen

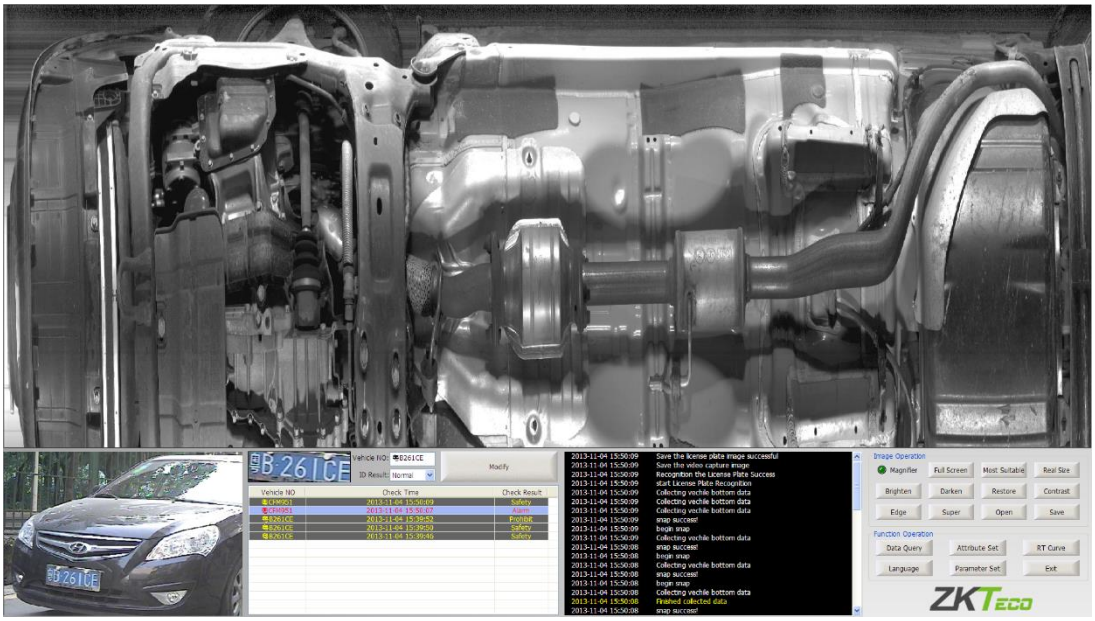
Double-click image or click [Full Screen] button, you can switch to full screen mode. In the full screen mode, you still can operate image. And function buttons move to

top right corner of screen.



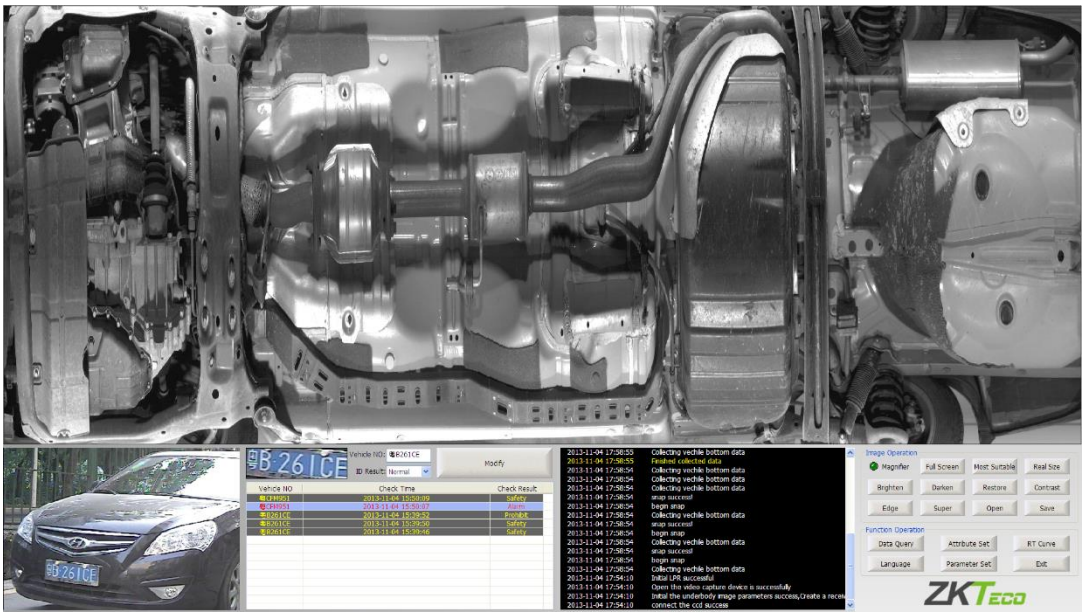
4.3.3 Image Dragging

Keep pressing the left mouse button and dragging can move the image.



4.3.4 Zoom In

In the undercarriage image, you can use the middle mouse button to zoom in and zoom out the image. In the same time, image dragging function is enable.

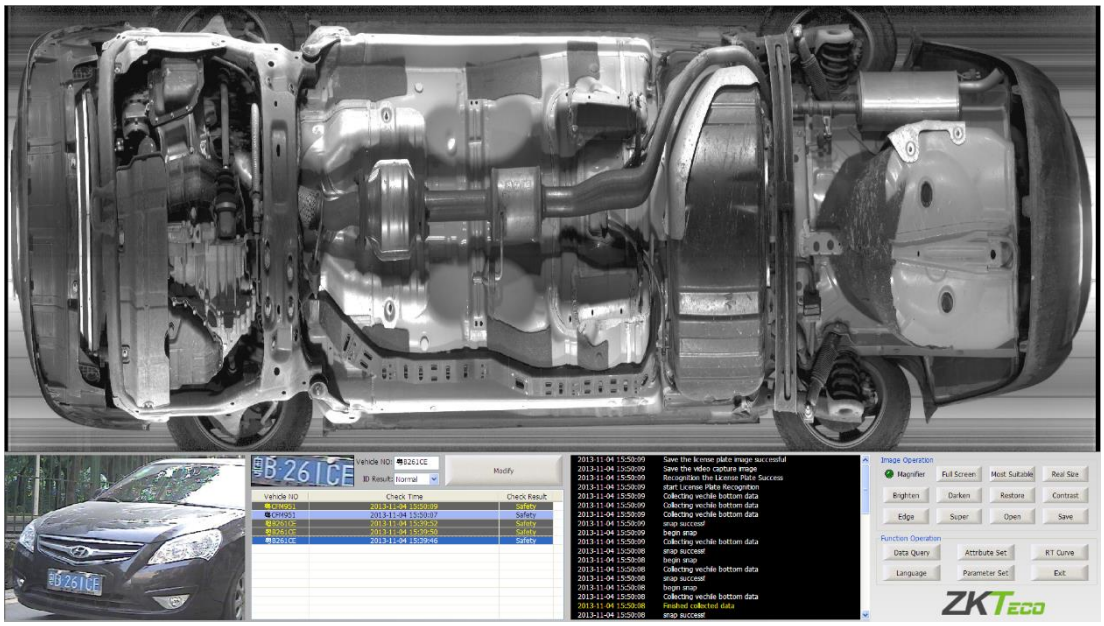


4.3.5 Zoom Out

The default image is the most suitable mode and can zoom out at the beginning. Only after the zoom in operation, Image can zoom out.

4.3.6 Most Suitable

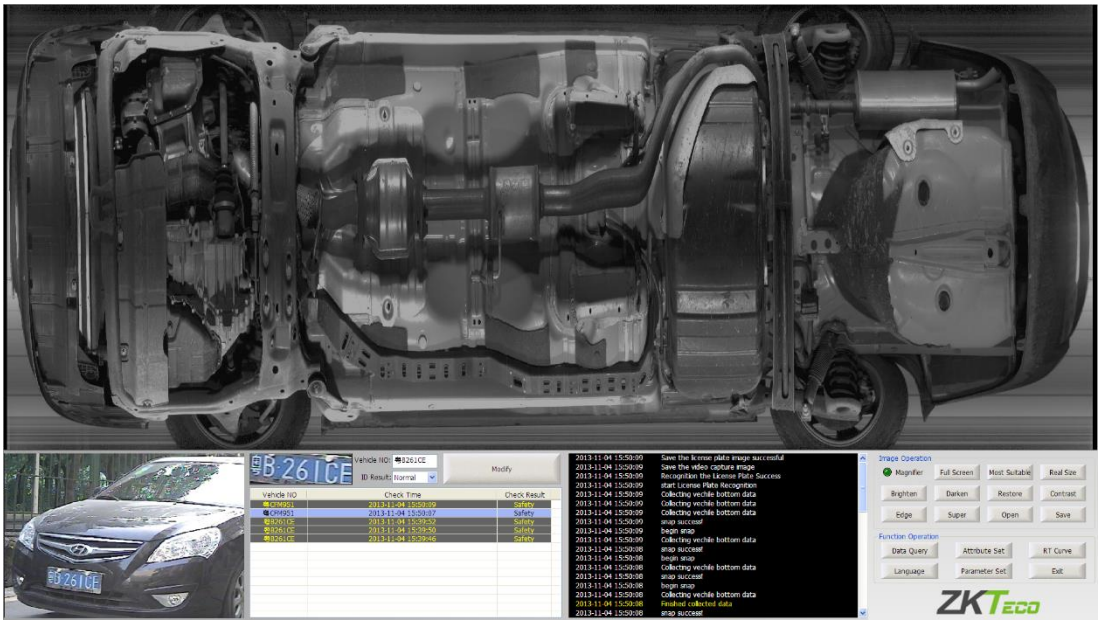
Click [Most suitable] button, the image will be centered for the ratio of the image display area.



4.3.7 Real Size

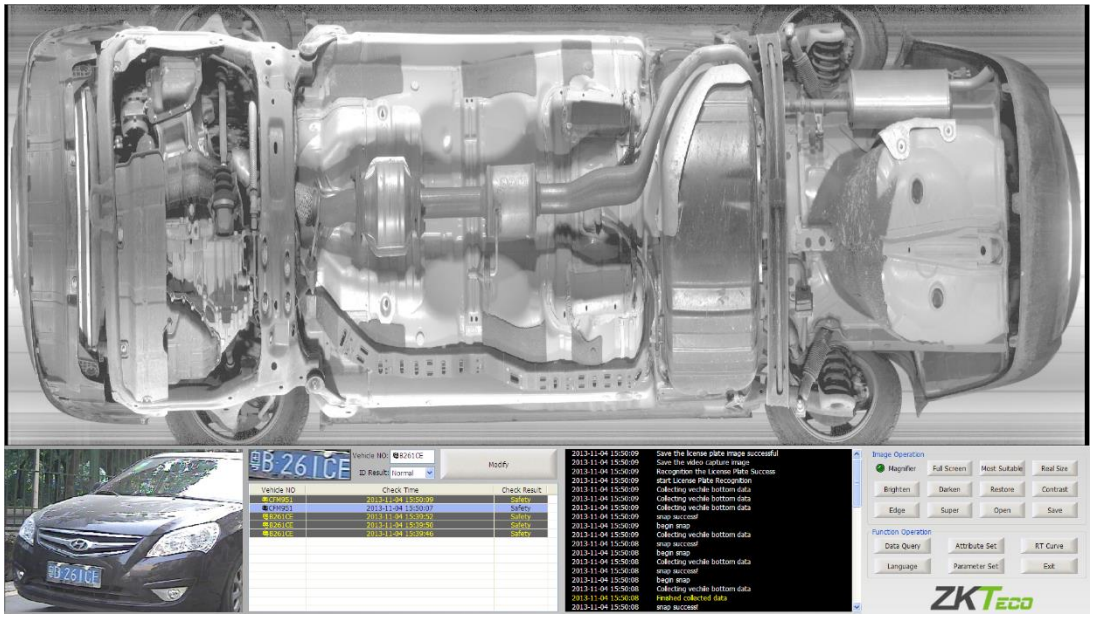
Click the [Real Size] button, the image will be displayed with the actual length and

width.



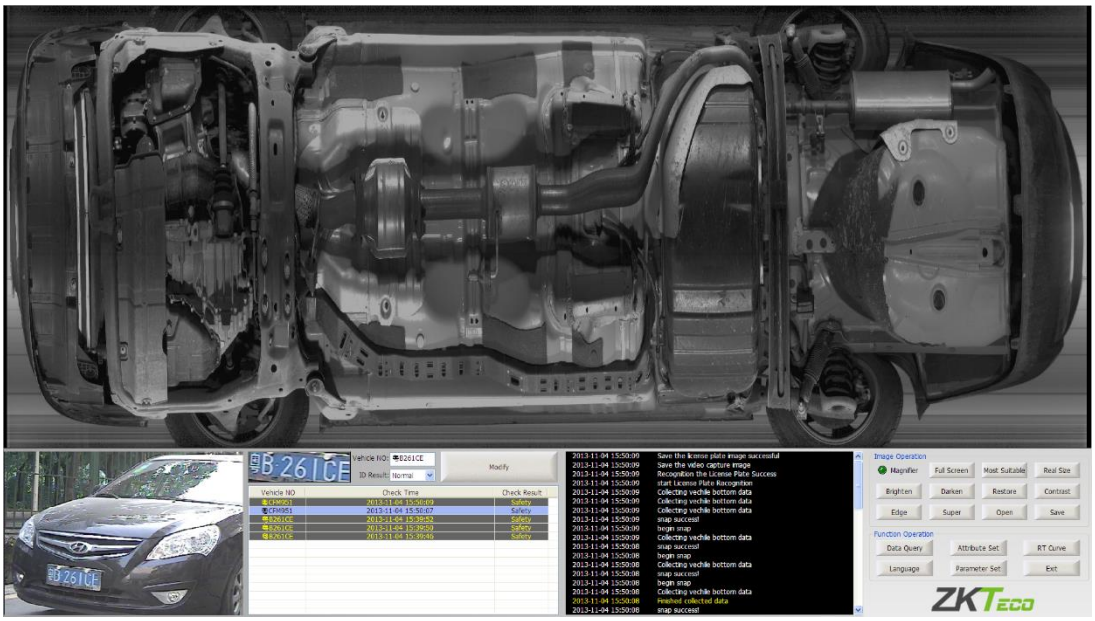
4.3.8 Brighten

Click the [Brighten] button, the image will become brighter, as shown below.



4.3.9 Darken

Click the [Darken] button, the image will become darker, as shown below.



4.3.10 Restore

Click the [Restore] button, the image will restore the default brightness state.

Screen brightness cannot see the brightness of the image before the operation.

4.3.11 Contrast Enhancement

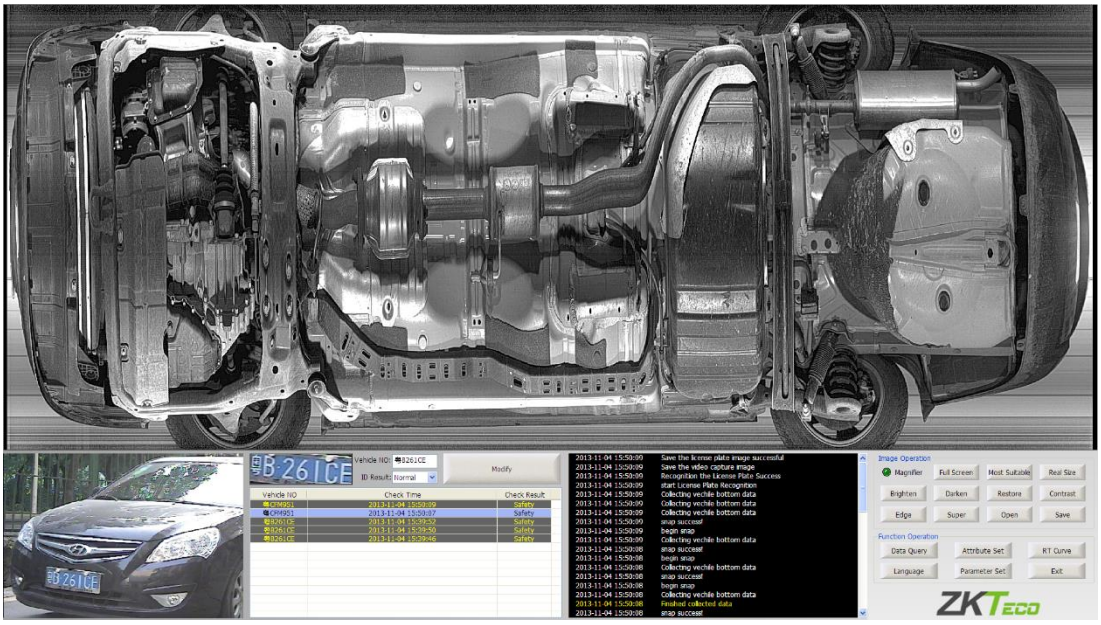
Single click [Contrast] button, enhancing image brightness contrast of each part, the interface shown in the following figure.



4.3.12 Edge Enhancement

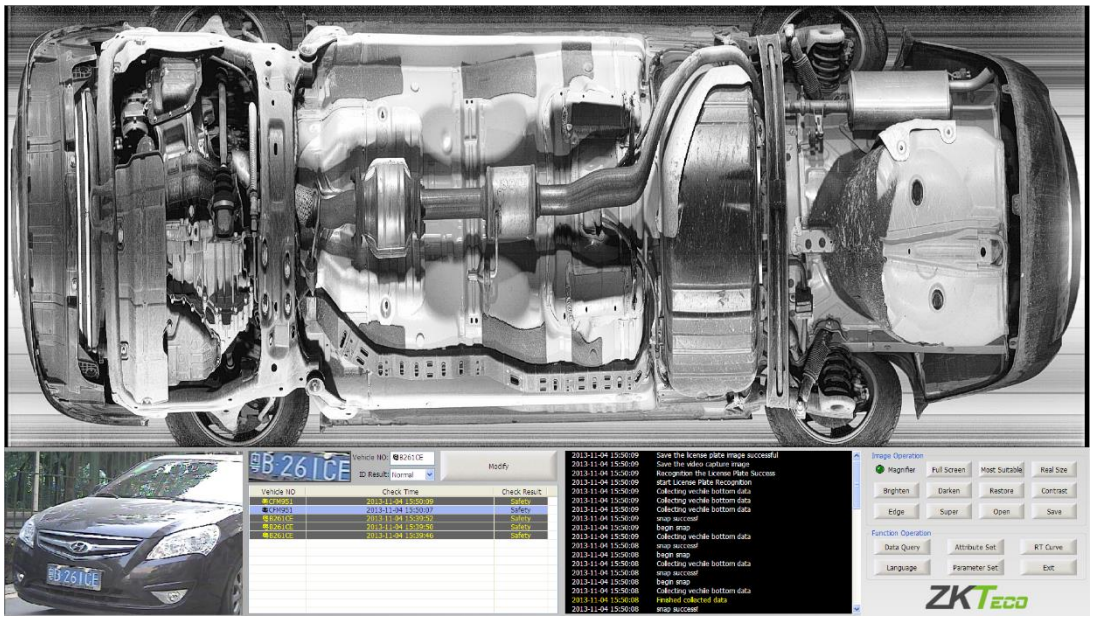
Click [Edge] button underbody parts in the image edge contour is highlighted,

more conducive to distinguish between different parts of cars.



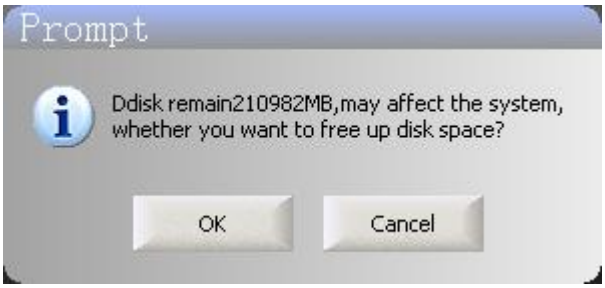
4.3.13 Super Enhancement

Single click [Super] button, enhancing image edge, changing the image brightness and darkness.

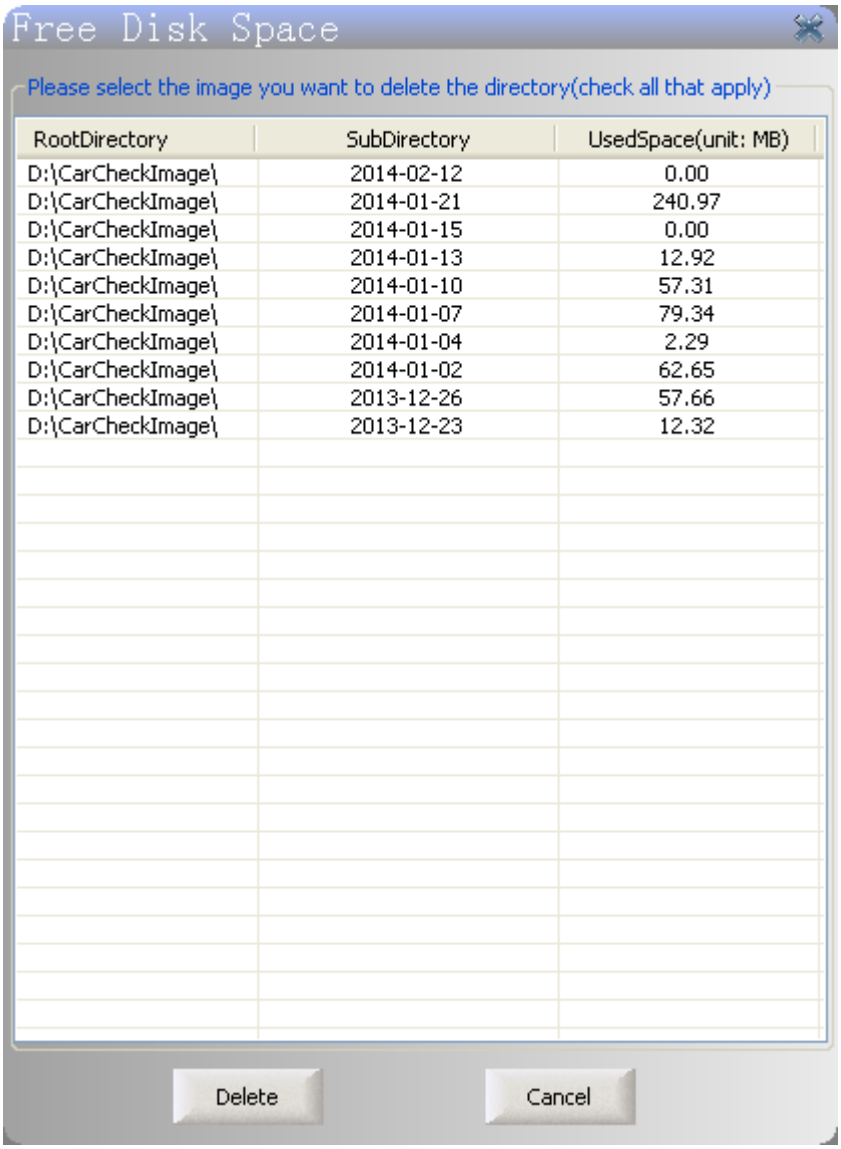


4.3.14 Image Delete Function

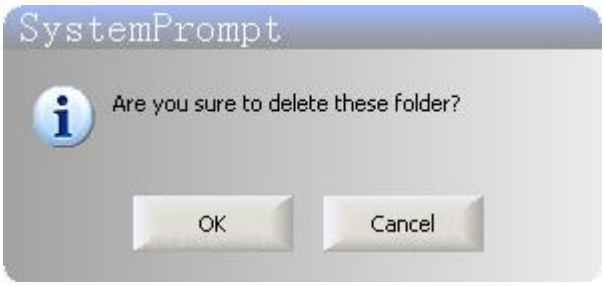
After saving the image, the system will automatic-check the disk space every time while the space of disk is less than the set threshold, the dialog box will pop up as shown below.



If you select [OK], the following interface will pop up.

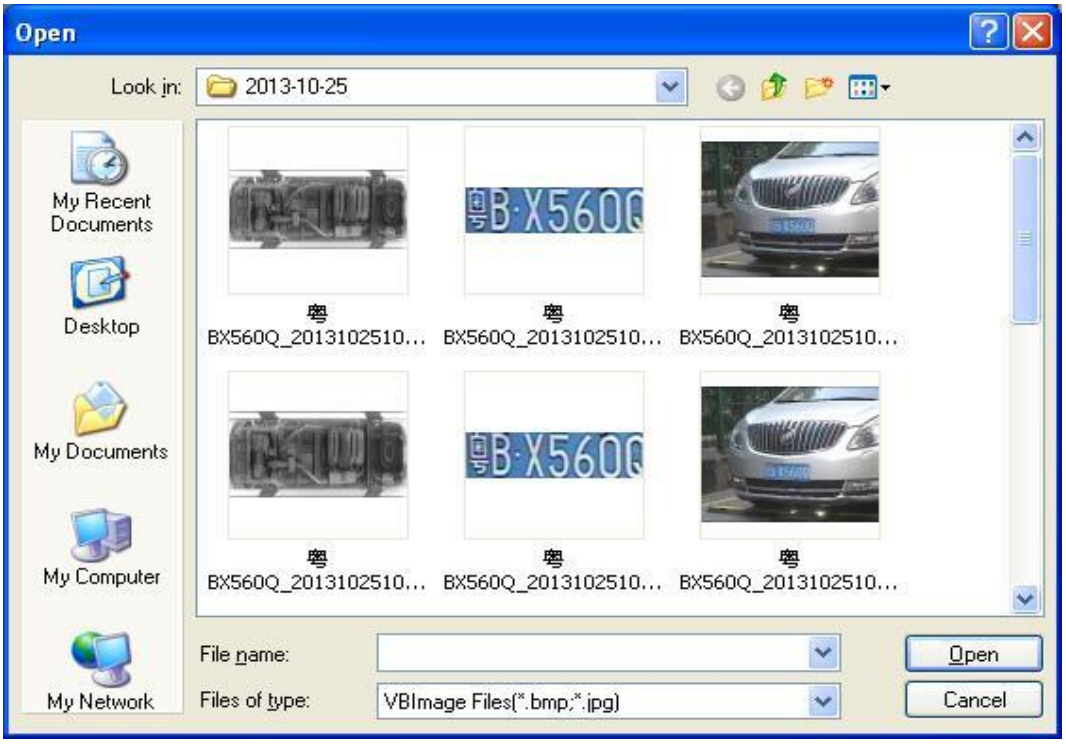


In this interface, you can double-click an image catalog that is no longer needed, then click [Delete] key.



4.3.15 Open

Click the [Open] button to open the window shown below, the user can select the saved images for display, and clicking the other buttons on the operating area to operate the images.



4.3.16 Save

The image (brighten, darken, edge enhancement, super-enhanced) processing, click the [Save] button, the processed image will overwrite the previous picture.

4.4 Real-time Video

4.4.1 Real-time Monitoring Video Display

Start the software, the real-time monitoring display area will show surveillance

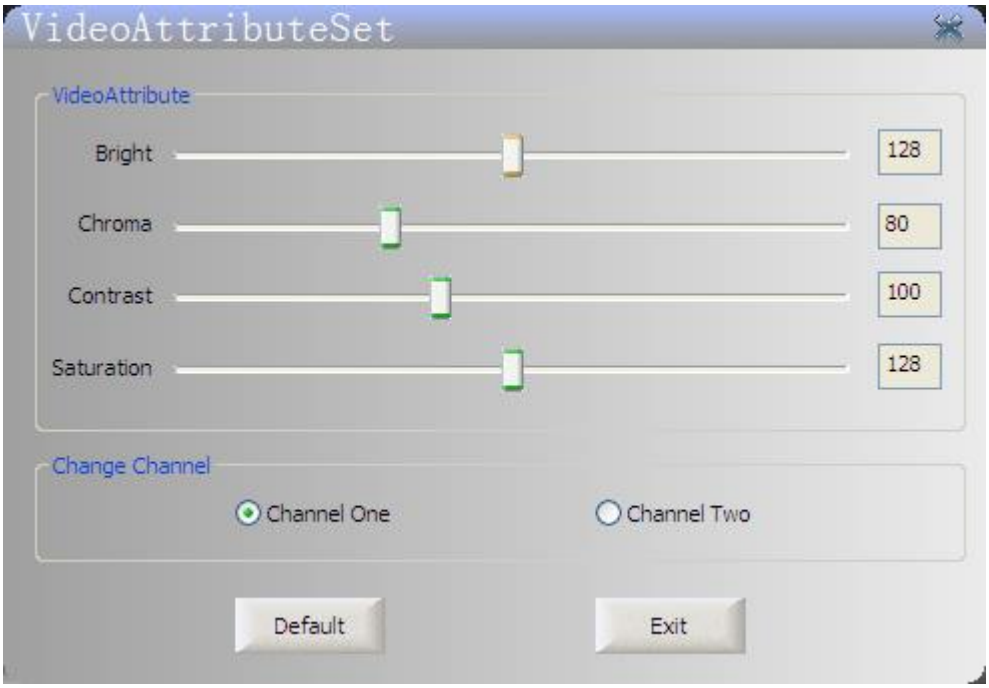
video .Interface is shown below.



4.4.2 Real-time Capturing Video Attributes Setting

In the case of video capture card and camera connect normally. If you need to set the video properties, double-clicking "real-time video display area," according to the pop-up interface (as shown below), set the video properties. In the setting process, the corresponding property in real time effect of the video display area, the user can watch "real-time capture video display area" to view the effect of settings.

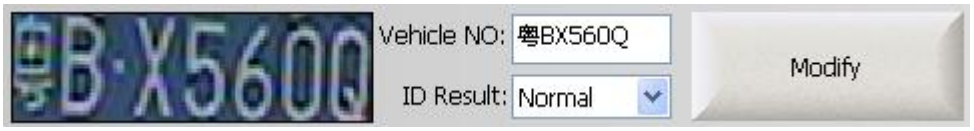
The PCI video capture card is the way of two into one out, for two-way video signal input, only choose one way among them to be output. Therefore, for the "Chanel switching" feature, you only need to select "Channel one" button under normal circumstances; If you select "Channel one", the "Video Display Area" is not properly display the video (Display the blue background), then you need to switch channels.



Because the license plate recognition rate greatly influenced by the environment, it is necessary to set the video properties according to the actual environment when using the system. When you use the system in daylight or light environments, you usually just click the "default" button to set the video properties. In the night or low light environments, the video attributes need to be adjusted accordingly to achieve the best rate of license plate recognition. Normally, you just need to adjust the two parameters, "Brightness" and "contrast", and adjust the two values to half of the "default" value. The specific parameters are based on the parameters of the license plate number which can be clearly distinguished by the human eye from display.

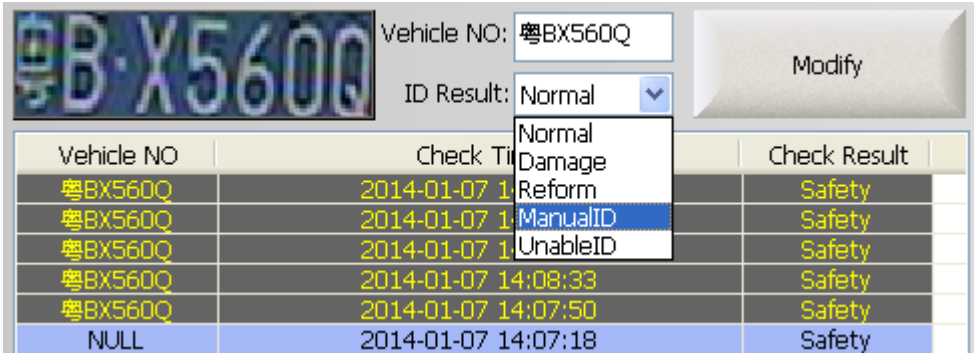
4.5 The results display and modify the license plate recognition

This area real-time display license plate recognition license plate image, license plate number and license plate recognition interface, as shown below.



Users can observe the license plate image, license plate number or other information, if the license plate recognition results are wrong, click the [Modify] button on the license plate number recognition result to modify.

Users can click the "day vehicle inspection information list" in a column information to modify the license plate number recognition result. If the license plate number has been modified, then the corresponding records in the database with the name also will modify.

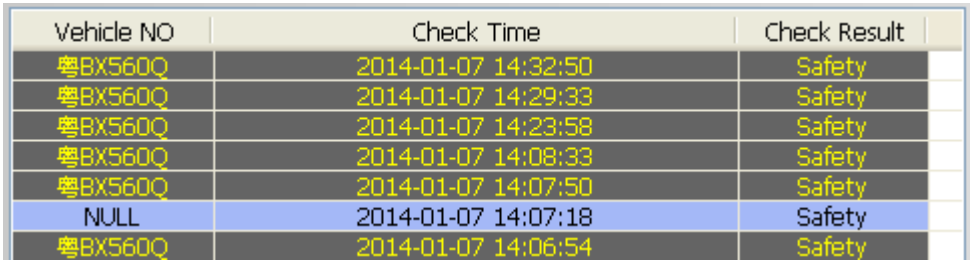


Real-time inspection of the vehicle, if the vehicle license plate number recognition in the database already exists, the following interface will pop up on the vehicle identification information for comparison. If an abnormal situation occurs, the "comparison result" at the bottom of the interface, the green light of the corresponding item in the information column will be changed into a red light to alarm.



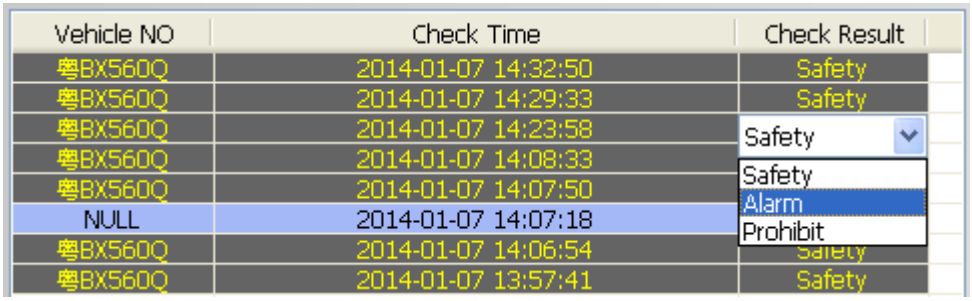
4.6 Information List of Vehicle Detected

After system starting up, system list the information of vehicles detected, as shown in the figure below.



Vehicle NO	Check Time	Check Result
粤BX560Q	2014-01-07 14:32:50	Safety
粤BX560Q	2014-01-07 14:29:33	Safety
粤BX560Q	2014-01-07 14:23:58	Safety
粤BX560Q	2014-01-07 14:08:33	Safety
粤BX560Q	2014-01-07 14:07:50	Safety
NULL	2014-01-07 14:07:18	Safety
粤BX560Q	2014-01-07 14:06:54	Safety

When inspect the vehicle in real-time and found abnormal stuff under the vehicle, you can click the column bottom of the vehicle inspection results and select the corresponding result type in drop-down box, then make changes on the testing results, the corresponding modification results will be saved in the database. If the car bottom inspection results are unsafe, the row information will be displayed in red and serve as a warning, as shown below.



4.7 Real-time Log Information List

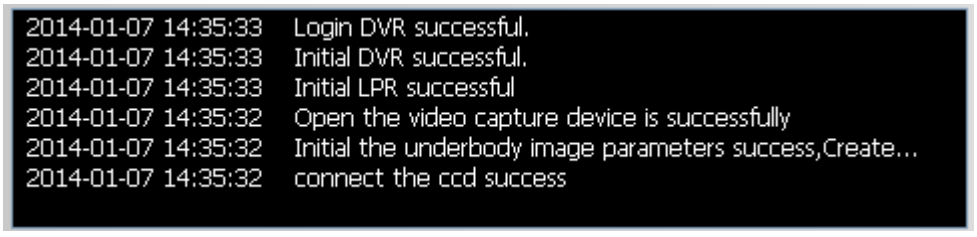
In order to make the system user and maintenance personnel to understand the operational status in real-time, we add this real-time information display list. During system operation, it will generate some information, such as image acquisition information, save the image information, warning or error messages and etc. The interface is shown below.



1) Yellow font information indicates a warning message. If such information is generated during the operation of the system, it may not start certain devices or functional modules.

2) Red font information indicates an error message. During the system running, there is such a message to be generated, it represents the system has serious problems that will affect the operation of the system.

3) Black font information indicates a normal log information, the user can check the system status in real-time.



4.8 Function Operation

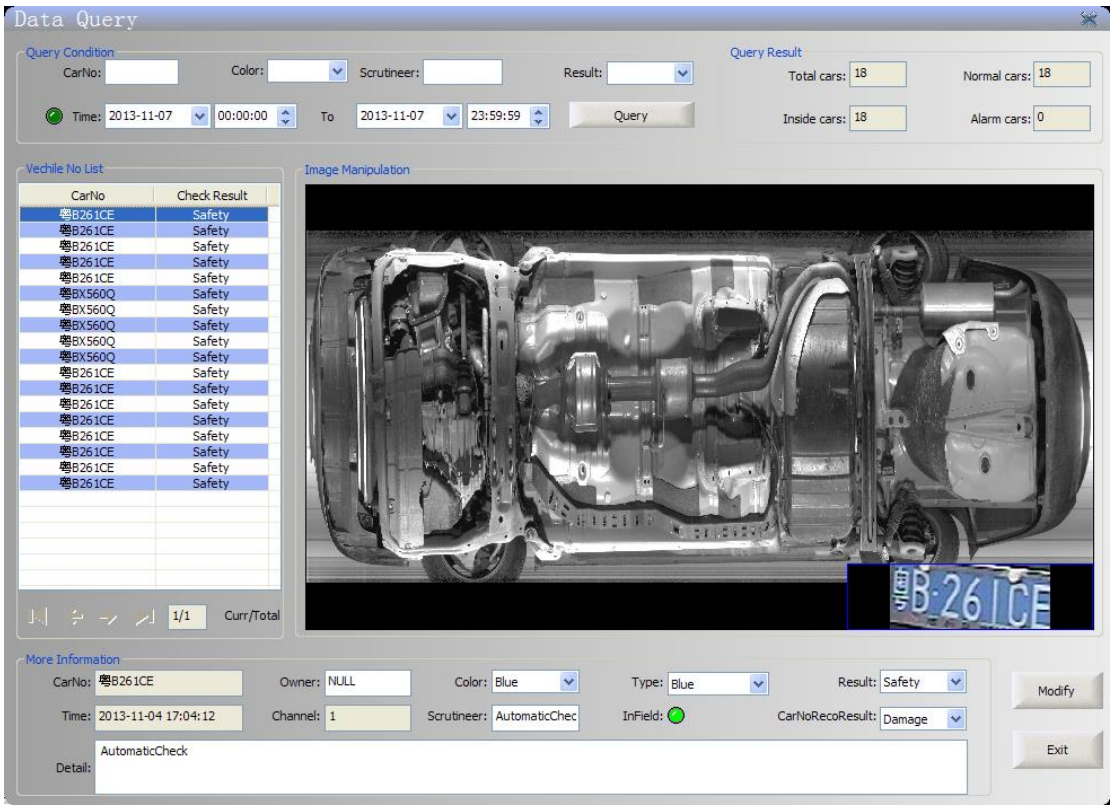
The functional areas are mainly related to system parameter setting, history queries and other operations.

4.8.1 Date Query

By clicking [Data Query] button, you can query the vehicle inspection information in the interface shown below. The query conditions are supported fuzzy queries. If you don't select the "time" condition, it will query the vehicles of all the time period, the query results will show in the "Results" and "Vehicle list", and show the first image data in the right images column. If the data which meet the conditions are more than 50, then it will display with pages. The user can view different data by clicking the navigation bar under the "Vehicle List".

Users can click on the any row under the "Vehicle List" to see the license plate numbers and modify corresponding details.

The user can double-click the car image to display the full screen of the car image, and then double-click the "Esc" button to exit the full screen display.



4.8.2 LPR Attribute Setting

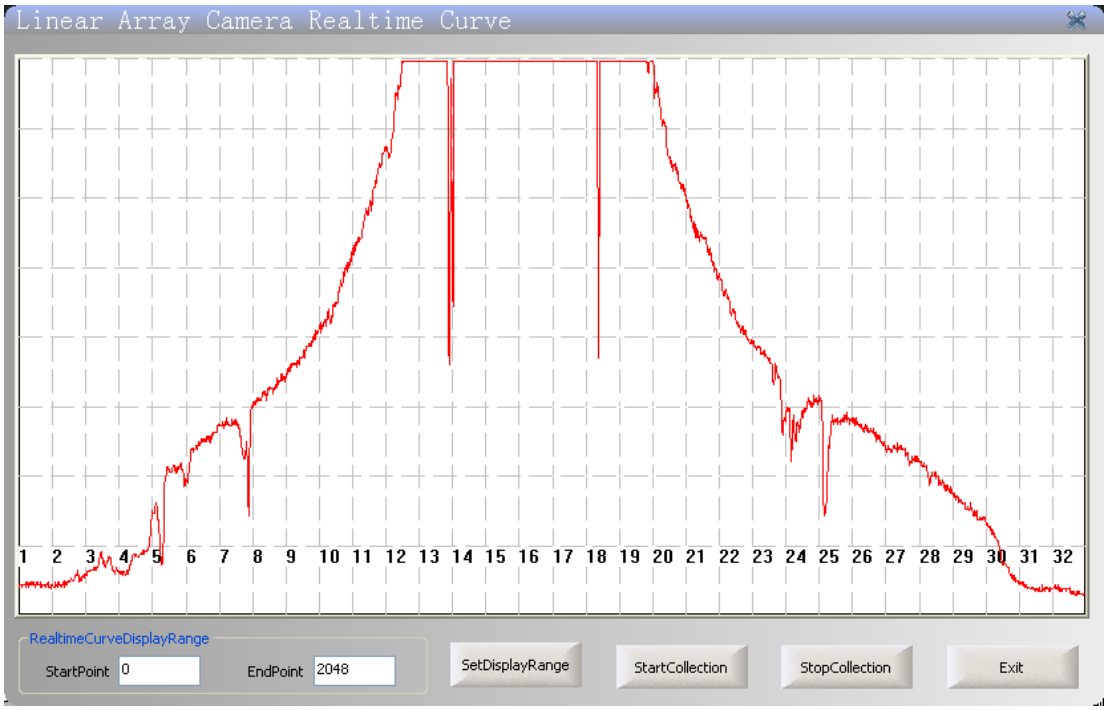
Clicking "Attribute Set" button, pop-up interface shown below and set the properties for the license plate recognition. To prevent misoperation during user settings, the gray text box has been set up by the system deployment personnel when the software is installed. The user can according to the specific requirements,

set the “Default State”, “Picture count”, “Interval Time” and “Special Vehicle Type”. After modification, click the “Modify” button to complete the property settings, to make new configurations take effect, you must restart the software.



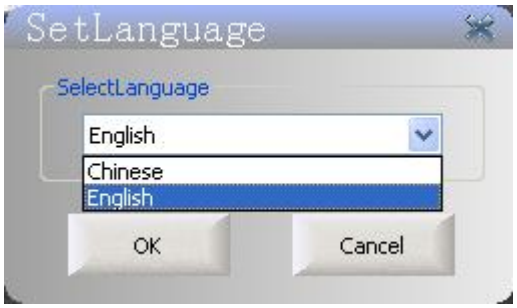
4.8.3 Real-time Curve

By clicking “RT Curve” button pops up the following interface, you can view real-time acquisition curve, when the under vehicle scanner Gigabit Ethernet cameras at work.



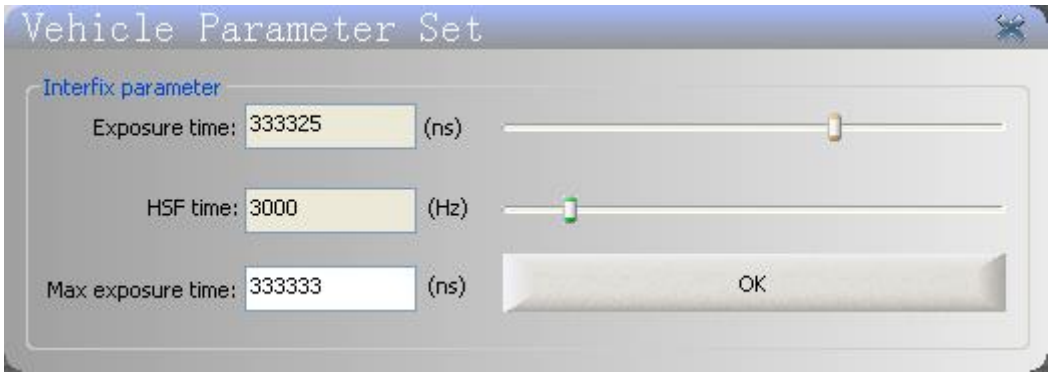
4.8.4 Language

Click "Language" button to pop up window as shown in the figure below, the user can switch the system language and need to restart the software to take effect.



4.8.5 Scanner Camera Parameter Setting

Click the "Parameter Set" button and pop-up interface as shown below, you can set parameters of scanner Gigabit Ethernet camera.



4.8.6 Exit

Click the “Exit” button and pop-up window as shown below. Click the “OK” button to exit the system, click the “Cancel” button to close the window.

