# Onick LSP320 Hand-Held Laser
# Laser Velocimeter User Manual
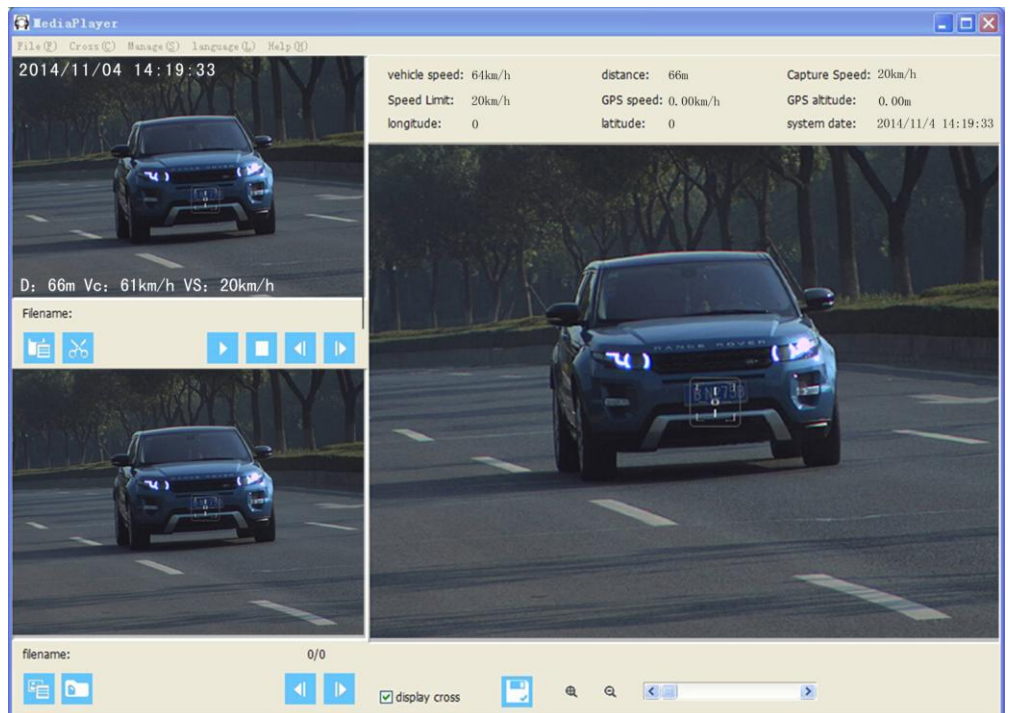
# CONTENT INDEX   ( 1$^{st}$ Edition )

## Section #1 - Introduction

Congratulations on your purchase of the Onick LSP320 handheld laser speed forensics instrument This device is a portable unibody laser speed gun camera, which is capable of accurately measuring the real-time speed of a vehicle while at the same time measuring its distance. It has the function of taking static images and video recording for vehicles out of speed limit.

. Multiple Modes: Continuous Mode, Lock Mode, Auto Mode, Video Mode, Tracking Mode, Distance Mode.
. Moveable video recording and static image capture
. Customized drivers based on Linux OS
. High Speed USB 2.0
. Built-in 20 channels GPS Receiver
. Long life Lithium Battery

## PACKAGE

When you receive the product, open the package to check if all accessories are compete and in good conditions.
Basic Configuration:
Speed Gun Camera -------------------------------------------------------------------------------------------1 x
SD Card 16GB--------------------------------------------------------------------------------------------------1 x
Battery Handle------------------------------------------------------------------------------------------------ 2 x
Battery Charger----------------------------------------------------------------------------------------------- 1 x
Charging Dock -------------------------------------------------------------------------------------------------1 x
Tripod Transition Socket ----------------------------------------------------------------------------------1 x
USB Connector Cable ---------------------------------------------------------------------------------------1 x
UART Connector Cable --------------------------------------------------------------------------------------1 x
Suitcase --------------------------------------------------------------------------------------------------------1 x
User Manual----------------------------------------------------------------------------------------------------1 x
Quality Guarantee Card --------------------------------------------------------------------------------------1 x

## Important Safety and Product Information

### Warnings:

Use of the product against the sun is strictly forbidden
Use of the product against the sun will be detrimental to your eyes.
**Improper use of batteries will cause the batteries to heat, crack and even burn, which causes severe damage.**
**Must follow safety rules as below:**
Do not throw batteries to fire or high-heat stuff.
Do not reversely place the negative and positive polarities.
Do not use metal things like wires to connect the positive and negative polarities.
Do not mix or store batteries with hairpin, necklace or other metal stuff.
Do not puncture the batteries with nails or use the hammer to crush batteries, the feet to step on batteries or any intense hit or shake.
Do not directly solder batteries.
Do not expose batteries directly in water or salt water. Please keep batteries dry.
**Do not dismantle or modify batteries.**
The batteries have safety protect equipment, which, if damaged, will cause batteries to heat, crack or burn.
Do not put batteries close to fire or other high-heat occasions.
Do not directly put or store Lithium batteries under the sun. If the batteries have to be put inside the vehicle in hot weather, please put the batteries in cool place. Do not direct expose the batteries under the sun. Direct exposure and high temperature will cause batteries to heat, crack and burn. If batteries are used improperly like that, it will reduce the durability of the equipment and damage of performance.
**Except professionals, do not use any equipment to dismantle batteries**
If original batteries are used on other devices, battery life will be damaged and reduced. If the device causes abnormal current, it will cause batteries to overheat, crack and burn, thus causing serious damage.

### Warnings:

**Do not stare at laser beam for a long time.**
This product is designed in accordance with human eyes safety laser Class 1. It means that in normal conditions human eyes will not be damaged by directly looking at laser. But for any laser equipment, proper protective measures are to be grasped in operation. We suggest that you avoid staring at lasing lens when laser works. This product will cause more harm to eyes when used with other optical equipments.
**Strictly forbidden to target product at the sun**
When exposing lens under the sun, even for a very short time, it will cause permanent damage to the lasing system of laser.
**Do not operate product in extreme temperature**
Specified temperature ranger for product components is -10° C to +60° C (14° F to 140° F).
Please operate the device in that temperature range.

**Li-ion battery will become unstable (potential danger) in high or low temperatures.**

 Charging temperature range     0° C to +45° C (+32° F to +113° F)

 Storage temperature range     -20° C to +60° C (-4° F to +140° F)

When using, charging or storing batteries, in event of the following conditions, please terminate use of batteries immediately.

**.** Batteries smell bad
**.** Batteries feel hot
**.** Batteries color changes
**.** Batteries shape or any other cosmetics abnormal

In event of the above conditions please contact local distributors.

Please do not put batteries in microwave oven, high-pressure container or induction cookers.

If batteries leak and the liquids contact eyes, please do not rub your eyes. Please clean eyes with much clear water and seek doctor's advice immediately.

**Please note: if battery liquid remains in eyes, it will do harm to your eyes.**

## Product View Illustration
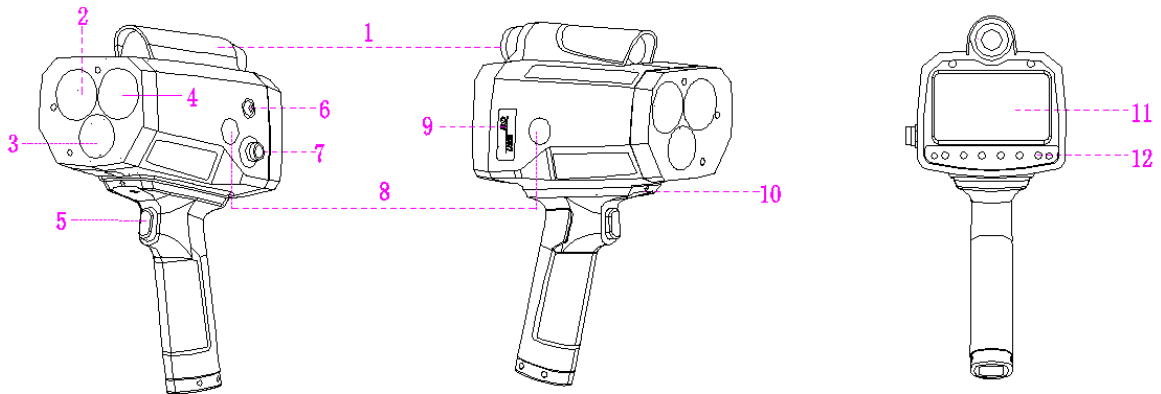


1： 4x optical aiming system

2： Lasing lens

3： 2MP /75mm /CCD camera lens

4:  laser receiving lens

5： Trigger

6： Switch

7： UART/RS232 port

8： Speaker

9： SD card slot/USB port

10：Battery holder positioning screw hole

11：4.3''touch screen

12：Homepage button

## Section #2 -Components Illustration

### Power Supply

Inside the battery handle, there are Li-ion batteries of 7.4V / 5600MAH, with short circuit and overcurrent protection. A single handle can provide 5-7 hrs normal use of speed gun camera

### Battery Charging

**Warning! When charging, must follow the instructions below:**

When charging, please use the accessory charger and charging dock. Any other charging power supply is not allowed. The power input port of the battery dock can't be directly connected to 12 V or other power supply.

**Remark:** Failure to do that will cause battery to overheat, crack or burn, which cause great damage to people.

When battery is being charged, do not place battery close to fire or expose it under sun. When battery turns hot, the built-in safety device will be activated to prevent battery from charging. Heating battery will damage the safety device, thus causing additional heat; crack or burn of battery.
**Warning:** Li-ion Battery will become unstable (potential danger) in high or low temperatures.

Charging temperature range: 0° C to +45° C (+32° F to +113° F).Charging temperature out of this range will possibly cause battery to heat or crack, which might damage battery performance and shortens battery life.When charged normally, red light of charger is on. When green light is on, it means battery is charged fully.

### Battery Handle Installation
Align battery handle with arrow mark under the device. Stick it flat and push forward to position. Tighten the screw on battery handle.

### Battery Handle Dismantle
Loosen screw on battery handle.
Pull battery handle toward the direction of screen to dismantle battery handle.

### Battery Voltage Icon
For normal use of product, the device is equipped with detector of battery status. The relevant icon is on the upper right of screen.

| Battery | Explanation |
|---------|-------------|
|  | 4 segments lit = 75%–100% estimated battery life |
|  | 3 segments lit = 50%–75% estimated battery life |
|  | 2 segments lit = 25%–50% estimated battery life |
|  | 1 segments lit = 5%–25% estimated battery life |
|  | 0 segments lit = 5% or less estimated battery life . |

**Low Battery Power-off Reminder:**
When battery is low at starting up, there will be a text reminder in self-test; if battery is low during working, the screen will enter full screen mode to display picture below. At this time please change batteries.



### Sighting View System
The device is equipped with 4x optical magnification aiming system. It has a built-in pass-through LCD display, with cursor aiming lines, capable of showing speed and distance.
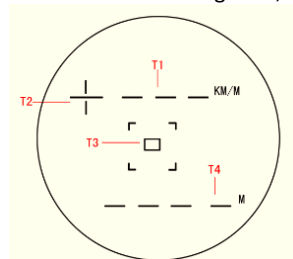


T1 ： Display currently speed measured.

T2 ： + / - is moving direction of vehicle. +for coming, - for going

T3 ： Aim at license plate via central aiming rectangle

T4 ： Display currently distance measured

### High Speed (SD) Card
Note: Must use high speed SD card attached in the box with 30m/s read and write speed.
Do not copy other files onto SD card; otherwise it will not work properly.
Do not plug or pull SD card when the device is connected to power. The device is unable to work without SD card.
The images and videos captured by the device will all be saved on the external SD card. Every file can be set to be encrypted in AES-128 method. The number of files to be saved will depend on SD card storage space. The accessory 16G card can save at least 8000 image files.
SD installation location is below the rubber with SD card mark at the side of device. Please pull apart rubber to insert SD card. To prevent reverse insertion, please confirm label is facing panel. There will be two folders on SD card for images and videos. Also, there'll be a different file everyday named by time.

### USB Port
USB port lies below the rubber marked with USB icons at the side of device. Please pull apart rubber to find USB2.0 port. Connect via data cable to the computer and copy data. When inserting USB cable to connect computer, the screen will show the icon below.
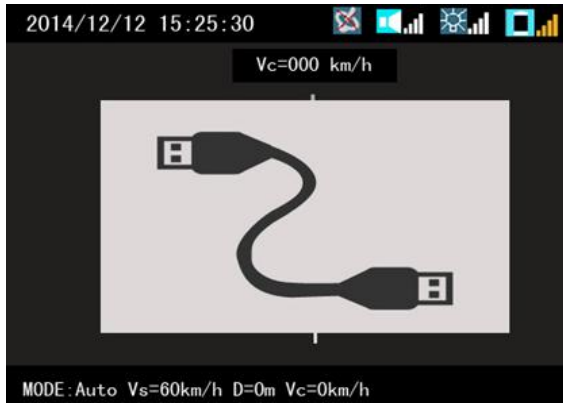
When connecting USB cable to the computer and the device is power on, use my computer or Microsoft windows file explorer to find SD card. When operating files, files are encrypted and need to be via the software that accompanies the product to view images.

When not operating files, the device will automatically power off according to the time set normally.

### Real-time Clock

The device has a built-in clock that is Real Time Clock (RTC), whose accuracy is 20 ppm.
The working temperature is -30°C + 60°C(-22°F + 140°F), with ±10 minutes every year.

### GPS Receiver

The device has a built-in Global Positioning System module, which can receive 12 satellites at the same time and quickly track, locate, recapture and process data. It can detect these signals: longitude, latitude and altitude. The GPS is used for auto settings and system time updating; When GPS is on, the device will consume more battery. When GPS is on and successfully gets location, the icon will be shown on top of screen.

### UART Serial Port

The serial port is the aviation socket at side of the device. Use this port to connect to external devices. Below is the wiring connection image.



Pin 1：TX / Send ----------------------------------------------------------------Red

Pin 2：RX / Receive --------------------------------------------------------------Yellow

Pin 3：IO / Bus -------------------------------------------------------------------Green

Pin 4：7.4V external power supply--------------------------------------------Blue

Pin 5：GND wire----------------------------------------------------------------- -Black

Pin 6：GND wire-------------------------------------------------------------------White
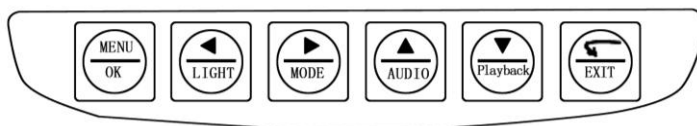
### LCD Touch Screen

The device adopts a 480*272 (4.3") resistance-type color touch screen. Use buttons at the bottom of panel or touch screen to set various parameters and operate the device.

Note: when using touch screen to operate, do not use too much force, otherwise it will damage touch screen.

## Section #3 - System and Display Info

### Panel Buttons



    Enter menu and confirm settings

    Adjust backlit brightness. There will be brightness level shown at top of the display

| | |
|---|---|
|  | Switch measurement mode |
|  | Move cursor up and down. When standby, it can be used to adjust volume. There are 4 levels of volume. |
|  | Standby: enter image/video replay. |
|  | Exit settings |

POWER button is the red button aviation socket at side. It can be used for power on and off.

## Display Info and Icons
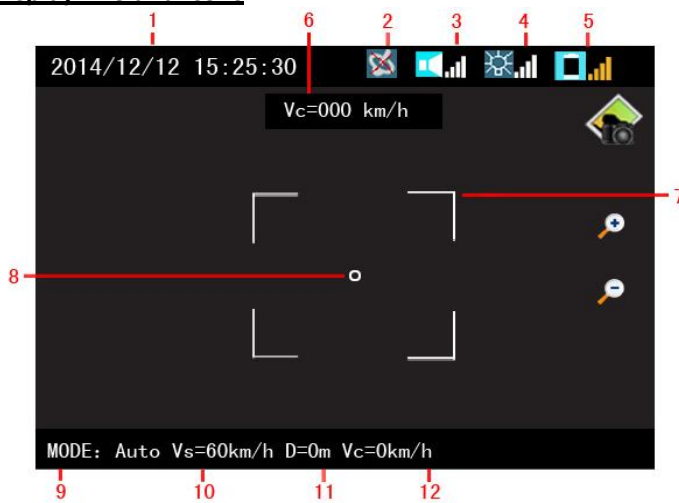


#1 System date and time

#2 GPS positioning status when showing icon  , it means GPS is not opened or disconnected; when icon

turns into , it means GPS signal is in normal connection and the system will automatically update time and record coordinate info.

#3 Volume icon, use menu or buttons to set. The latter half of icon  shows volume level.

#4 Brightness icon. Use menu or buttons to set. The latter half of icon  shows brightness level.

#5 Battery status icon

#6 On upper center of screen, VM means the speed measured. "+" before numbers means the speed of vehicle head; "-" means the speed of rear.

#7 Digital zoom function. To work properly, this function needs be opened at image settings page.

#8 Aiming rectangle icon. Use central circle inside rectangle to show laser aiming area.

#9 Mode: It shows current speed measurement and image capture mode. Use buttons or menu to set.

#10 Speed limit: It shows the speed value no less than current image capturing needs.

#11 Distance: it means current distance measured.

#12 Speed: it means the speed measured.

## System Starting-up and Power-off

**Power On**

Please confirm that battery handle and SD card have been installed. Press red POWER button at side for a second and release. The system enters booting procedure and display. In the process of starting up, the system will automatically check errors. If errors occur, it will show the error message or code, base on the error message to address accordingly or contact local distributor.

When self-test dialogue box occurs, current firmware version will also be shown at top of touch screen.

HwVer:V1.00SoftVer:V1.02FwVer:200A

Startup Self Test...

All Pass

OK
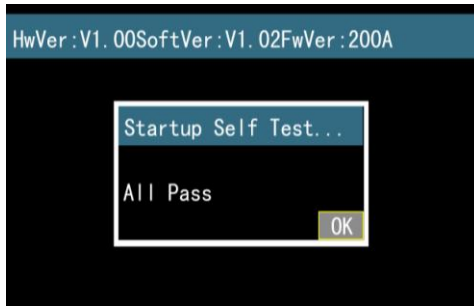
When errors occur, shut down and restart. If error remains, please contact local distributor.
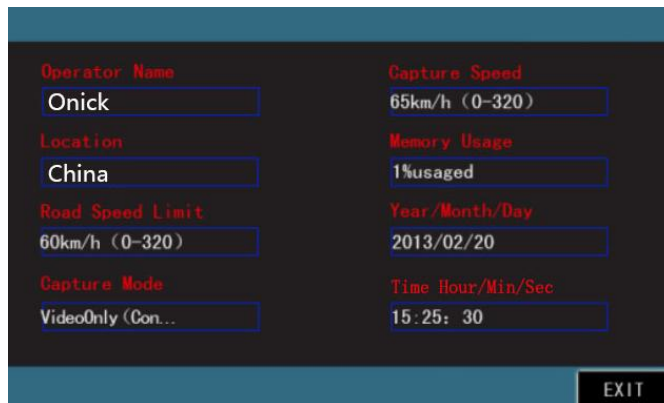
**Power Off**

Press the POWER button once and a box to confirm to shut the device down will pop up in the screen. If clicking "Yes", wait for 10s for the system to shut down. When the system crashes unexpectedly, long press POWER button and system will restart.



Shutdown?

Yes     No

**Starting-up System Parameter Settings**

After showing starting-up self-test message, it will automatically go to starting-up system settings page. Use touch screen or buttons to set. If no need to set, just press button [EXIT] or touch icon [EXIT] to exit back to homepage.



| Operator Name | Capture Speed |
|---|---|
| Onick | 65km/h (0-320) |
| Location | Memory Usage |
| China | 1%usaged |
| Road Speed Limit | Year/Month/Day |
| 60km/h (0-320) | 2013/02/20 |
| Capture Mode | Time Hour/Min/Sec |
| VideoOnly (Con... | 15:25: 30 |

EXIT

**Operator Name:** Use a stylus or keyboard on touch screen to input.

**Location:** Street name, city, etc. Use a stylus or keyboard on touch screen to input.

**Road Speed Limit**: Speed limit location notified. Use a stylus or keyboard on touch screen to input.

**Capture Mode**

. **Continuous Mode:** Pull the trigger to measure speed. Only save results if the speed is out of limit when releasing trigger.

. **Lock Mode:** Pull the trigger to measure speed. When detecting ideal speed which is out of limit, lock onto the vehicle and take snapshots.

. **Auto Mode:** Press trigger to start speed measurement. Press again to stop speed measurement. When vehicles reach +/- 20m around best focus distance and the speed is out of limit, take snapshots.

. **Video Mode:** Pull trigger to initiate video recording. Release trigger to stop video recording and save videos.

. **Tracking Mode:** It starts video recording when vehicles haven't reached focus location. Then switch to taking static images and save.

**.   Distance Only Mode:** only measure the distance

**Capture Speed:** Capture speed limit is the snapshot threshold value. The device will take snapshots when vehicles' speed equals to or exceeds snapshot speed. Use a stylus or keyboard on touch screen to input.

**Storage Usage:** SD Card usage status.

**Year/Month/Day:** Set date.

**Hour/Minute/Second: Set time zone before setting time.**

## Menu Homepage

On standby page, press button [MENU OK] to enter menu homepage. Use buttons or touch screen to enter respective sub-menu to set parameters.



**Replay:** View images or videos captured

**Camera Settings:** Set camera parameters

**Speed Measurement Settings: Set speed measurement parameters**

**System Settings:** Set system parameter 1

**Parameter Settings:** Set system parameter 2

**About This Device:** View device info

**Cursor Settings:** Set image aiming cursor and calibrate. Please note: do not set cursor location at random, otherwise it fails to aim.

## Playback

On homepage, click icon  or on standby page, press [Playback] button to enter. Use buttons or touch screen to select images or videos. Files are named into different folders by different time. Operate according to viewing need.
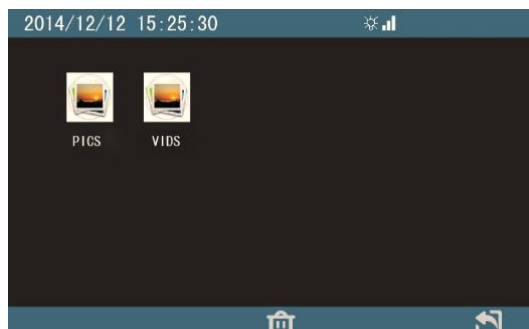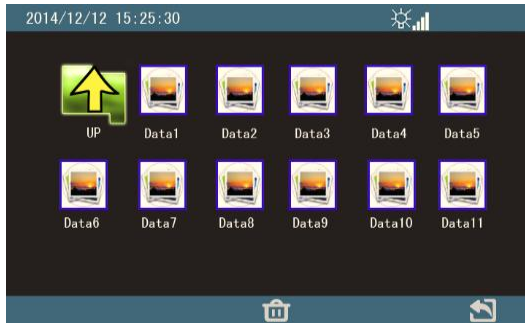
**PICS:** Static image folder. View images according to time order.
**VIDS:** Video storage folder. View videos according to time order.

## Camera Settings Page

On homepage, click icon  to enter. Operate by buttons or touch.
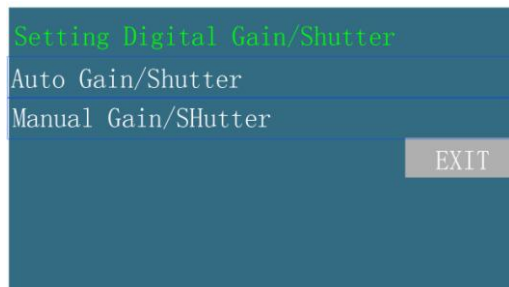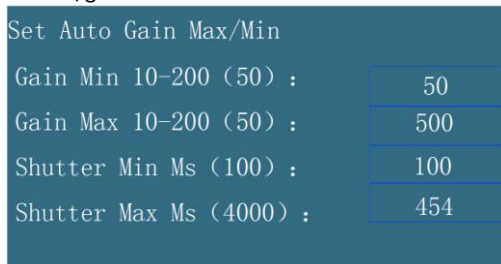


## Shutter/Gain

There are two modes: Auto/Manual for the settings of camera exposure parameters and image gains. If shutter is too big, it leads to shadowing of moving objects and image ambiguity; increasing gains will raise image brightness and also increasing image noise. But in night scenes, increasing gains is the best way to improve brightness.
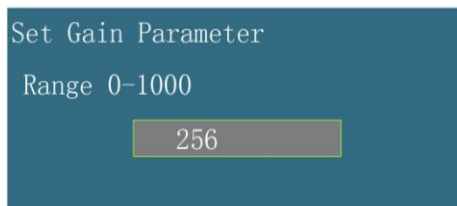**Select Auto Mode by default.**
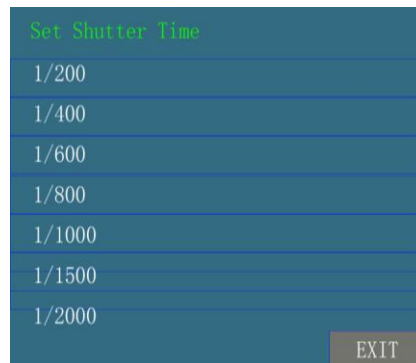Auto/Manual select dialogue box. Use buttons or touch screen to operate.



Select Auto Mode to enter dialogue box of automatically parameter setting. The values mean the range to adjust shutter/gains of the device.



Select Manual Mode to enter manual parameter setting. Please set proper values, otherwise image will be much too bright or dim. Graph 1 is the manual setting of image gains. Graph 2 is time setting of shutter time. Use buttons or touch screen to select 1/200、1/400、1/600 、1/800、/1000、1/1500、1/2000, unit as S, 1/1000 means 1 ms. The longer the time, the brighter the image and the more ambiguous the image becomes.

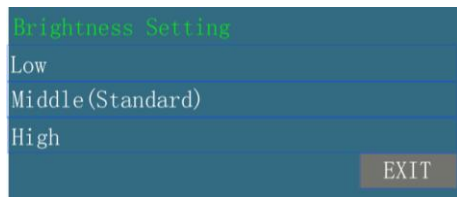| | |
|---|---|
| Set Gain Parameter<br><br>Range 0-1000<br><br>256 | Set Shutter Time<br>1/200<br>1/400<br>1/600<br>1/800<br>1/1000<br>1/1500<br>1/2000<br>EXIT |
| Graph 1 | Graph 2 |

## Auto Exposure Brightness

It is valid in Auto Exposure Mode. Select target levels to make image brightness comply with different requirements, medium by default.

Brightness Setting
Low
Middle(Standard)
High
EXIT

## Brightness/HDR/BLC

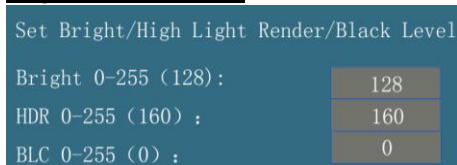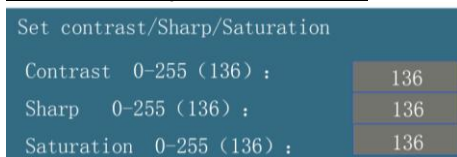| Set Bright/High Light Render/Black Level | |
|---|---|
| Bright 0-255 (128): | 128 |
| HDR 0-255 (160) : | 160 |
| BLC 0-255 (0) : | 0 |

Image brightness parameters adjustment. Increasing values will raise image brightness. It is mainly applied to improve image brightness in relatively dim environment. In general conditions please use the default value.
**Brightness:** It does not affect noise. Increasing brightness will affect image permeability. The value is 128 by default.
**HDR:** The higher the HDR is, the brighter the image becomes. But it brings about noise. The value is 160 by default.
**BLC:** In night scenes, raise BLC properly at the expense of permeability and contrast. The value is 0 by default.

## Contrast/Sharpness/Saturation

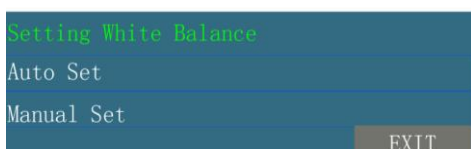| Set contrast/Sharp/Saturation | |
|---|---|
| Contrast 0-255 (136) : | 136 |
| Sharp 0-255 (136) : | 136 |
| Saturation 0-255 (136) : | 136 |

**Contrast:** Increasing contrast value can improve image permeability but will also cause dim parts of image to become black. It is recommended to properly increase contrast value in normal conditions. The default value is 136.
**Sharpness:** Improving sharpness will improve image ambiguity caused by out of focus. But if it is too big, there will be noise. The default value is 136.
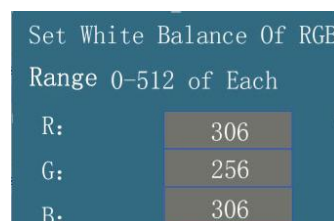**Saturation:** Increasing saturation helps to improve image vibrance without effecting brightness. The default value is 136.

## White Balance Settings

White balance adjustment is the parameters setting for restoration effects of white objects. The device has auto/manual modes. (The auto mode will automatically set parameters; the manual mode is as shown in Graph 2)

| | |
|---|---|
| Setting White Balance<br>Auto Set<br>Manual Set<br>EXIT | Set White Balance Of RGB<br><br>Range 0-512 of Each<br>R: 306<br>G: 256<br>B: 306 |
| （Graph 1） | （Graph 2） |

### Digital Zooming

When digital zooming is on, there will be magnified and zoomed icons, providing 4x magnification view.

```
Digital Zoom Setting
On
Off
                        EXIT
```
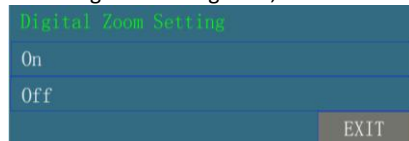
### Image Info Overlays

The video pixel size is 640x320 by default. Currently settings disabled.

### Data Encryption

```
Data Encryption Setting
On
Off
                        EXIT
```
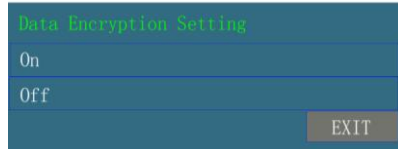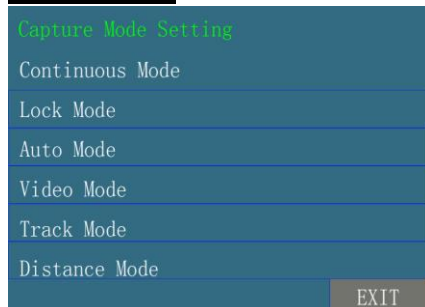
Image encryption settings, **ON**: encrypt data via AES128; **OFF**: The data is not encrypted. After data is encrypted, must use software that accompanies the device to view images. Export JPG images after encrypting data via software.

### Speed Measurement Settings

On main menu page, click icon to enter. Use buttons or touch screen to operate.
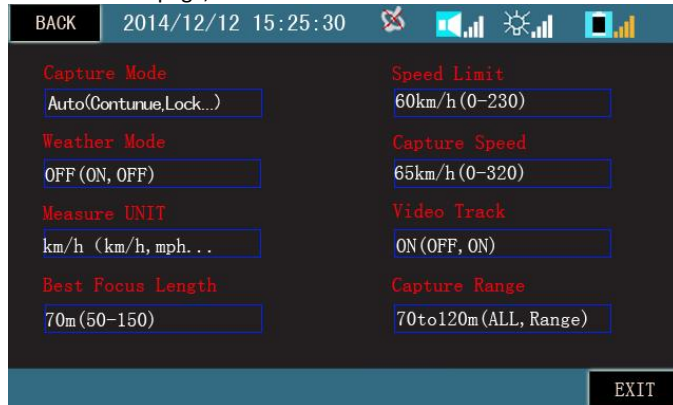
```
BACK    2014/12/12 15:25:30

Capture Mode                    Speed Limit
Auto(Contunue,Lock...)          60km/h(0-230)

Weather Mode                    Capture Speed
OFF(ON,OFF)                     65km/h(0-320)

Measure UNIT                    Video Track
km/h (km/h,mph...)              ON(OFF,ON)

Best Focus Length               Capture Range
70m(50-150)                     70to120m(ALL,Range)

                                        EXIT
```

### Capture Mode

```
Capture Mode Setting
Continuous Mode
Lock Mode
Auto Mode
Video Mode
Track Mode
Distance Mode
                        EXIT
```

- **Continuous Mode:** Pull the trigger to measure speed. Only save results if the speed is out of limit when releasing trigger.
- **Lock Mode:** Pull the trigger to measure speed. When detecting ideal speed which is out of limit, lock onto the vehicle and take snapshots.
- **Auto Mode:** Press trigger to start speed measurement. Press again to stop speed measurement. When vehicles reach +/- 20m around best focus distance and the speed is out of limit, it will take snapshots.
- **Video Mode:** Pull trigger to initiate video recording. Release trigger to stop video recording and save videos.
- **Tracking Mode:** It starts video recording when vehicles haven't reached focus location. Then, it switches to taking static images and saves.
- **Distance Mode:** This mode is only used to measure distance. Press the trigger to start ranging. (Remark: shortcuts buttons are invalid)

### Weather Mode

In bad weather, such as rainy and snowy days, need to open this mode. The inside of device will block interference, improving reliability of testing. This function is not needed in general conditions.

### Measurement Unit Setting
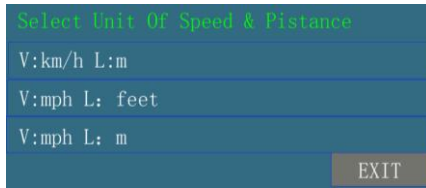
The device can switch among 3 kinds of units:

☐ Metric System: kilometer/hour and meter
☐ Imperial: mile/hour and feet
☐ UK: mile/hour and meter

**Best Focus Distance**



In Auto Mode, you can change the distance at which to take static image snapshots. Input new values according to the reminders of the dialogue box and the icons on the screen.

☐ Range=50-150 m (50-500 feet)
☐ Best and Default Value=70 m (229 feet)

**Road Speed Limit**



Speed limits setting for actual locations. Use a stylus or keyboard on touch screen to input info.

**Capture Speed Limit**



The snapshot speed limit is the threshold value to take snapshots. When the speed of vehicles equals to or exceeds snapshot speed, the device will take snapshots. Use a stylus and keyboard on touch screen to input info.

**Video Tracking**
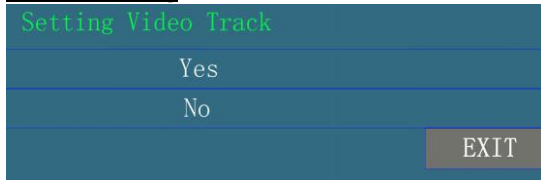


**Capture Distance Range**
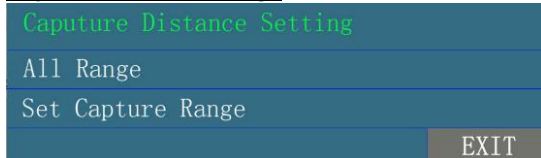


It means that in Lock Mode, when actual speed exceeds snapshot speed and the parameters set by Capture Ranger, it will take snapshots and stops to measure. Release the trigger and press again to enter next measurement.
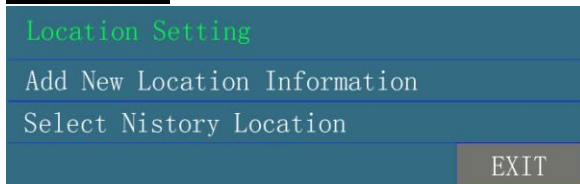
**System Setting**

On main menu, click icon  to enter. Use buttons or touch screen to operate.

**Operator Name**

Use a stylus or keyboard on touch screen to input info.
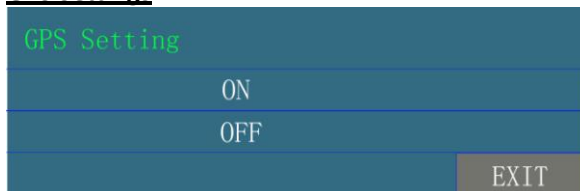
**Road Location**



Street name and city, etc. Use a stylus or keyboard on touch screen to input info.
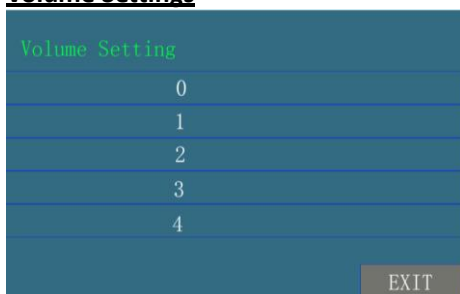
**Operator ID**

Additional info, like official number or level of police. Use a stylus or keyboard on touch screen to input a maximum of 14 digits. The default is 123456.
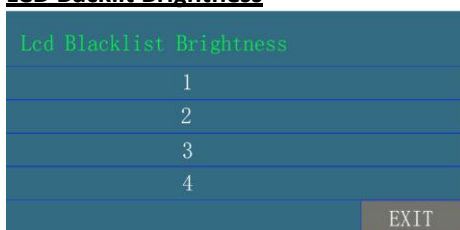
**GPS Settings**



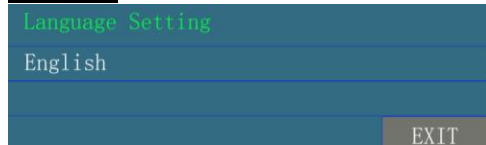Set GPS modules to be ON or OFF. Opening GPS will increase consumption of battery.

**Volume Settings**



Set function alarm and warning tone volume levels; altogether 4 levels. Use option or shortcut buttons to set.
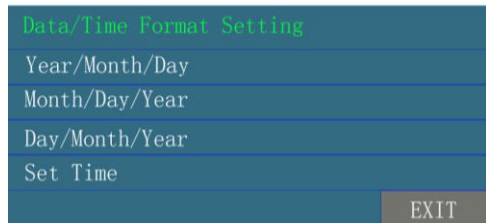
**LCD Backlit Brightness**



Set LCD backlit brightness. Altogether 4 levels; Use option or shortcut buttons to set.

**Language**

Language Setting

English

EXIT

It is language setting for menu, text and voice info. The default language is English.

**Time Info Settings**

Data/Time Format Setting

Year/Month/Day

Month/Day/Year
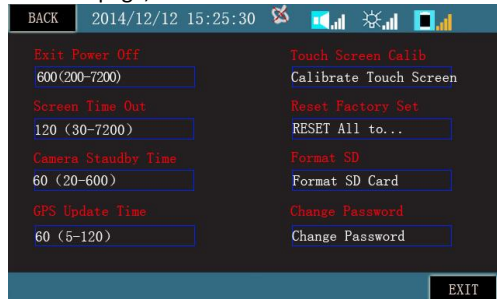
Day/Month/Year

Set Time

EXIT

Set date and time. When receiving the device, set Time Zone correctly.

**Parameters Setting Page**

On homepage, click icon to enter. Use buttons or touch screen to operate.

BACK    2014/12/12 15:25:30

Exit Power Off
600(200-7200)

Screen Time Out
120 (30-7200)

Camera Standby Time
60 (20-600)

GPS Update Time
60 (5-120)

Touch Screen Calib
Calibrate Touch Screen

Reset Factory Set
RESET All to...

Format SD
Format SD Card

Change Password
Change Password

EXIT

**Nothing-is-done Power-off Time**

Set Auto Power Off Time (No Operation)

Range200-7200

600
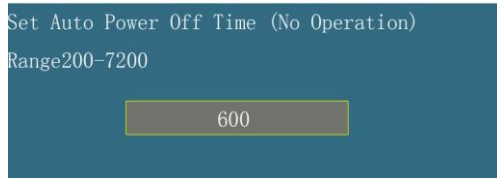
Power-off time for the device. When nothing is done to the device, the timer starts. When timer reaches the time set, the device will automatically power off. The setting range is 200-7200s. (Remark: when range value is 0, auto power-off is invalid.)

**Display Standby Time**

Set Screen Sleeping Time (No Opration)

Range30-7200

120
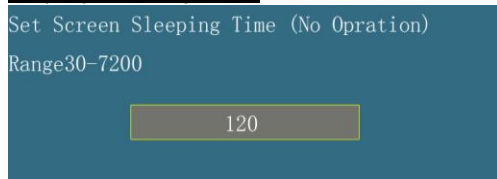
For LCD screen backlight sleep time, when nothing is done to the device, the timer starts. When timer reaches the set time, the LCD screen will sleep. Use any button to reactivate the screen. The setting range is 30-7200s. (Remark: when range value is 0, auto power-off is invalid.)

**Camera Standby Time**

Set Camera Close Time(No Operation)

Range30-3600

120
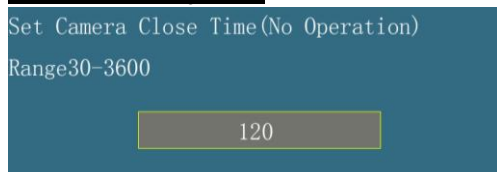
For camera power-off time, when the device is not measuring speed, the timer starts. When the timer reaches the set time, the camera will be power off. To activate camera into working mode, re-start speed measurement.

**GPS Update Time**
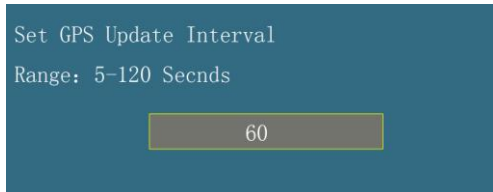
GPS update time interval; used for updating date, time and location of device.

## Touch Screen Calibration

LCD touch screen calibration. When during usage finding misalignment between touch location and actual location, it means that the device is in need of calibration. After entering calibration program, use a stylus to point at the center of the rectangle displayed, complete the setting orderly. The system will automatically exit the calibration interface, meaning that it has been calibrated.
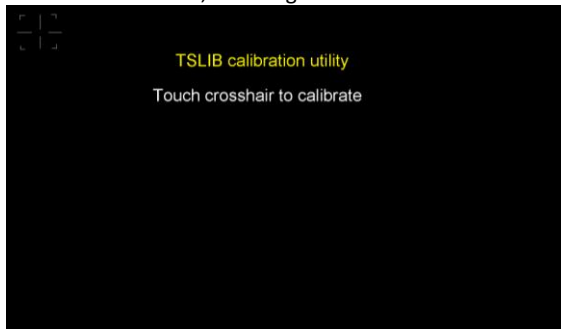


## Restore Factory Settings

To restore factory settings, please click menu to display a dialogue box. Please input user's password. If the password is correct, the device will restart.

All of the original parameters that were set by user will become default parameters.

When inputting password, if user doesn't want to do initialization, he can directly exit. The original password is 123456.
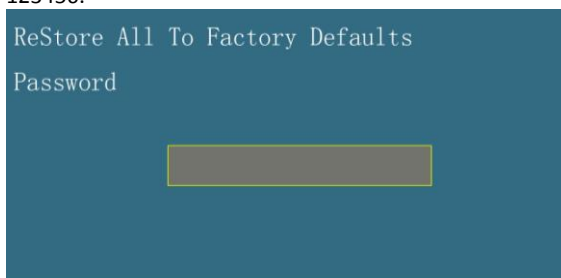


## Formatting SD Card

Formatting SD card will wipe out all info on the card. Please click menu to pop up a dialogue box. Enter user password. After the password is correct, all data on SD card will be wiped out.
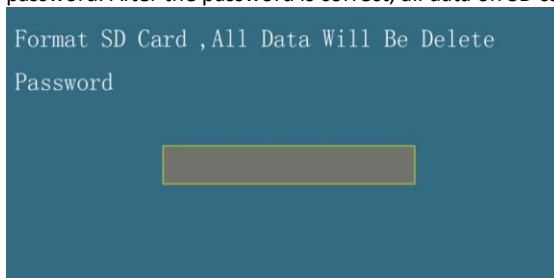


## Change Password

For user password changing, please click menu to pop up a dialogue box. Input the original user password and then input new password twice. If password is correct, click OK to confirm. The password is changed successfully. Exit the dialogue box.

**Device Information**

On main menu, click icon  to enter and view device info. Any changes are not allowed.



**Device Version Info**

Display firmware version of various parts of the device.

HW: means version of hardware; SW: means version of display and its applications FW: means version of image capturing and processing software

**Device Serial Number**

Serial number of the device is as shown in the graph: 810014.

**System Self-test Info**

Display starting-up self-test results. If it fails, relevant error codes will be displayed.

**External Device**

Display other components installed of the device. The device is shipped with RTC clock and GPS modules by default.

**Latest GPS Update Time after Starting-up**

Display the latest GPS calibration data and time.

**SD Card Storage Available**

Display SD card storage available and also calculate number of images available to be saved.

**Sensor Info**

The sensor is used to show battery voltage and internal temperature of device. BAT: means battery voltage. When voltage is lower than 6.9v, battery will soon run out. Please change or charge battery in time. Temp: shows internal real-time temperature.

**Cursor Settings**
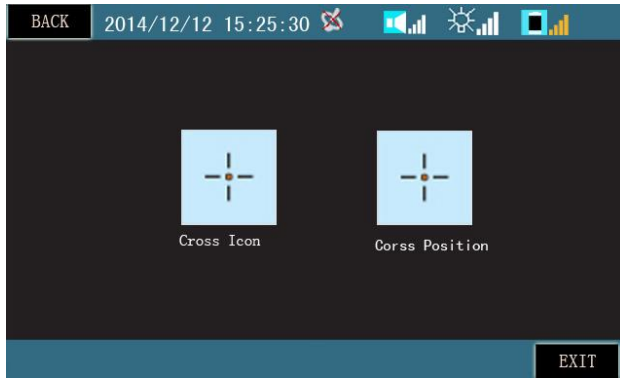
## Cursor Icon Settings

On main menu homepage, click icon  to enter. Then click icon  to select type of aiming rectangle in the center of image when measuring speed and taking snapshots. Please use buttons or stylus to select the type of aiming rectangle needed.
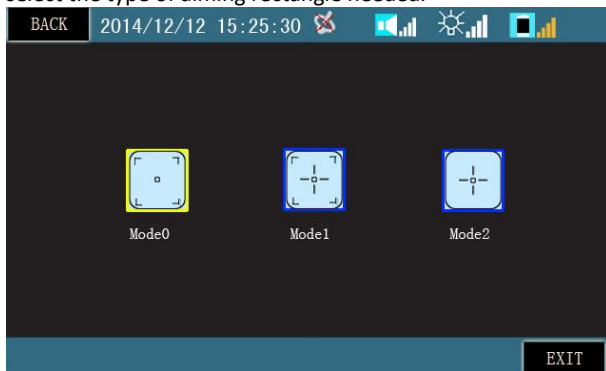


## Cursor Location Settings

**Note: Please do not change at random. Otherwise, it leads to poor calibration and effects misalignment between actual laser location and aiming rectangle in the center of the screen, thus affecting the measurement of vehicles.**

Please enter aiming settings via menu of aiming rectangle settings. It needs user's password to operate. Input the correct password (6 digits valid) in the dialogue box popping up.
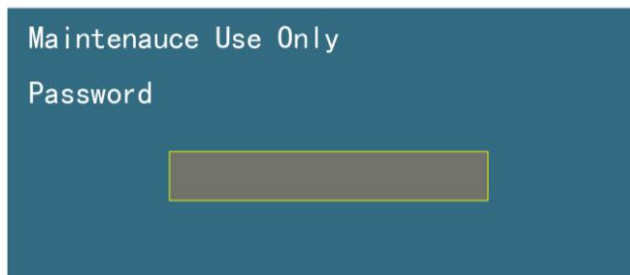


After entry, please use a tripod to secure the device. First, aim at a target at 80-100 meters away via the telescope center ring. Then, move cross-shaped cursor in the screen to align the center ring of the screen with the center ring of telescope. Click OK to confirm settings.

## Section #4 - System Firmware Update

If the official website or distributor's website reminds a software update for the product, users can down zipped up folder of updates to update on their own. The specific steps can be done according to the following
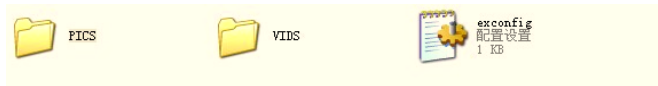
instructions: Download zipped up folder  update , and uncompress files. The name of the folder is same as the

zipped up folder. Any change to the name of this folder  update is not allowed. The folder includes some updates so please do not delete or modify.

Copy the folder to SD card.

Then restart the device. The device will automatically load the updates files to update. The update process interface is as below. Please hold on for a few seconds. The device will automatically power off after finishing updates, which means that update is done and the device will be using the newest firmware next time it starts up.
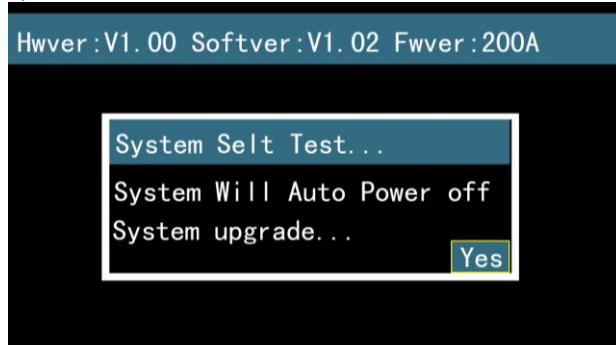


## Section #5 - Image View Software

### Software Function Introduction

It is mainly used to read the videos and images encrypted by the device.

### Software Usage and Installation

This software is green software and obviates the need for installation. Down zipped up folder and directly click  to run software. Below is a screenshot when the software starts.



### Software Menu Column Function Description

| Main Menu | Function Items | Function Descriptions |
|---|---|---|
| File | Open | Open videos or images in the device and display them in software. |
| | Export To Disk | Automatically read SD card. Select Export To Disk to export data on SD card to the computer. Select whether to delete the original data on SD card. |
| | Video Snapshots | Used only when video is played by device. This operation can save screenshot of the video being played and save the image to computer. The screenshot is not encrypted. |
| | Export Current Image | Used to save to computer the image displayed in the current Big Image Area in software. The image is not encrypted. |
| | Batch Export Images | When there are a number of images in software, this operation can export images to computer once and for all. |
| | Convert Current Video | Encrypt current video and save in computer. |
| | Batch Convert Videos | Encrypt multiple videos and save in computer. |
| | Print | Print the content displayed in the Big Image Area displayed in current software. |

| | Exit | Exit current software. |
|---|---|---|
| Cross | Aiming Cross Icons Selection | The software provides 3 types of aiming cross icons for users to select. |
| Manage | Parameters Setting | Able to set relevant properties of camera. |
| | SD Card Status | View SD card status |
| | Image Export Info Configuration | According to user settings, select to display relevant info on the image displayed in Big Image Area. Display the relevant info also when users save and print. |
| Language | Language Settings | Current available for setting Chinese and English. |
| Help | About | Relevant introduction about the software. |
| | User Manual | View relevant operation description of software. |

## Video Area

Used to display and play video files (VIDS file)

## Small Image Area

Used to display static image (PICS file)

## Big Image Area

Display the magnified image in small image area

## Status Bar

Display various properties of current static image (vehicle speed, vehicle distance, current speed limit, road speed limit, GPS speed, GPS altitude, longitude, latitude)
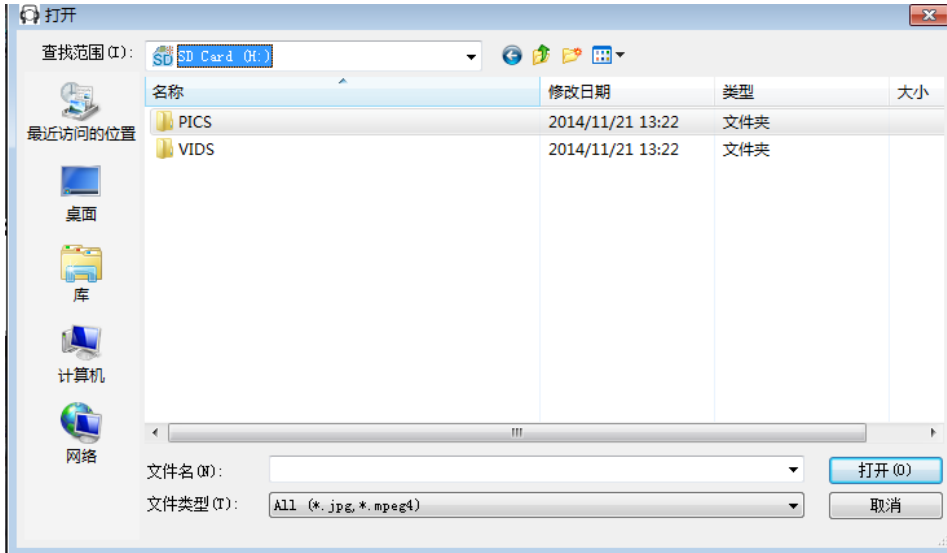
## Software Image and Text Illustrations
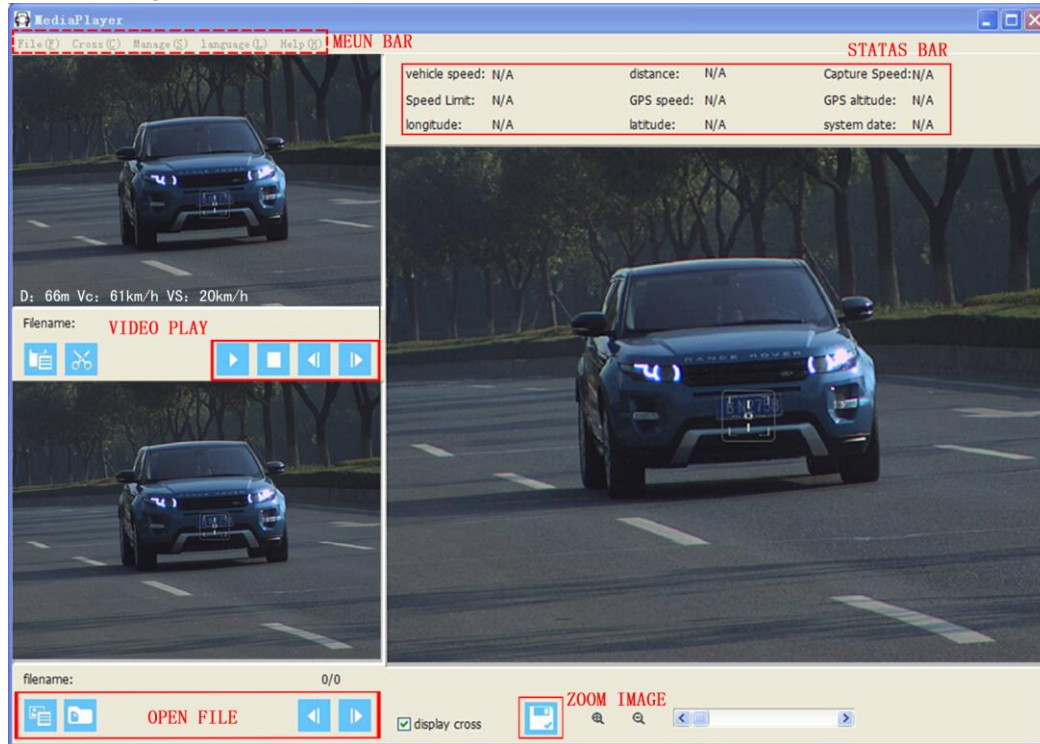


## Open

Click File→Open as shown below(PICS format):
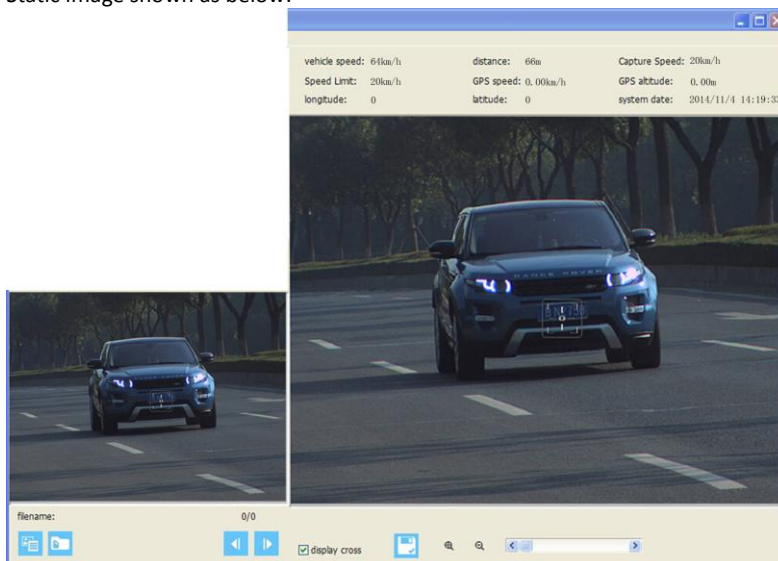
Select the files you need to open. (Static images PICS/ Video files VIDS)
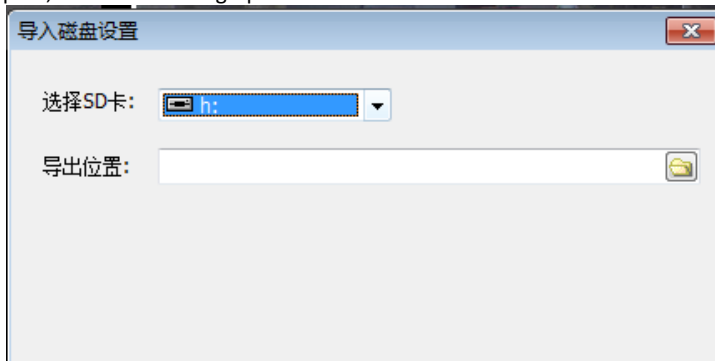
Video files shown as below:



Static image shown as below:



Remark: when opening images that have related videos, the related videos will also be opened.

**Export to Disk**

Click File→Export to Disk. This operation can export data in SD card to current computer. Please select target path, as shown in the graph below:
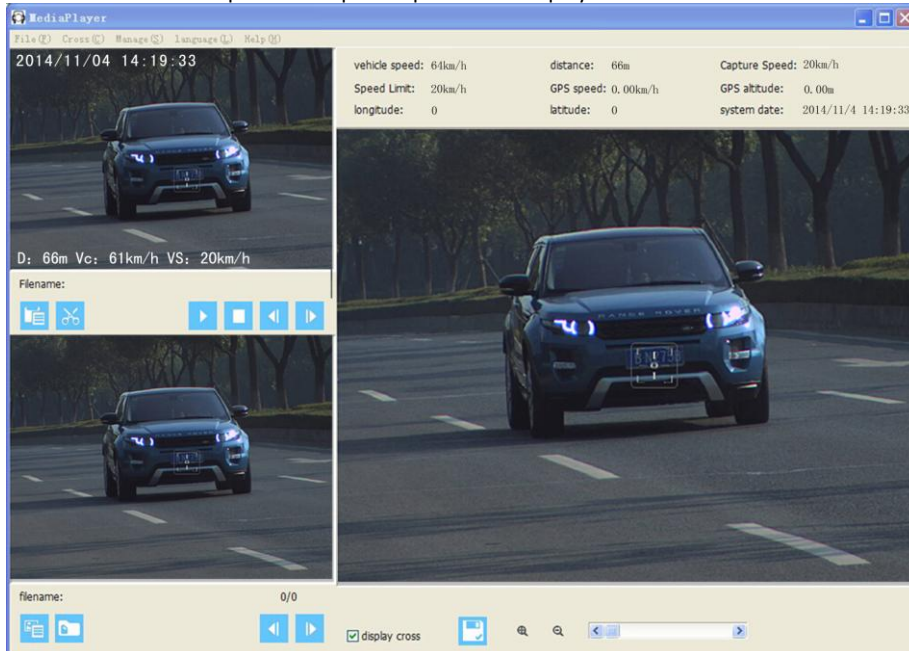


## Video Snapshots

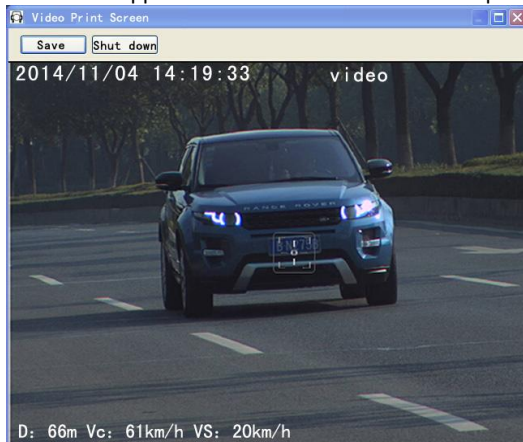Click File → Video Snapshots and it will show the interface below. Save to the path you select.

Step 1:

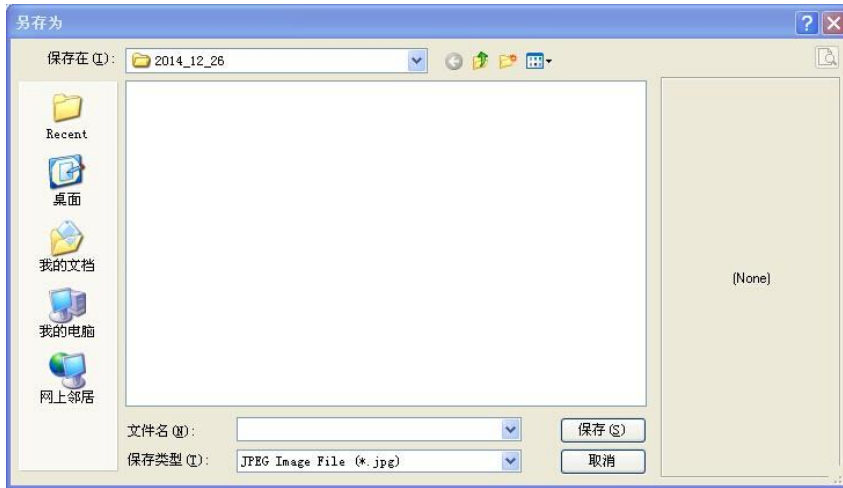Connect SD card to computer and open respective video play file.



Step 2:

Click file at upper left corner and select video snapshots. It shows the dialogue box as below
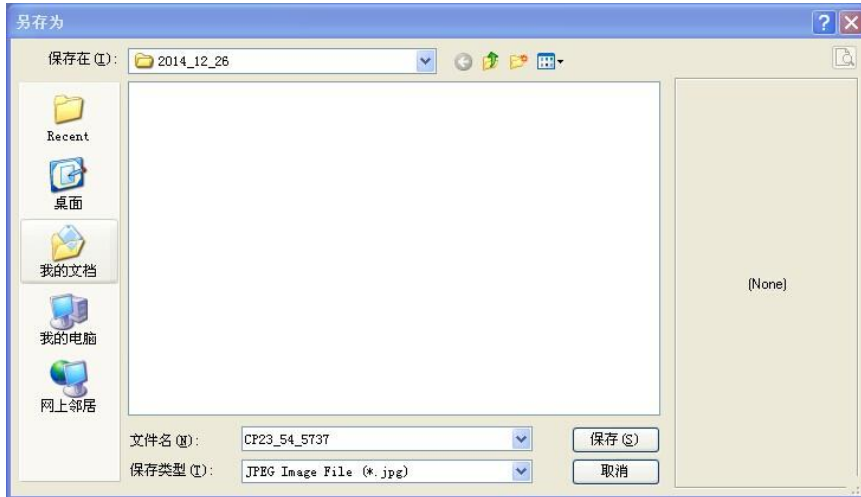


Step 3:

Click "Save" at upper left corner of the above graph. It shows the dialogue as below. Select the disk needed and click save.
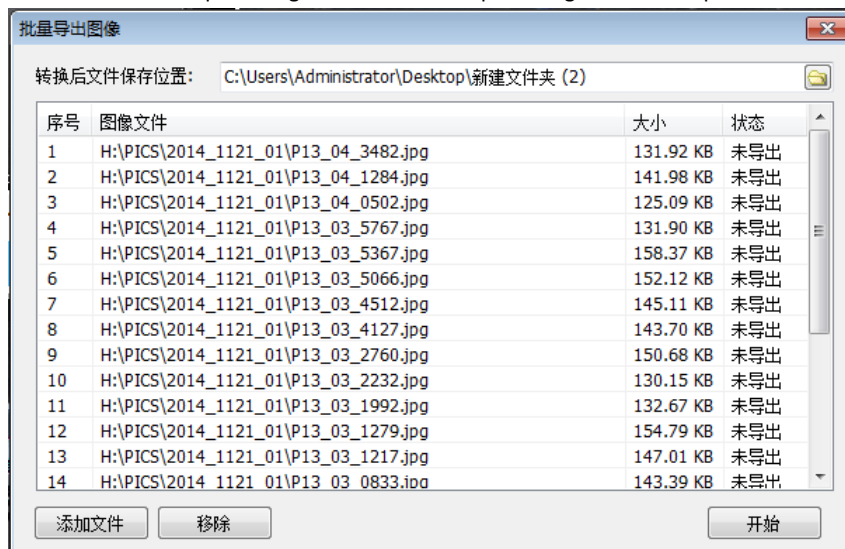
### Export Current Images

Click File→Export Current Image. Select files that need to be saved. Clicks "save", as shown in the graph below:
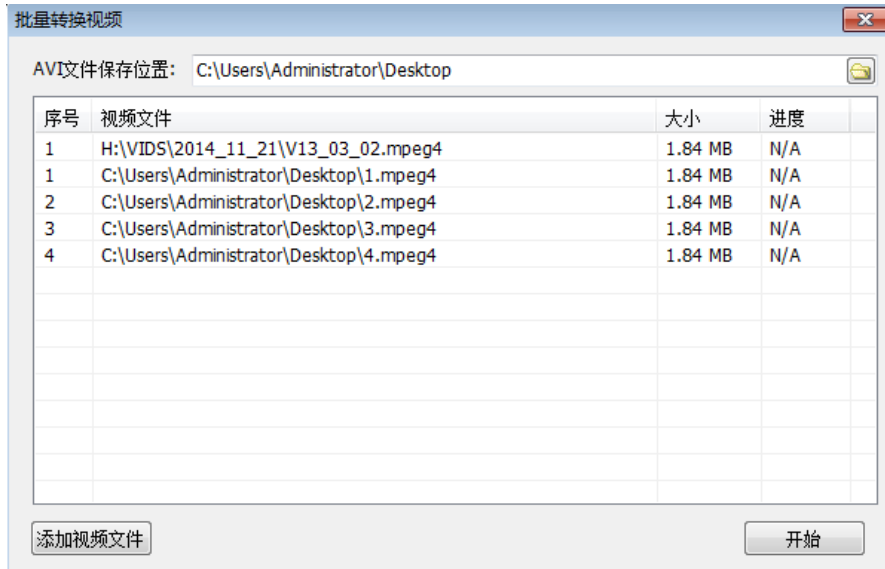


### Batch Export Images

Click File→ Batch Export Images. Click start to export image info to computer.



### Batch Export Videos

Click file→Batch Export Videos. Add related videos and save path and then click start to process the video files selected.

### Printing

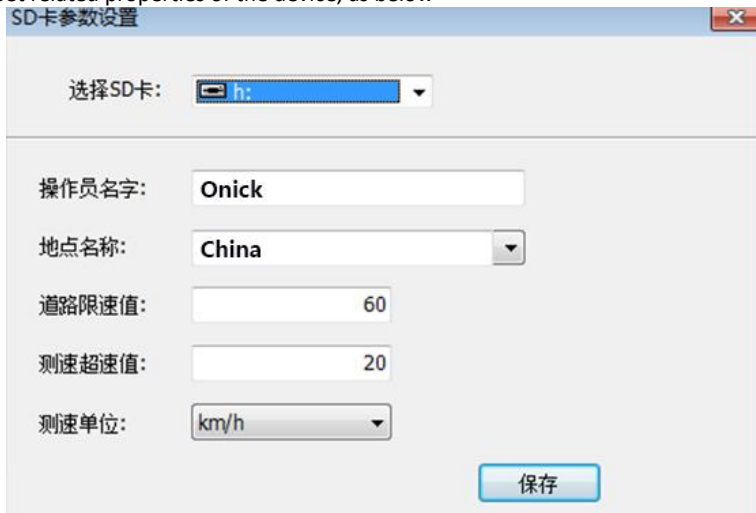Click File → Print. Click "OK" to print image shown in the file, as below:



### Exit

Click File → Exit to close the file.

### Parameter Settings

Click Manage→Parameters Settings

Set related properties of the device, as below

## SD Card Status

Click Manage→SD Card Status to display SD card status, as shown in the graph



## Image Export Info Settings

Click Manage→Image Export Info Setting. The textbox in the graph is for setting the text to be shown in image and printing. For example, set "Speed" and it respectively shows Speed=34km/h.

Display Tick to show related image in the image.

Dropdown Box    Select 1, 2 or 3 for text size in the image.
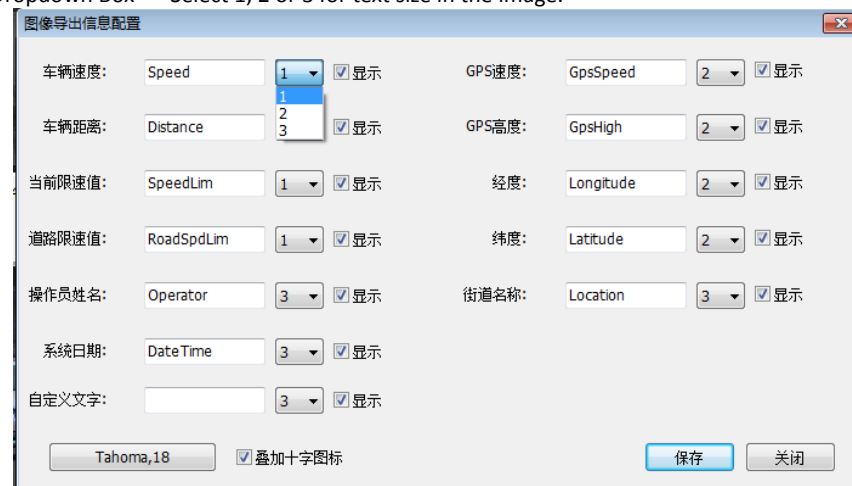


## Shortcuts Operation

## Video Area Shortcuts

As shown in the graph, from left to right, they are respectively "open video", "video snapshots", "Play", "Stop", "Jump to first frame of video", "Jump to next frame of video"
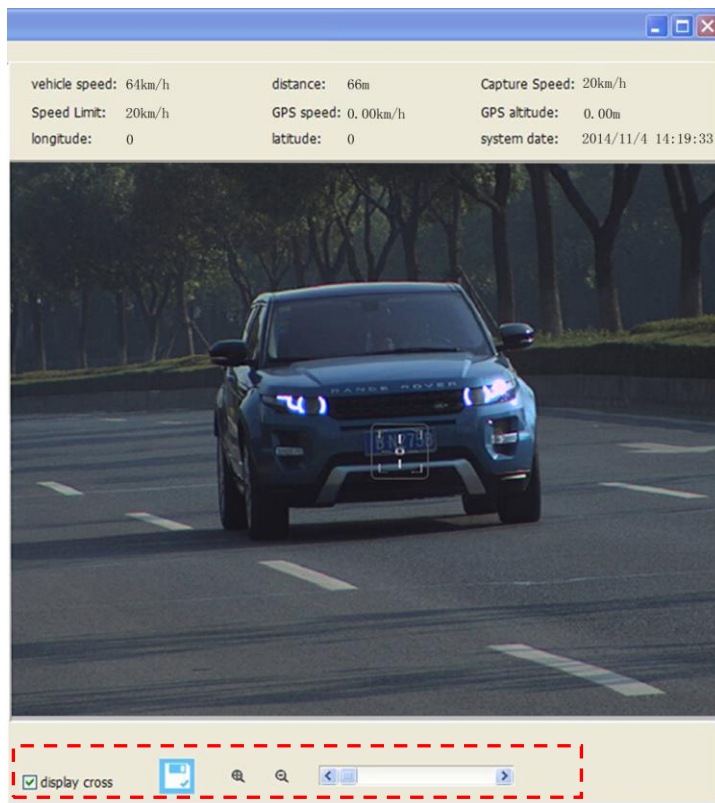
**Small Image Area Shortcuts**

From left to right, they are "Open directory", "Open image", "Previous", "Next".



**Big Picture Area Shortcuts**

From left to right, they are respectively shortcuts of "Show cross on image", "Save Image", "Image zoom-in", "Image zoom-out", "Image zoom in and out scrolling functions"



**Thank you for purchasing the Onick LSP320 handheld laser speed forensics instrument!**

**For more product information, please visit: www.onick.com.cn**