

Radar Speed Measurement Snapshot System (GUI Version)

User's Manual

Version 1.0.0

Welcome

Thank you for purchasing our product!

This user's manual is designed to be a reference tool for your system.

Please read the following safeguard and warnings carefully before you use this series product!

Please keep this user's manual well for future reference!

Important Safeguards and Warnings

Please read the following safeguards and warnings carefully before using the product in order to avoid damages losses and body injuries.

Note:

- Please transport, use and store the product under appropriate temperature and humidity.
- Do not expose the device to lampblack, steam or dust. Otherwise it may cause fire or electric shock.
- Do not install the device at position exposed to sunlight or in high temperature. Temperature rise in device may cause fire.
- Do not expose the device to humid environment. Otherwise it may cause fire.
- The device must be installed on solid and flat surface in order to guarantee safety under load and earthquake. Otherwise, it may cause device to fall off or turnover.
- Do not place the device on carpet or quilt.
- Do not block air vent of the device or ventilation around the device. Otherwise, temperature in device will rise and may cause fire.
- Do not place any object on the device.
- Do not disassemble the device without professional instruction.

Warning:

- Please use battery properly to avoid fire, explosion and other dangers.
- Please replace used battery with battery of the same type.
- Do not use power line other than the one specified. Please use it properly. Otherwise, it may cause fire or electric shock.
- Please use power supply matching SELV requirements, and IEC60950-1 Limited Power Source. Power supply shall follow requirements on device label.
- For I-type structure product, connect it to power supply plug with GND protection.
- If you use power plug or appliance coupler as disconnecting device, please maintain the disconnecting device available to be operated all the time.

Special Announcement

- This manual is for reference only, subjected to the actual product.
- All the designs and software here are subject to change without prior written notice.
- All damaged and losses caused by operation not following instructions in this manual, are borne by the user.
- All trademarks and registered trademarks are the properties of their respective owners.
- If there is any uncertainty or controversy, please refer to the final explanation of us.
- ☐ Please visit our website for more information.

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1 System Introduction

1.1 Overview

The HWS800A radar speed measurement system is a full embedded system featuring vehicle speed measurement, image snapshot, video monitoring, automatically number plate recognition (ANPR) and etc.

This series product perfectly meets the requirement of the traffic business of the public security and generally integrates the advantages of the domestic and overseas products. The built-in design is stable and of strong function. It is easy to use and very convenient to install. It can be widely used in many areas.

This series product also integrated the Dahua's technical advantages in the security area. It is a perfect product integrating the security area and the intelligent transportation system together.

1.2 Technical Specifications

Parameter	Content	Note
General	Snapshot Picture Resolution	8.0 mega pixel, 3296*2536
	HD Video Resolution	2.00 mega pixel, 1600*1200
	Sensor Type and Size	4/3 inch CCD
	Transmission	TCP/IP, FTP optional
	Image Compression	JPEG
	HD Video Format	Standard H.264 main profile 5.0
	HD Video Frame Rate	1~16fps optional
	Monitoring Lane	1~4 lane
	Vehicle Speed Range	10~250 km/h
	Speed Measurement Accuracy	Actual speed: <100Km/h; Error: -4Km/h~0; ≥100Km/h; Error: -4%~0;
	Over Speed Snapshot Rate	≥ 95%
	Vehicle Recognition Rate	≥ 90%
	Lane Recognition Rate	≥ 90%
	Record Mode	1, 2, 3 optional
	Storage Capacity	Standard 500GB, 2.5 inch HDD
	Radar Frequency	24.00GHz~24.25GHz
	Radar Field Angle	Horizontal 6 degree (-3db) , vertical 28 degree (-3db)
Interface Type	Data Port	1 RS232 serial, 1 100 Ethernet port, 1 USB2.0 port, 1 SATA port
	Lithium Battery Port	1 14.8V, 10AH lithium battery port
	Power Input Port	1 19VDC input port
	Power Output Port	1 12VDC output port, max 5W
	Flash Light Sync Port	2, switch

Parameter	Content	Note
	LED Strobe Light Sync Port	1
	Lens Port Type	Type C
Trigger Mode	Radar Trigger	Support
Special	Plate Recognition Function	Support
	Lane Recognition Function	Support
	HDD Storage Function	Support
	ANPR Snapshot Function	Support vehicle pass snapshot, 1, 2 pic optional
	Record Storage Function	Support period record, violation record
	Storage Space Function	Support picture and record storage capacity setup, guarantee picture storage space
	ICR Switch	Support day/night ICR cut
	Remote Control Function	Remote config and control via Web/client
	OSD Info Overlay	Support , customize date, time, location, driving direction, plate no., plate color, vehicle model, speed, speed limit and etc.
	Watermark	Support , picture support watermark
Working Environment	Working Power	DC19V
	Average Power	<20W
	Working Temperature	With lithium battery: -20℃~+60℃ Without lithium battery: -30℃~+70℃
	Relative Humidity	20%~90%, no condensation
	Dimensions	230*290*225 (L*H*W, unit: mm)
	Weight	9.0Kg

1.3 Features

● Fully embedded design without PHD, stable and reliable system

Comparing the speed measuring system consists of the PHD and IP camera, this series product featuring the compact design, stable performance and is very convenient to use. It is free of the PC virus and OS vulnerability.

The HWS800A series product adopts the Dahua's technical advantages in the security area and intelligent traffic system (ITS) area. The host software circuit adopts the mature platform Dahua has already used in the ITS area.

- ✧ The hardware circuit is also be optimized and perfected to use in the industry-level or military level chips, which lowers the system power consumption and can guarantee the long time running period in the harsh environments.
- ✧ The full real-time embedded operating system and unique software specifications enhance the system working efficiency and stability.
- ✧ The dual watch dogs (software and hardware) technology absolutely prevents the system from downing.

● Integrated design, compact construction, easy to install, use and maintain

- ✧ HWS800A series product integrates the high definition camera, host, LCD, touch panel, power, speed measurement radar, special image storage disk and etc together.
- ✧ The compact construction and integrated design allows it to be used in either stationary or mobile environments.

- **Built-in special image storage device, support over picture and record storage**

The built-in special image large capacity disk meets the requirement of data safety and mobile speed measurement device. It supports the short-time local storage and data backup. At the same time, the system can upload the image to the centre server simultaneously to storage, backup and review, which realizes dual storage at the local-end and the centre.

- **Narrow beam radar speed measurement to enhance the accuracy, effectively hide from the electronic dog (anti-speed radar detector)**

Dahua self-developed high performance narrow wave radar can meet the international speed measurement accuracy. The narrow beam radar is rarely detected by the electric dog. It can effectively monitor the approaching and departing vehicles.

- **Industry-level component and high reliable socket connector**

The hardware circuit design adopts the industry-level components. The system is of low power consumption, high reliability. The built-in Lithium battery can averagely work as long as 8 hours. The imported reliable socket connector such as Lemo connector and air-level connector further guarantees the system reliability.

- **High definition image snapshot**

There is a 8 mega high definition CCD camera to snapshot the offence vehicle. System can overlay information such as the vehicle speed, snapshot time, snapshot position. The built-in watermark function prevents the vicious image modification, which maximally guarantees the authentic image.

- **General management and remote maintenance function**

System supports remote maintenance function. Supports the remote malfunction diagnosis, malfunction alarm and fix remotely, which greatly reduce the maintenance work load.

- **Multiple connection ways, support wireless via CDMA/GPRS/3G**

System supports wire cable connection and wireless connection via CDMA/GPRS/3G at the same time. It can be widely used in various environments.

- **Extra low power consumption, support solar power**

The whole system average power consumption is below 20w, completely support the solar power.

1.4 Main Function

Function	Description
Vehicle image snapshot	Accurately snapshot the speeding vehicle image according to the speed limit you set. At the same time, it can overlay the vehicle information such as the snapshot position, snapshot time, vehicle real-time speed, road speed limit, measure direction, system serial number.

Function	Description
Dynamically real-time preview function	Provide dynamically real-time preview function. Support display the lane real-time monitor information via the LCD or Web.
Data search	Application platform supports the vehicle information search. Various user right levels supported. Fuzzy search and data backup also supported.
USB backup	USB 2.0 port is available. Support USB data backup and USB hot swap function. Support backup the images of one or more days to the USB device.
Multiple human and machine alternating ports	The system provides full-touch human and PC alternating interface. It is useful for your operation.
Vehicle speed measurement	Radar speed measurement can quickly and accurately test the vehicle speed. Support customized speed value (The speed value ranges from 20km/h to 250km/h.).Support the multiple-lane speed measurement and extra low vehicle speed measurement.
ANPR	Real-time record of vehicle image and recognize plate number.
Lane identification	Via radar distance measuring, identify lane where vehicle locates.
Vehicle classification	Via radar classify vehicles into different types. It supports vehicle size of large, small or large, medium and small.
Auto alarm	Customized speed limit. There is an on-site alarm and remote alarm when the vehicle speed is too low or too high.
Data transmission and remote maintenance	Data transmission, remote access and remote system maintenance are realized via Ethernet, CDMA/GPRS and 3G technology. It is suitable for you to monitor the system internal temperature, and view key component running status.
Software upgrade	System supports the host software remote upgrade and local upgrade. System can resume previous working status after upgrade.
Log search	System can record the device key operations and support log search function.
Auto maintenance function	Support auto maintenance function and customized maintenance period. System can restore previous working status after the reset operation.

2 Installation

HWS800A Radar recommend the best location for the road from the edge of 1 to 3 m, and the angle between the radar and the roads default 22 °, angle error $\leq \pm 1^\circ$; Radar forward undulating road surface must be flat and there is no turning no ; radar forward no large metal spacers and the presence of a strong magnetic field; do not meet the above installation conditions may cause inaccurate speed, accidental shooting and other issues.

3 Structure

3.1 System Structure

HWS800A speed measurement system includes power, embedded interactive snapshot host, radar, LCD screen and touch screen.

The host is core of the system and it is mainly responsible for snapshot, flashlight sync, camera control, radar speed measuring and receiving this value, image storage, network transmission, USB downloading and GUI display.

3.2 Appearance



Figure 3- 1 HWS800A radar speed measurement



Figure 3- 2 HWS800A radar speed measurement 2



Figure 3- 3 HWS800A radar speed measurement 3



3.3 Panel and Ports

3.3.1 Right Panel

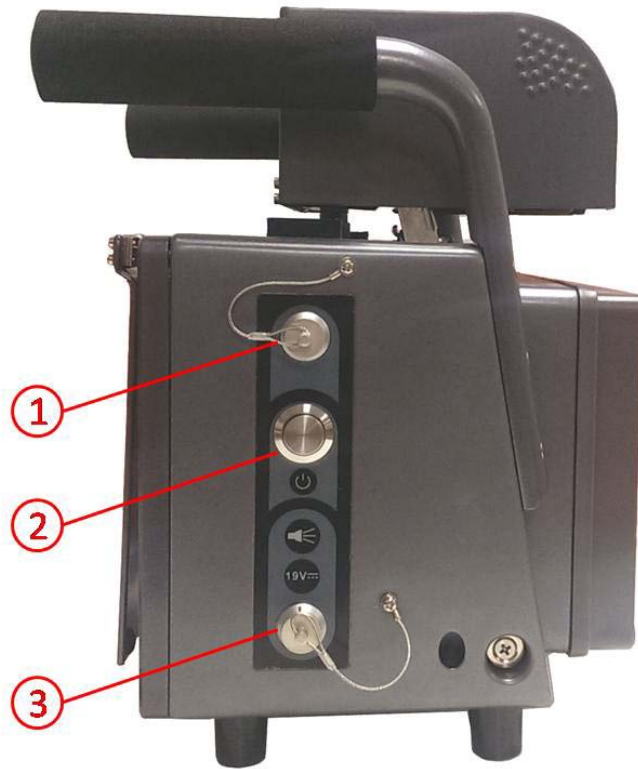


Figure 3- 4

Please refer to the following sheet for detailed information.




No.	Line Color	Description
1	Orange	Flashlight +(F+)
	Grey	Flashlight -(F-)
	Green	Flashlight + (F2+)
	Red	Flashlight - (F2-)
	Black	Strobe light + (S+)
	Purple	Strobe light - (S-)
	Brown	RXD
	Blue	TXD
	Yellow	GND
2	-	Power switch
3	-	DC19V power input port

3.3.2 Front Panel



Figure 3- 5

Please refer to the following sheet for detailed information.

SN	Icon	Description	Color	Function
4		System running indication light	Green	Flashing: System is working properly. On: System has abnormality. Off: system has stopped working.
5		Lithium battery recharge indication light	Blue	Flashing: Lithium battery is recharging now., Off: The recharge is completed or there is no battery available.
6		Power light	Red	On: System is on. Off: System is off.

3.3.3 Left Panel



Figure 3- 6

Please refer to the following sheet for detailed information.

SN	Port Name
7	Network, USB port, DC 12V power output and etc.
8	Lithium battery

4 Operation

4.1 Boot up and Shut down

Before your operation, please make sure all cable connections are right and the Lithium battery has inserted in the slot.

4.1.1 Boot up

Push the power button in the side panel, you can see the red power indication light becomes on. The system is booting up now.

4.1.2 Shut Down

Push the power button in the side panel; you can see a dialogue box: System is shutting down now... The system shuts down after five seconds.

4.2 Menu Operation

- All of following settings menu must be saved into force after confirmation, otherwise it is set invalid.
- After restore the default configuration parameters, you must click Save to confirm effect.
- All pictures and videos can be displayed in the interface, you can click on the image / video in a point, regional enlargement operation
- After picture / video entering zooming mode, and then click on any point of the display area, restored to thumbnail mode.

4.2.1 Login Interface

After system booted up, it goes to the login interface. See Figure 4- 1.

There are three default accounts:

- User name: admin. Password: admin.
- User name: 888888. Password: 888888.
- User name: 666666. Password: 666666.

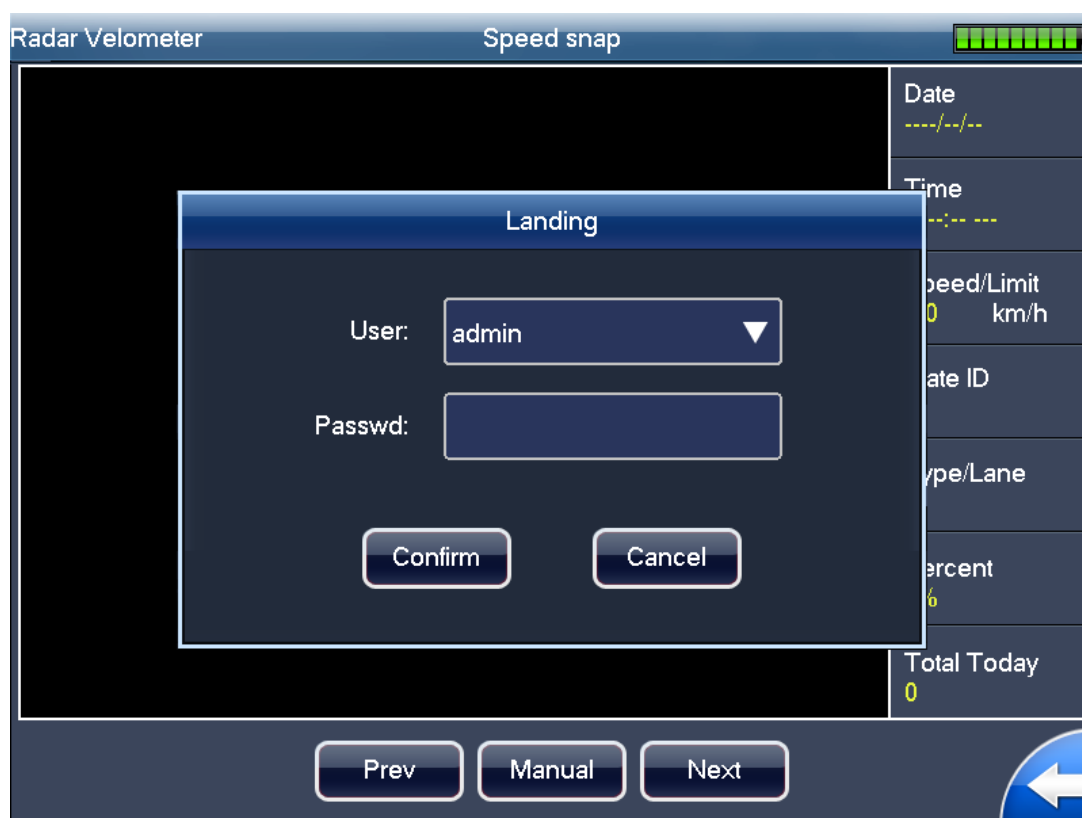


Figure 4- 1

If it is your first time to use the system, please select the user name from the dropdown list and then input the corresponding password in the soft keyboard. You can create your own account to login for the next time. See Figure 4- 2.

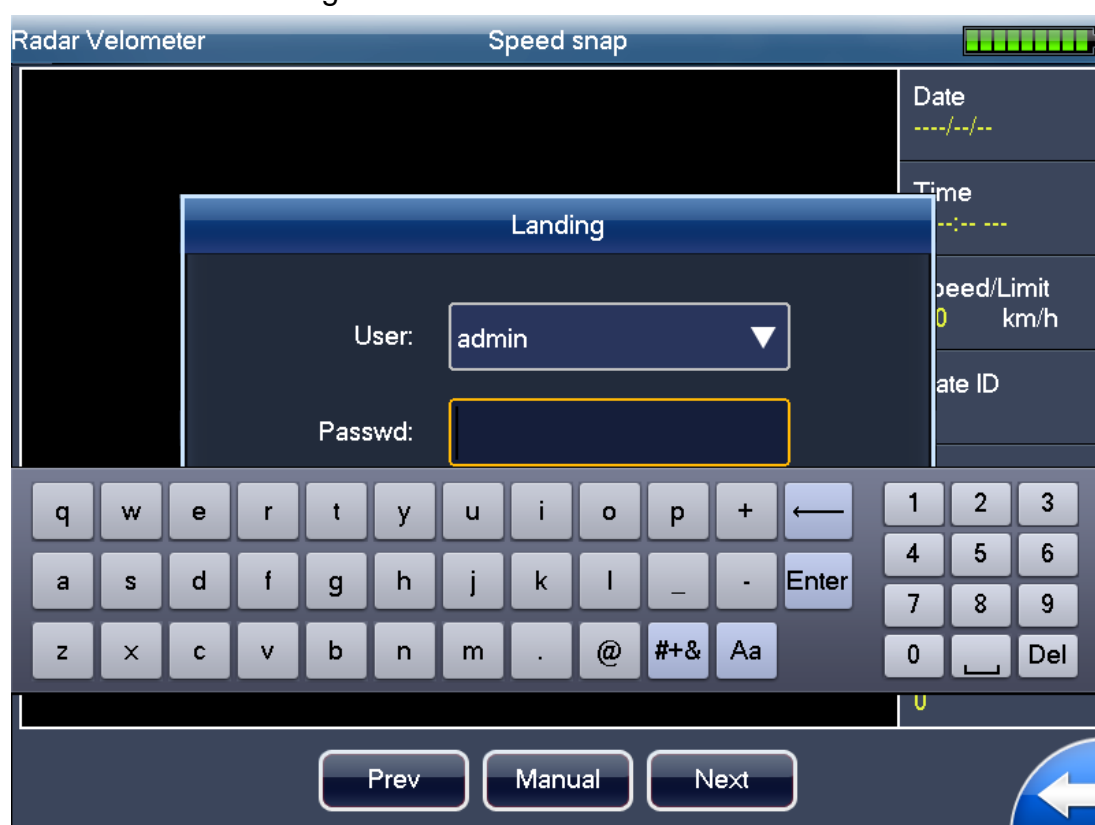


Figure 4- 2

4.2.2 Main Interface

The system main interface is shown as below. See Figure 4- 3.

It includes nine items: Flow Statistics, Road Monitoring, Log Management, Image Backup, Speed Snapshot, Image Queries, User Management, Sys Config and System Info.

Please click the corresponding item in the touch panel to go to the second menu. In the second menu interface, you can click the back icon at the right corner of the interface to go back to the main interface.

At the top right corner of each interface, you can see current battery capacity symbol. There are nine levels. The ninth level means the battery is full and the first level means the capacity is insufficient now; you need to stop work and recharge. You can see the corresponding dialogue box to prompt the insufficient battery when it reaches the third level.



Figure 4- 3

4.2.3 Speed Snapshot

After user login the system, enter the first interface which is speed snapshot. In this interface, it displays real-time snapshot and historical snapshot.

Parameter operation:

Main window shows currently snapshot vehicle image, on the right, there is current image parameter. The lower area is functional key area, from left to right are “previous”, “manual snapshot”, “next”, and “back”.

- **Date:** The image snapshot date.
- **Time:** The image snapshot time. The min unit is ms.
- **Speed and Speed limit:** The vehicle real-time speed when snapshot this image and the speed limit in the snapshot region. The unit is km/h.
- **Plate No:** Current snapshot plate number. This item is null if the automatically number plate recognition (ANPR) function is disabled.
- **Type/Lane:** Type and lane of current snapshot vehicle.
- **Over speed percentage:** speed of vehicle in snapshot over speed limit, in percentage such as 20%.
- **Total Today:** Total snapshot of today so far.
- **Previous:** Click it to view the previous image.
- **Next:** Click it to view the next image.
- **Manual snapshot:** Besides automatically snapshot as your set speed limit, system can also enable manual snapshot if you click this button. You can view the snap image in the displayed pane. The auto snapshot image and the manual snapshot image are both saved in the system special storage media.



Figure 4- 4

4.2.4 Road Monitoring

The road monitoring interface is shown as below. Here you can view vehicle real-time driving status. When you are debugging the system, you can go to the following figure to view the camera effect. See Figure 4- 5.

- **Brightness:** Please click “-” and “+” button to adjust the brightness. The value ranges from 0 to 100. The default value is 50.
- **Contrast:** Please click “-” and “+” button to adjust the contrast. The value ranges from 0 to 100. The default value is 50.
- **Manual:** Click it to snapshot current video and save it to the special storage media.



Figure 4- 5

4.3 Sys Configuration

4.3.1 Radar Setting

The radar setting interface is shown as in 错误！未找到引用源。 .

- **Radar Mode:** Set radar snapshot mode, there are three modes available:
 - ✧ Headstock, only snapshot head.
 - ✧ Tailstock, only snapshot tail.
 - ✧ Both, snapshot both head and tail.
- **Sensitivity:** Here is to set radar sensitivity. There are four levels. The fourth level has the highest sensitivity. The default setup is level 3.
- **Radar mode:** Set to enable/disable vehicle model differentiation.
- **Radar Measurement:** Set to enable/disable radar lane differentiation.
- **H Angle:** Adjust vehicle lane recognition accuracy, range -90~90, default is 22.
- **V Angle:** Adjust vehicle size recognition accuracy, range -90~90, default is 0.
- **MountHeight:** Set the mountheight.



Figure 4- 6

- **Low limit switch:** Set to enable/disable low speed measuring and snapshot. You can set low limit after enabled.
- **Low limit:** Set value of low limit. When vehicle in area is slower than this value, snapshot is on.
- **Big small vehicle speed limit:** Set to enable or disable the differentiation of speed trigger between big vehicle and small vehicle.
 - ✧ Select “No”, only display speed limit and trigger value, no differentiation.
 - ✧ Select “Big Small”, display big car speed limit, big car trigger, small car speed limit and small car trigger.
 - ✧ Select “All car”, display big car speed limit, big car trigger, medium car speed limit, medium car trigger, small car speed limit and small car trigger.
- **Speed limit:** Set device segment speed limit.
- **Trigger value:** Set radar over speed starting value, when radar detects that vehicle speed exceeding or equal to the set value, it snapshots.
- **Max speed:** The max speed supported by the device.



Figure 4- 7

Note:

Mounting distance: Set first lane distance from location where the device locates. This shall be based on actual distance. Recommend 150cm.

Lane width: Set lane width. Based on actual lanes, and do not fill in extra lanes. For example, if lane quantity is 6, then leave 4th, 5th and 6th lanes empty. Default is 0 cm.

Radar Velometer Sys Configuration

Radar Lanes Radar Setup Speedlimit Setup **Lanes Setup**

Camera Setup

OSD Setup

Intert Setup

Server Setup

Time Setup

FTP Setup

System Setup

Smart Setup

Black/Whitelist

Install Distance: 150 CM

First Lane Width: 375 CM

Second Lane Width: 375 CM

Third Lane Width: 0 CM

Fourth Lane Width: 0 CM

Fifth Lane Width: 0 CM

Sixth Lane Width: 0 CM

Default Save Cancel

Figure 4- 8

4.3.2 Camera Setup

The camera setting interface is shown as below. See Figure 4- 9.

- **Frame interval:** Time interval to trigger the second snapshot in one group of snapshot.
- **ANPR no.:** Set ANPR snapshot number and enable, 1~2 optional.
- **Under speed no.:** Set under speed snapshot number and enable, 1~3 optional.
- **Speeding no.:** Set over speed snapshot number and enable, 1~3 optional.
- **Run Red Light no.:** Set run red light snapshot number and enable, 1~3 optional.
- **Day/night mode:** There are three modes as brightness switch, color, B/W. When you select brightness switch, it will detect the environmental brightness to confirm color or B/W mode.

Radar Velometer Sys Configuration

Radar Lanes Snap Shutter Flash

Camera Setup

OSD Setup

Intert Setup

Server Setup

Time Setup

FTP Setup

System Setup

Smart Setup

Black/Whitelist

IFS: 1 ▼

ANPRNo.: 1 ▼ ☐ Enable

Under SpeedNo.: 2 ▼ ☒ Enable

SpeedingNo.: 2 ▼ ☒ Enable

Run Red LightNo.: 3 ▼ ☐ Enable

Day/Night Mode: Color ▼

Default Save Cancel

Figure 4- 9

- **Shutter:** Only support single shutter for now.
- **Exposure:** Manually input upper limit and lower limit via number keypad, range is 0 ~59880 microseconds, default is 0~800 microseconds.
- **Gain mode:** Set gain mode, may select auto gain or fix gain.



Figure 4- 10

- **Flash value:** brightness threshold. Flashlight is enabled when lower than this value. Default is 15.
- **Flash mode:** Set flashlight work mode, may select no flash, always and auto.



Figure 4- 11

4.3.3 OSD

The OSD setting interface is shown as in Figure 4- 12 and Figure 4- 13.

- **Section:** Please select address from dropdown list. You can load, add, modify and delete address.
The detailed address can be entered via WEB client, local keyboard. Violation location is shown on more than one page which can be viewed with scroll.
- **Road No.:** Please input the lane serial number here.
- **Direction:** Please select the road direction from the dropdown list. It includes five options: No direction/from the north to the south/from the south to the north/from the east to the west/from the west to the east.
- **Modify:** It includes two operations.
 - ✧ Add address: Please input the address in the edit column and then click the “Add” button, you can add the new address in the dropdown list.
 - ✧ Modify address: Please select one item from the dropdown list and then use the keyboard to edit. Please click the “Modify” button to complete the setup..
- **Load:** This series product supports the import operation from the USB storage media. Please insert the USB device and then click the “Import” button to update the address list.
- **Font color:** Set OSD font color: red or white. WEB support customized color.
- **Font size:** Set OSD font size, either 24x or 32x.
- **OSD option:** System supports the OSD function. You can check the box below to overlay the corresponding information in the image. The default setup includes thirteen items: time and date, address, plate, speed, direction, speed limit, radar direction, device SN, vehicle type, offence type, valid time and etc.

The screenshot shows the 'Sys Configuration' window for a 'Radar Velometer'. The 'OSD Setup' tab is active, showing fields for 'Location' (HWS), 'Road No.' (ab0123456789), and 'Direction' (South to North). Below these are buttons for 'Load', 'Add', 'Modify', and 'Delete'. Further down are input fields for 'Certificate No.', 'Auth Unit', and 'Search URL'. At the bottom, there are dropdowns for 'Font Color' (White) and 'Font Size' (24), along with 'Default', 'Save', and 'Cancel' buttons. A sidebar on the left lists other configuration options like 'Radar Lanes', 'Camera Setup', 'Intert Setup', 'Server Setup', 'Time Setup', 'FTP Setup', 'System Setup', 'Smart Setup', and 'Black/Whitelist'.

Figure 4- 12



Figure 4- 13

4.3.4 Network

The network setting interface is shown as in Figure 4- 14.

- **Host IP:** Here you can set host IP address.
- **Net mask:** Here you can set host subnet mask.
- **Gateway IP:** Here you can set host gateway.
- **DNS server1:** Here you can set host DNS preferred address.
- **DNS server2:** Here you can set host DNS alternate address.

The screenshot shows the 'Sys Configuration' window of the 'Radar Velometer' application. On the left is a vertical menu with options: Radar Lanes, Camera Setup, OSD Setup, Intert Setup (highlighted in orange), Server Setup, Time Setup, FTP Setup, System Setup, Smart Setup, and Black/Whitelist. The main area displays network configuration fields: Host IP (172 · 32 · 4 · 229), Netmask (255 · 255 · 0 · 0), Gatewayip (172 · 32 · 0 · 1), DNS server 1 (8 · 8 · 8 · 8), and DNS server 2 (8 · 8 · 8 · 8). At the bottom are 'Default', 'Save', and 'Cancel' buttons, and a blue back arrow icon in the bottom right corner.

Figure 4- 14

4.3.5 Server

The server setting interface is shown as in Figure 4- 15.

- **Function:** You can check the box here to enable or disable the server connection function.
- **Server IP:** Here you can input server IP address.
- **User Name:** Please input the user name to login the server.
- **Password:** Please input the corresponding password here to login the server.
- **Port:** Please input the server port number.

Radar Velometer Sys Configuration

Radar Lanes

Camera Setup

OSD Setup

Intert Setup

Server Setup

Time Setup

FTP Setup

System Setup

Smart Setup

Black/Whitelist

Function: ☒ Disable ☐ Enable

Server IP: 1 . 0 . 0 . 0

User Name:

Passwd:

Port: 0

Default Save Cancel

Figure 4- 15

4.3.6 Time

The time setting interface is shown as in Figure 4- 16.

- **Function:** You can check the box here to enable or disable the function.
- **Time server IP:** Please input NTP server IP address here.
- **Port:** Please input NTP server port number here. The default setup is 123.
- **Cycle:** It is the NTP auto synchronization period. The unit is minute and the default setup is 10 minutes.
- **Time zone:** Please time zone from the dropdown list. The default setup is GMT8 Beijing, Chongqing, Hong Kong, Urumqi.
- **Time set:** You can input manually to set the system time.

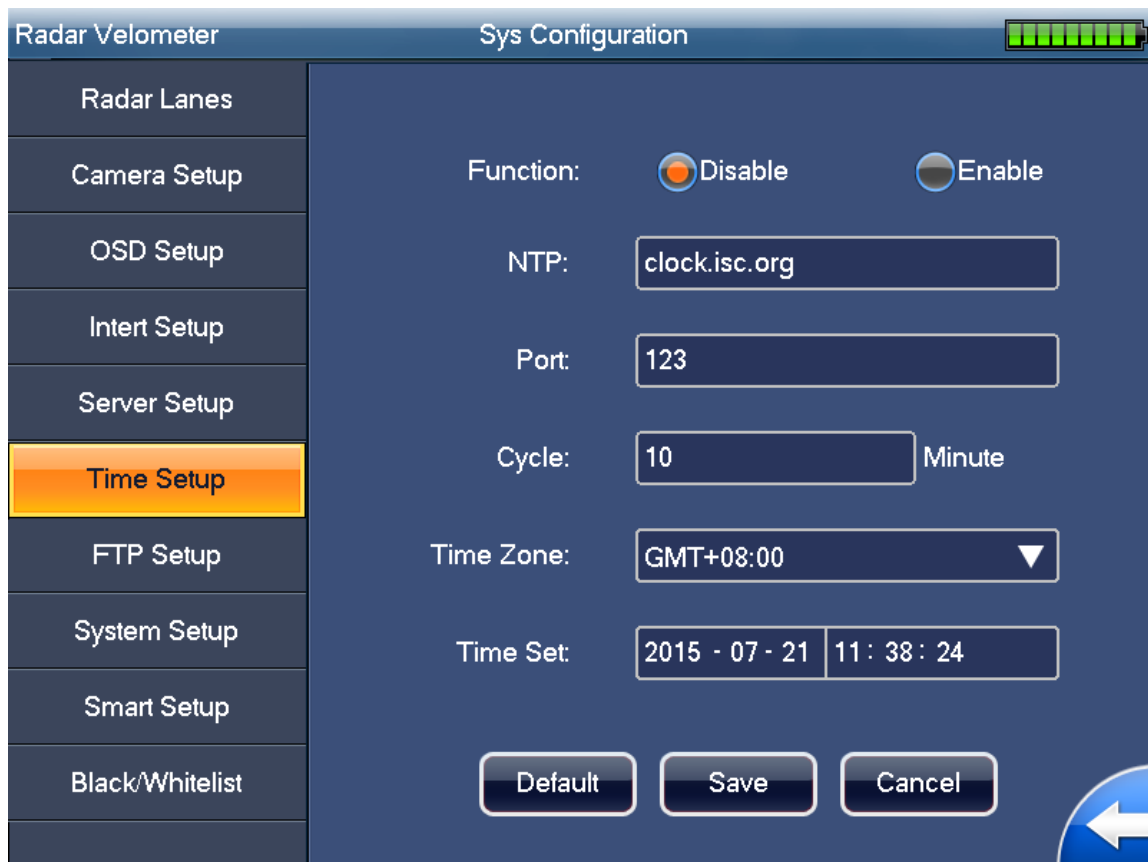


Figure 4- 16

4.3.7 FTP

FTP setting interface is shown as in Figure 4- 17.

- **Function:** You can check the box here to enable or disable the function.
- **FTP Server IP:** Here you can input FTP server IP address.
- **User Name:** Please input the user name to login the FTP server.
- **Password:** Please input the corresponding password here to login the FTP server.
- **Port:** Please input the server port number. The default setup is 21.

The screenshot displays the 'Radar Velometer Sys Configuration' window. On the left is a vertical menu with options: Radar Lanes, Camera Setup, OSD Setup, Intert Setup, Server Setup, Time Setup, **FTP Setup** (highlighted in orange), System Setup, Smart Setup, and Black/Whitelist. The main area is titled 'Sys Configuration' and contains the following settings:

- Function:** Two radio buttons are present: 'Disable' (selected, indicated by an orange dot) and 'Enable'.
- FTP Server IP:** A text field containing the IP address '10 · 10 · 10 · 10'.
- User Name:** A text field containing the username 'anonymity'.
- Passwd:** An empty text field for the password.
- Port:** A text field containing the port number '21'.

At the bottom of the main area are three buttons: 'Default', 'Save', and 'Cancel'. A blue arrow icon is visible in the bottom right corner of the window.

Figure 4- 17

4.3.8 System

The system interface is shown as in Figure 4- 18.

- **Sys maintenance:** It is to set system auto maintenance function and maintenance time. You can select from the dropdown list. The option includes: never/Sunday/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/everyday. The time ranges from 00:00 to 24:00.
- **Screen saver cycle:** It is to set the screen save period. The value ranges from 0 to 65535 minutes. The screen saver function is disabled if the value is 0.
- **Device name:** Please input device name here.
- **Radar number:** It is to set the radar serial number.
- **Traffic analysis:** You can check the box here to enable or disable the flow statistics function. The system begins the flow statistics for each passing vehicle and displays the results in the flow statistics interface.
- **Picture quality:** Set image quality. There six levels. Default value is better.
- **Picture size:** Set picture encoding size, range 50~1024. The higher the size, the better the quality will be. Default is 300.
- **Auto login:** Set to enable auto login. When you enable it, select username and input corresponding password, then user will auto login when device boots up for next time.

The screenshot shows the 'Sys Configuration' window for 'Radar Velometer'. The 'System Setup' tab is selected in the left sidebar. The configuration fields are as follows:

Field	Value
Sys Maintenance	Every Day (dropdown), 02:00 (dropdown)
Screensaver Cycle	10 Minute
Devicename	HWS
Radar Number	ab0123456789
Traffic Analysis	Disable (radio button)
Picture Quality	better (dropdown)
Picture Size	300 (input), 50~1024KB (range)
AutoLogin	Disable (radio button)

At the bottom of the window are three buttons: 'Default', 'Save', and 'Cancel'. A blue back arrow is located in the bottom right corner.

Figure 4- 18

4.3.9 Intelligent

The intelligent interface is shown as in Figure 4- 19.

- **License plate rec:** You can check the box here to enable or disable the plate recognition function. System automatically recognizes the plate number and plate color after snapshot if you enable this function here.
- **Local word:** It is the short name of your local place.
- **License recognition area:** Please highlighted the areas for the recognition algorithm to positioning and recognize the plate. Yellow area means to recognize plate.

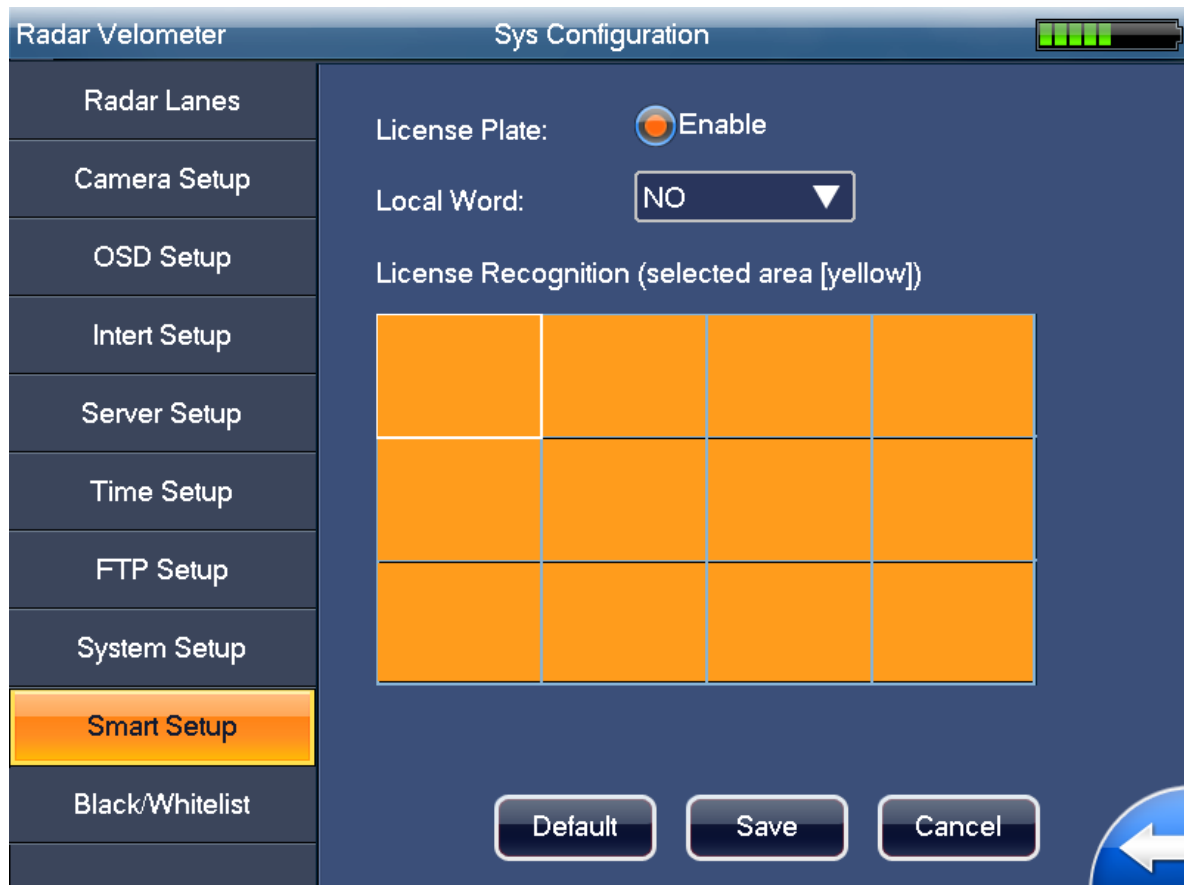


Figure 4- 19

4.3.10 White/Black List

The trusted/black list interface is shown in Figure 3-18 and Figure 3-19.

Input plate no.: Enter plate no. of vehicle to search. Support fuzzy search.

Query: Display search result.

White/Black list enable: Enable or disable this function.

Load white/black list: Support USB import of these lists from USB. Insert USB disk, click Load button.

Export white/black list: Support USB export of these lists to USB. Insert USB disk, click Export button.

Add white/black list: Enter plate no., vehicle owner name and select vehicle type to add.

Note: White/black list has strict format, and you can refer to format of previous list.



Figure 4- 20



Figure 4- 21

4.4 Image Queries

- Search by time

The interface is shown as in Figure 4- 22.

There are four time periods: one day/three days/one week/all. It also supports customize setup. Please click the “Custom” button to set.



Figure 4- 22

- Search by speed range

The interface is shown as in Figure 4- 23.

There are three items: speed <50%, speed >50 % (including 50%) and all. It also supports customize setup. Please click the “Custom” button to set.



Figure 4- 23

- Search by Blacklist

The interface is shown as in Figure 4- 24.

There are four time periods: one day/three days/one week/all. It also supports customize setup. Or you can click the “Custom” button to customize.



Figure 4- 24

In Query interface, you can see the image SN, snapshot time, speed, and vehicle plate and vehicle type.

System displays the 8 records in one screen by default. You can use the previous/next button to view more images.

- After you select one image, the two snapshot images will be displayed in the thumbnail pane from the left to the right at the top pane.
- Here you can check the one or more images to delete or export.
- You can check the box before the “No” item to select all 8 images.

See Figure 4- 25.

Radar Velometer

Search Result

Time
17:04:13

Date
2015-07-15

Speed Limi
20 km/h

Speed
0 km/h

<input type="checkbox"/>	NO.	Time	Speed (km/h)	Plate	Vehicle Size
<input type="checkbox"/>	1	2015-07-13 22:09:23	0		Unknown
<input type="checkbox"/>	2	2015-07-13 22:13:45	0		Unknown
<input type="checkbox"/>	3	2015-07-13 22:14:34	0		Unknown
<input checked="" type="checkbox"/>	4	2015-07-15 17:04:13	0		Unknown
<input type="checkbox"/>	5	2015-07-15 17:05:12	0		Unknown
<input type="checkbox"/>	6	2015-07-15 17:05:38	0		Unknown
<input type="checkbox"/>	7	2015-07-15 17:05:56	0		Unknown
<input type="checkbox"/>	8	2015-07-15 17:06:18	0		Unknown

1/6Page 50Pic

Prev

Next

Export

Figure 4- 25

4.5 Image Backup

The image backup includes three modes: Backup by time (Figure 4- 26)/backup by speed (Figure 4- 27)/backup by blacklist (Figure 4- 28).

Backup by time and backup by speed are USB backup.

During the backup process, you can see the corresponding process bar for your reference.

System pops up the dialogue box when the backup completed.

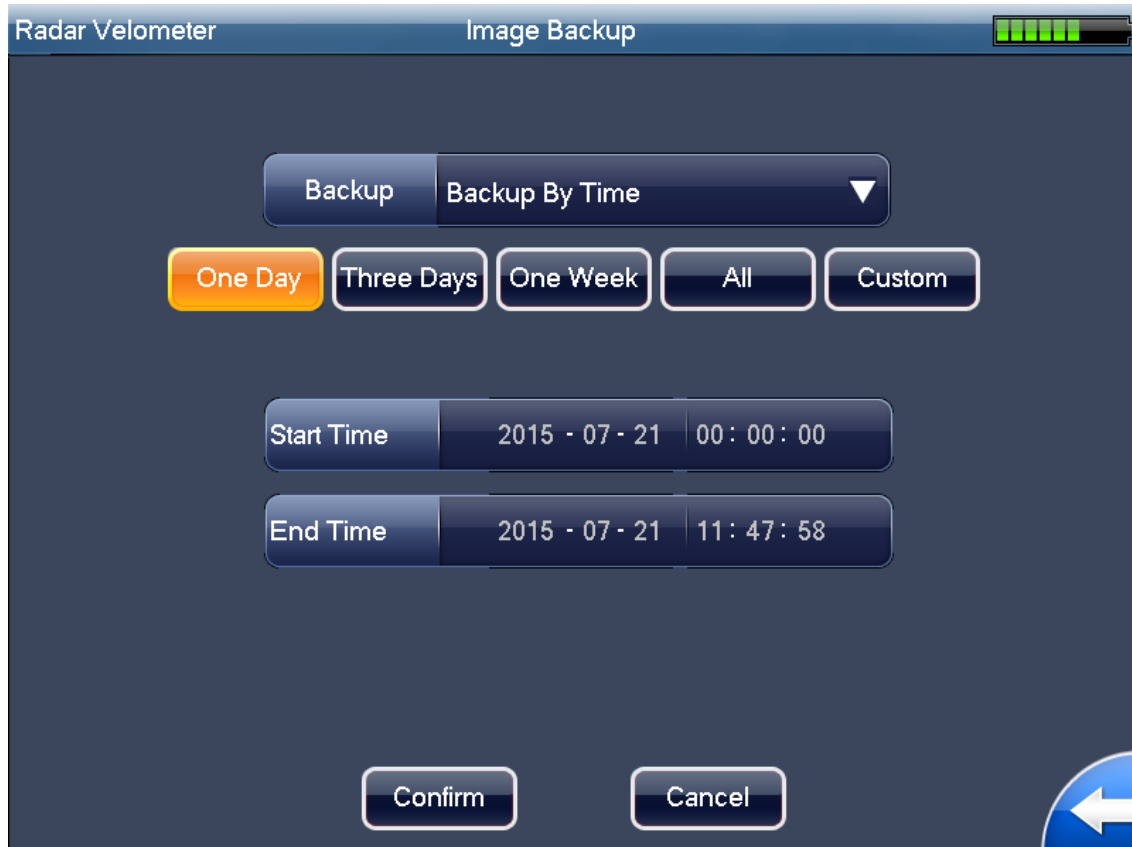


Figure 4- 26



Figure 4- 27



Figure 4- 28

4.6 System Information

4.6.1 Version Information

The device status interface is shown as below. See Figure 4- 29.

- **Software version:** Here you can view the software main version including the compile date.
- **Hardware version:** Here you can view the hardware main version.
- **GUI version:** Here you can view the GUI module version.
- **Web version:** Here you can view the Web module version.
- **Radar version:** Here you can view radar version. Disconnected radar or abnormal radar will show as offline.
- **Upgrade:** The system supports software upgrade function via the local USB media. Please copy the binary upgrade file to the root of the USB media and rename it as “update.bin”. Insert the storage device to the UBS port of the speed measuring device and then click the “upgrade” button to begin the update process. Please follow the prompt information displayed in the screen to complete.



Figure 4- 29

4.6.2 Device Information

The device information interface is shown as below. See Figure 4- 30.

- **Device type:** The default type is HWS800A.
- **Device SN:** It is the device serial number when it shipped out of the factory. Please note it is read-only.
- **Radar SN:** It is the corresponding radar serial number. It can input in the system setup interface. You can refer to the metal plate at the side panel of the speed measuring system for the device SN and the radar SN information.

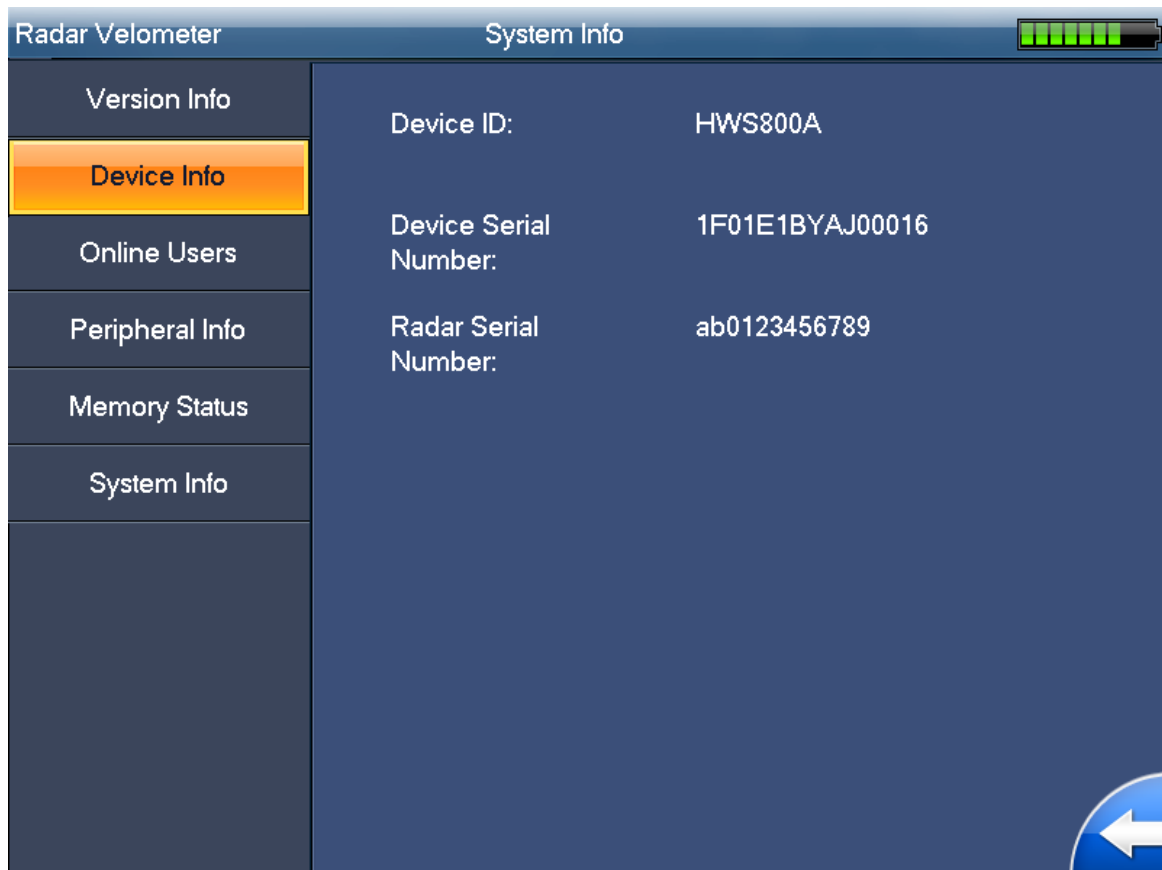


Figure 4- 30

4.6.3 Network Status

Click the “Network status” button; you can see an interface shown as in Figure 4- 31. Here you can view network connection information including the user name, IP port and user type. The user type includes: WEB, network upgrade tool and platform software.



Figure 4- 31

4.6.4 Peripheral Device Information

Click “Peripheral device information” button, you can see an interface is shown as in Figure 4-32.

- **Radar:** It is the radar working status of current speed measuring system. It displays as OK when the radar works properly. It is shown as “Offline” when the radar is malfunction or the system can not find the radar.
- **Camera:** It is the camera working status. It displays as OK when the camera works properly. It is shown as “Offline” when the camera is malfunction or there is no bit stream.

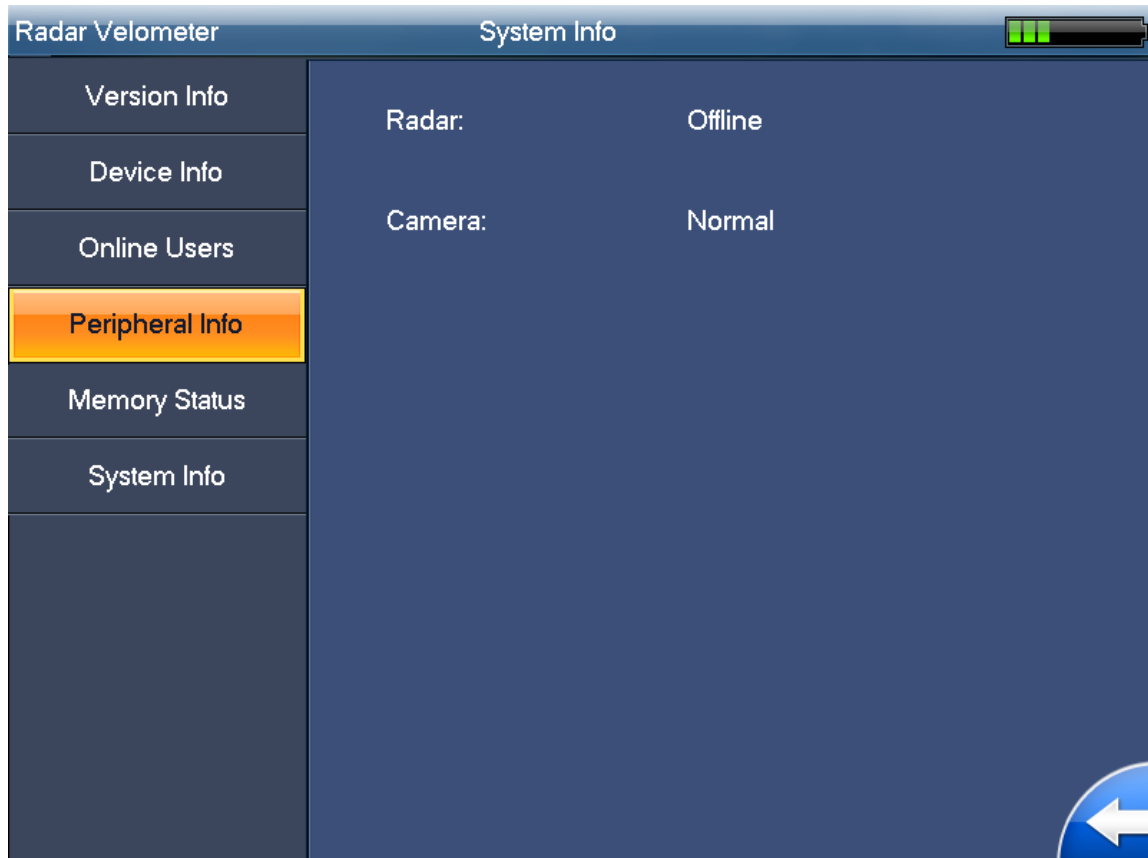


Figure 4- 32

4.6.5 Storage Status

Click “Storage status”, system pops up the following interface. See Figure 4- 33.

- **Storage type:** Select display HDD or USB disk info.
- **Pic remainder space/capacity:** Display picture storage total capacity and free space.
- **Video remainder space/capacity:** Display record storage total capacity and free space.
- **Picture number:** Here you can view system saved picture amount.
- **Memory status:** Whether memory is normal or abnormal.
- **Format:** Format SD card.

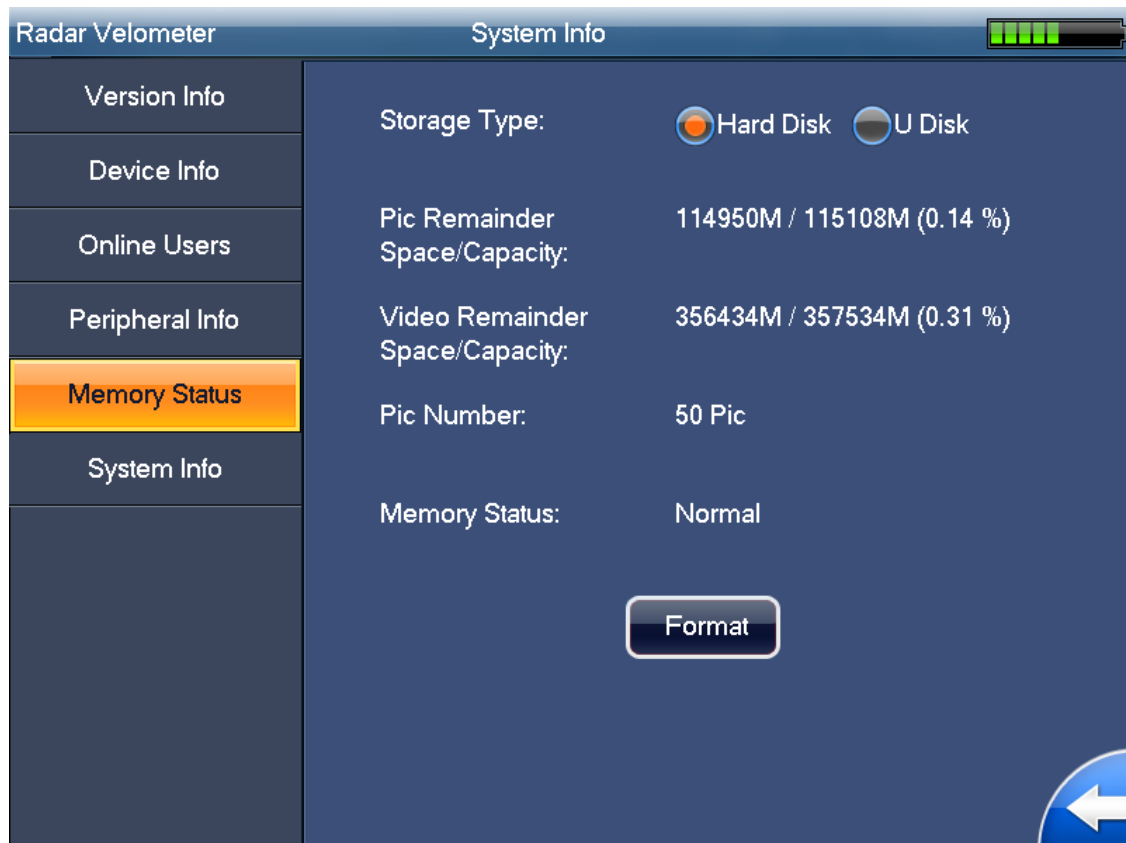


Figure 4- 33

4.6.6 System Information

The system information interface is shown as in Figure 4- 34.

- **CPU usage:** Here you can view current CPU usage status. It is shown as XX.XX%.
- **Memory usage:** Here you can view current memory usage status. It is shown as XX.XX%.
- **Device temperature (°C):** Here you can view system current working temperature. It is shown as XX.XX°C.

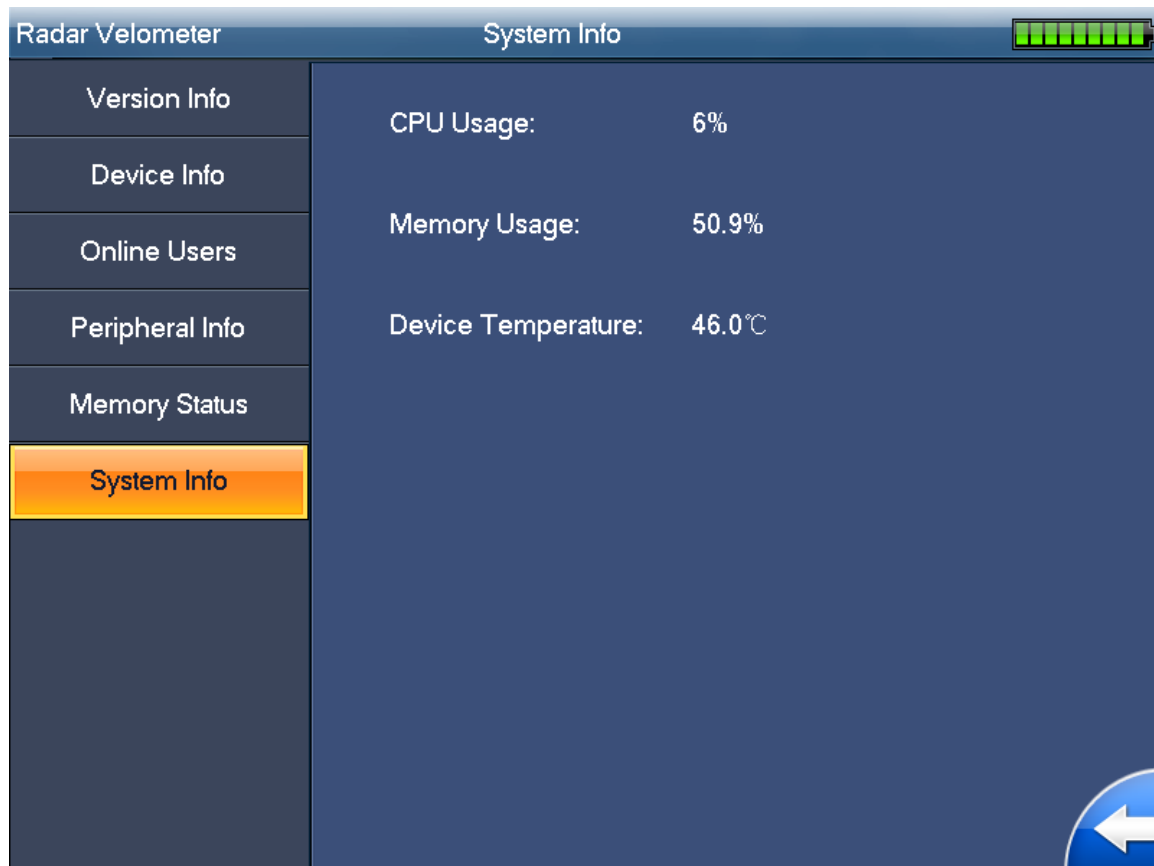


Figure 4- 34

4.7 Traffic Flow

The traffic flow statistics has two modes: by time (unit:: second) and by speed range. See Figure 4- 35 and Figure 4- 36. You can refer to the Image search interface for detailed information.

- One is by time, accurate to second.
- The other is by speed. The interface is similar to image queries interface.



Figure 4- 35



Figure 4- 36

The traffic flow statistics result is shown as in Figure 4- 37. It displays in column diagram. System supports export via the USB device. You can insert the flash disk to the USB port and then click the “Export” button to export current statistics results in txt file.

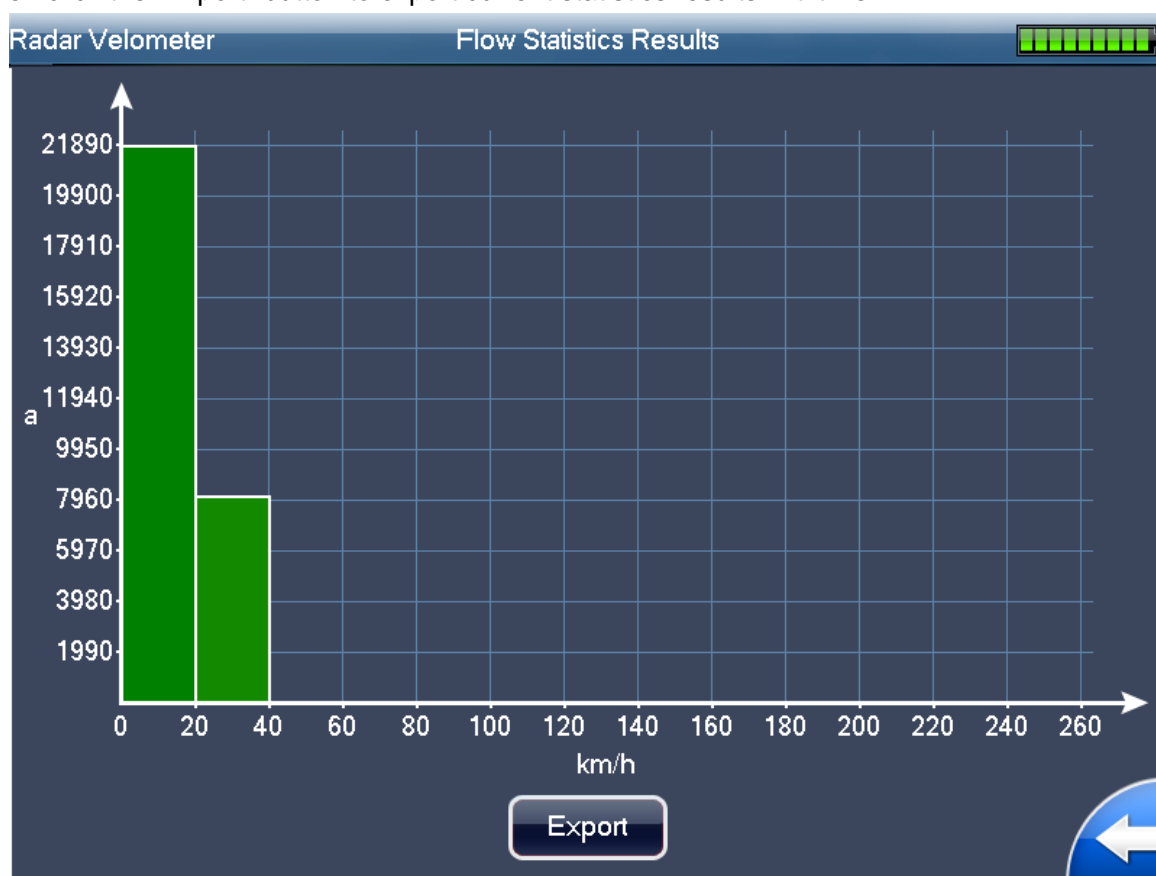


Figure 4- 37

4.8 Log

System supports two log search modes: search by time period (Figure 4- 38) and search by user name (Figure 4- 39).

- One is by time, accurate to second.
- The other is by user.

For search by user, usernames are shown in list format.

In Figure 4- 40, you can select the user name from the dropdown list.



Figure 4- 38



Figure 4- 39

The log search results interface is shown as in Figure 4- 40.

The searched results displayed in a sheet. There are total four columns: SN, time, details, and user name. There are 16 items in one screen. You can use the “Previous” and “Next” button to view more logs.

Important

Clear function here is to delete all logs in the system. Before the operation, please make sure you really want to remove all logs!



NO.	Time	Log Type	User
1	2015-07-21 11:52:04	LogIn	admin
2	2015-07-21 10:55:15	LogIn	admin
3	2015-07-21 10:54:53	LogIn	admin
4	2015-07-20 15:44:04	LogOut	admin
5	2015-07-20 15:38:44	SaveConfig	admin
6	2015-07-20 15:38:23	SaveConfig	admin
7	2015-07-20 15:38:23	SaveConfig	admin
8	2015-07-20 15:38:03	LogIn	admin
9	2015-07-20 15:28:20	LogIn	admin
10	2015-07-20 15:28:17	LogOut	admin
11	2015-07-20 15:22:55	LogIn	admin
12	2015-07-20 15:22:52	LogOut	admin
13	2015-07-20 15:06:00	LogIn	admin
14	2015-07-20 15:05:58	LogOut	admin
15	2015-07-20 15:04:56	LogIn	admin
16	2015-07-20 14:46:14	LogOut	admin

Figure 4- 40

4.9 User Management

The user management interface is shown as in Figure 4- 41. It includes the following information:

- **Group:** It is the user group name the user belongs to. There are two levels: admin/user.
- **User state:** It includes two types: online/offline. It is shown as online after the user logged in the system. Otherwise it is shown as offline.
- **Remarks:** Here is some note information when you are adding current user.
- **Functions:** There are four functions: usermod, add user, delete user and logout. Logout will make logged in user offline.



Figure 4- 41

5 Installation and Maintenance

5.1 Device Installation

5.1.1 Installation

- Take the device out of the box.
- Insert the Lithium battery.
- Put the device on the tripod and adjust to the proper height.
- Push the power button to boot up the device.

5.1.2 Camera Debugging

- Go to the Road Monitor interface.
- Adjust the lens iris according to the actual environment.
- Adjust the lens focus distance and definition to the proper effect.

Important

Please adjust the lens focus distance to make the middle lane clear. For example, there are three lanes, and then you can adjust the lens to clearly snapshot the second lane.

5.1.3 Radar Debug

- The device shall be installed from one to three meters away of the road.
- The device and the road angle shall be 22°(approaching), 25°(departing) and 25°both).

Important

Set angle must match actual angle.

5.2 Device Maintenance

5.2.1 Before Using Touch Screen

- For long-term use, turn on the screen saver mode.
- Do not touch the screen for a prolonged period direct sunlight environment.
- Click touch screen, do not use sharp objects, and do not use excessive force to prevent physical damage to the touch screen.
- Do not put other items on the touch screen.

When you clear the touch screen please follow these methods:

First, to prevent a rough cloth or paper items scratches on the screen, use a soft, non-fibrous materials such as cotton, paper and dip a little shot glass cleaner (do not use alcohol, a class of chemical solvents) Gently wipe them clean.

Note:

Use a cloth moistened with cleaning agents to wipe. Do not spray cleaning agents directly to the display screen surface.

5.2.2 Use of Lithium Batteries and Maintenance Instructions

- Ambient temperature higher than 60 °C Do not use lithium batteries; when the ambient temperature around 0 °C, use 2/3 electricity shortage, when the ambient temperature around -10 °C, using a drained 1/3; for lithium batteries at temperatures between 0 °C ~ 45 °C.
- Do not over-discharge lithium battery, when the battery warning, please charge.
- Long without lithium may reduce the internal activities, when re-use, please contact the first charge operations, extend the charging time, the charger into blue lights continue to charge after a period of time and then pull out to use, and about 3 times a full charge Running discharge can work properly.
- Long-term non-use of the battery, filled with a predetermined amount of power to prevent the battery from over discharge caused damage in the storage medium, and a cool place to weaken its own internal passive reaction speed of.

5.2.3 Before Using Radar

- Radar can not have a large area of metal in front of it.
- Radar front can not have the presence of a strong magnetic field.
- Radar surveillance road had better not to have uneven pavement.
- Do not use excessive shock or extrusion on surface media of the radar.

5.2.4 Use of Camera and Maintenance Instructions

- Do not put the camera facing the sun. Whether indoors or outdoors, it does not operate next to spotlight or other light or reflect light.
- Do not use strong detergents when cleaning the camera; please use a soft, dry cloth to wipe fingerprints or dust. Remove dust from the lens with a blower. With a soft, dry cloth to wipe the body, if the pollution is very stubborn, use a cloth dipped in a small amount of neutral detergent, then wipe dry.

Note

- **This user's manual is for reference only. Slight difference may be found in user interface.**
- **All the designs and software here are subject to change without prior written notice.**
- **If there is any uncertainty or controversy, please refer to the final explanation of ours.**
- **Please visit our website for more information.**