Radar Speed Measurement Snapshot System (WEB 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-3D 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-3D 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-3D 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 snapshoot 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-3D 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 ≤ ± 1 °; 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-3D 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-3D radar speed measurement

Figure 3- 2 HWS800A-3D radar speed measurement 2

Figure 3- 3 HWS800A-3D radar speed measurement 3

3.3 Panel and Ports

3.3.1 Right Panel

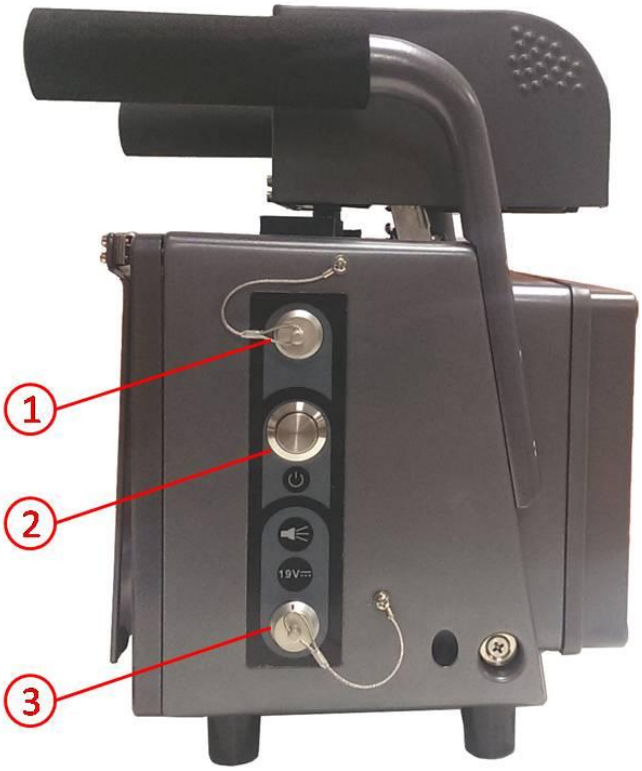

Figure 3- 4

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 abnormity. 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 Login

Use Internet Explorer to visit device IP address, you can see Login interface.

Figure 4- 1

At first time login, please set login password.

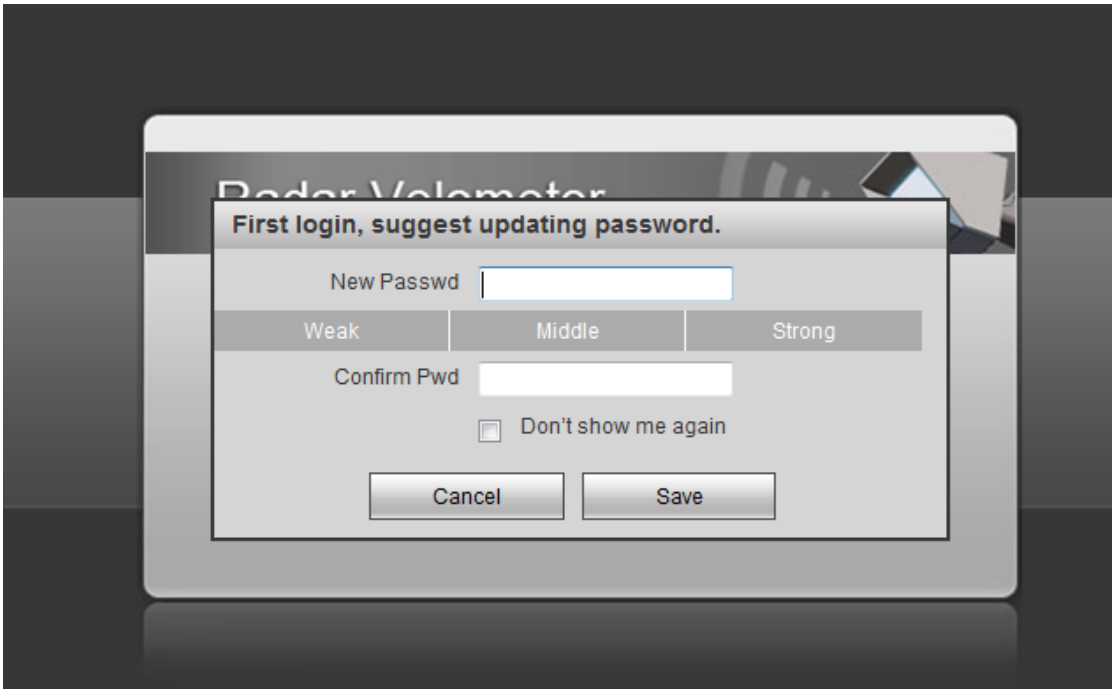

Figure 4- 2

4.3 Preview

After you successfully login WEB, you can operate the radar speed measurement system via WEB. You will first enter Preview interface.

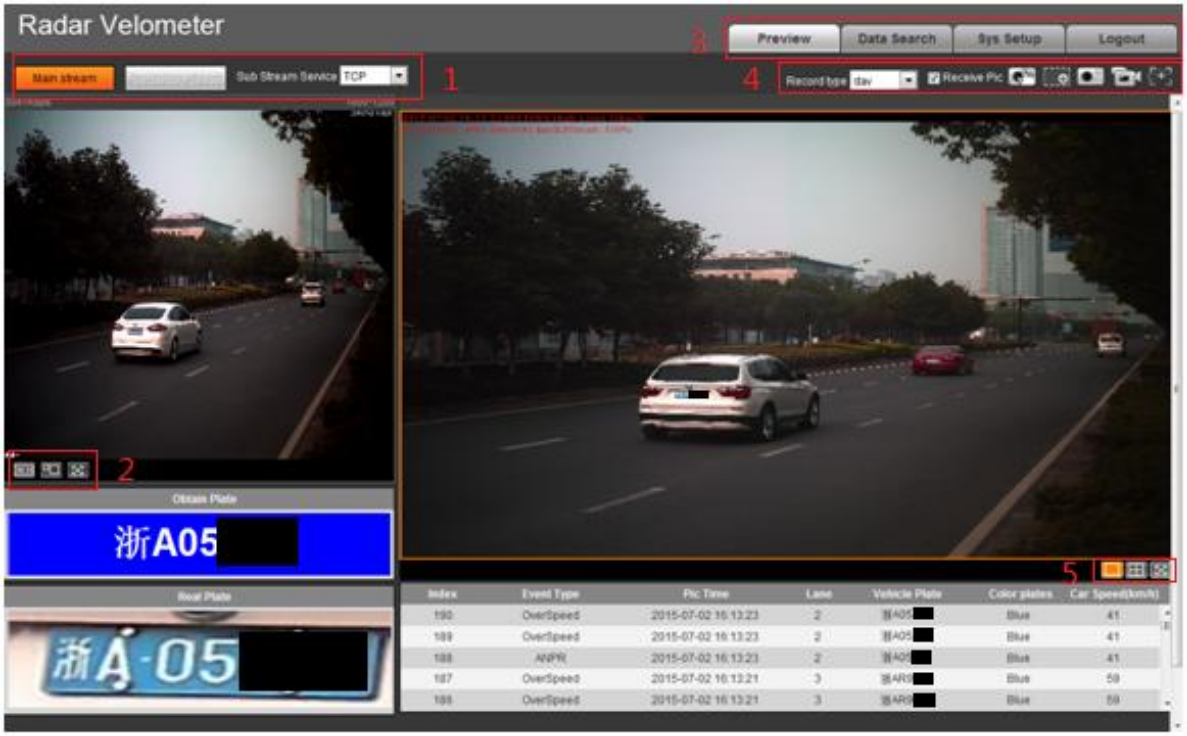

Figure 4- 3

- Section 1: Video bit stream bar
- Section 2: Preview window switch

- Section 3: System menu
- Section 4: Common function bar
- Section 5: Monitor window switch

4.3.1 Video Bit Stream Bar

T he video bit stream bar interface is shown as in Figure 4- 4.

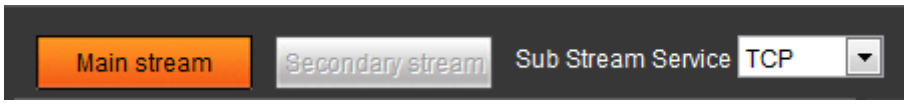

Figure 4- 4

Please refer to the following sheet for detailed information.

Parameter	Function
Main stream	You can use main stream to record video record, network monitor function under normal network environment. You can set resolution within its supported range.
Extra stream	It is a substitute for main stream under insufficient band width. Note: Currently not available.
Protocol	Select video monitoring protocol, currently support TCP only.

4.3.2 Preview Window Switch

The preview window switch interface is shown as in Figure 4- 5.

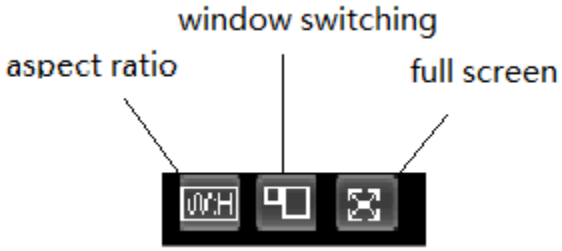

Figure 4- 5

-  ---- Aspect ratio, adjust image to original size or best fit.
-  ----Window switch to large window and display adjusting window.
-  ----Full screen display.

4.3.3 System Menu

System menu is shown as in Figure 4- 6.

The menu includes Preview, Data Search, Sys Setup and Logout.

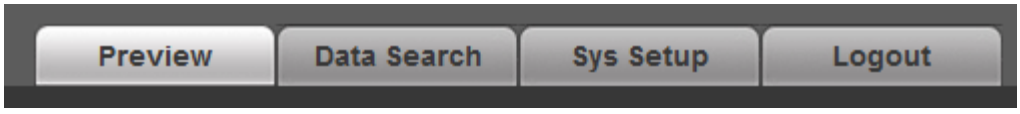

Figure 4- 6

4.3.4 Common Function Bar

The common function bar interface is shown as in Figure 4- 7.

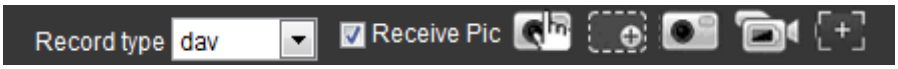

Figure 4- 7

Please refer to the following sheet for detailed information.

Parameter	Function
Record Type	Select record format, default is dav format.
Receive Pictures	Check it to automatically receive pictures via snapshot, RS485, RS232, and video detect. Record plate, vehicle color, speed and other info and display them in window.
Manual Snapshot	Click on the button to snapshot. Snapshots are saved based on setup in "Setup->Camera->Video->Path".
Zoom in	Click on the button to zoom in with left mouse. Right click to exit.
Snapshot	Click on the button to snapshot current picture and save it.
Record	Click on the button to record. Record file is saved based on setup in "Setup->Camera->Video->Path".
Easy Focus	Click on the button to focus. You can see AF peak and AF max. The closer the AF max and AF peak the better the focus effect.

4.3.5 Monitor Window Switch

The monitor window switch interface is shown as in Figure 4- 8.

Figure 4- 8

-  ----Display in single window.
-  ---- Display in four windows.
-  ---- Display in full screen.

4.4 Search

In system menu on WEB, open search function, you can search picture and record here.

4.4.1 Picture Query

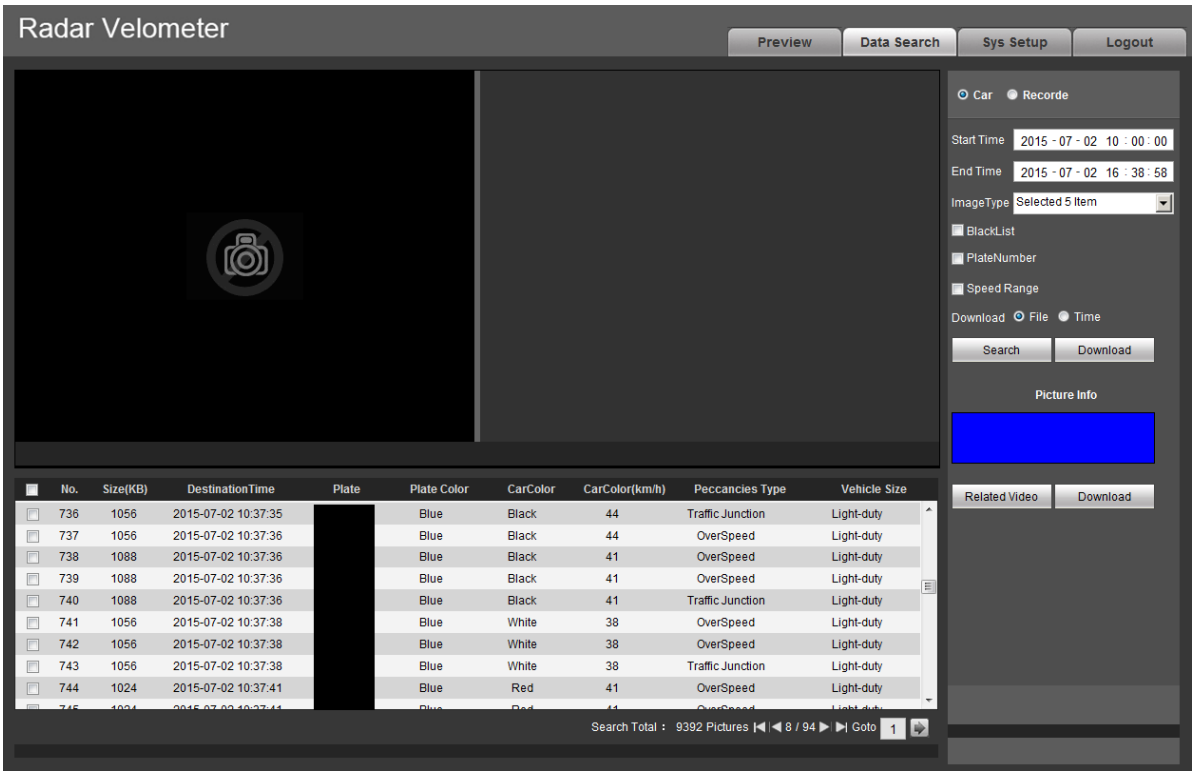

Figure 4- 9

Step 1. Set picture search parameter. In parameter list, set picture start time, end time, event type, click Search. File list shows all picture files with matched criteria.

Please refer to the following sheet for detailed information.

Parameter	Function
Start time	Set start time of picture to search.
End time	Set end time of picture to search.
Image type	Search by violation event type.
Blacklist	Filter via blacklist.
Plate Number	Search by plate number.
Speed range	Search by speed range.
Search	Click on the button, all matched files will be displayed in file list.
Open	Select designated picture, single click on open button.
Watermark	Before user select watermark here, please go to “Sys Setup>Camera>Video” and enable watermark function. Set contents of watermark, default content is “DigitalCCTV”.

Step 2. Select the need to download images from the file list, click "Download."

In the pop-up picture Save dialog box, set the image saving path, start the system image is downloaded to the local PC.

- Select picture(one or more, as batch download), click download button, system pops up save box.

- User input picture name in the box, press save button to start to download. You will see progress of downloading, and you can click stop button to stop.

Step 3. When picture download is complete, click OK.

Step 4. Click Related Video, you can open related video of the picture. If you want to download record, click Download.

4.4.2 Record Search

You can search record on device according to time and channel.

Step 1. Click Record.

Step 2. Select search time and channel, click Search.

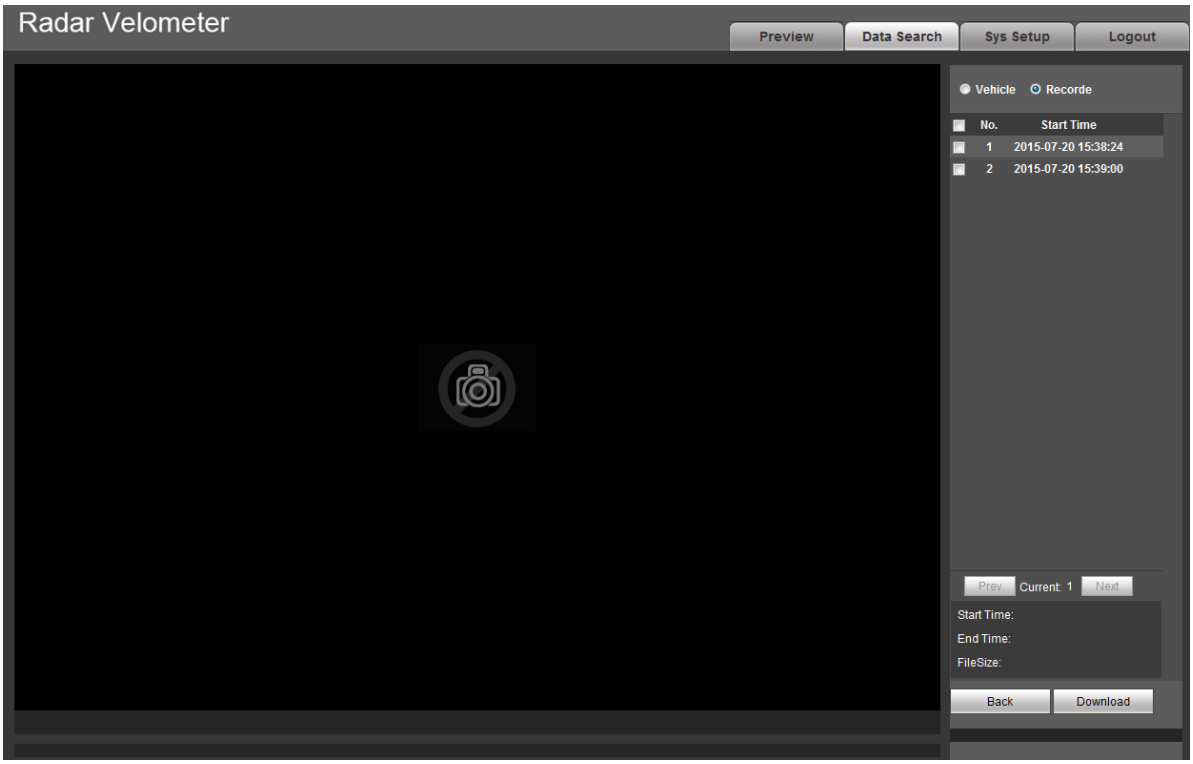

Figure 4- 10

Step 3. Double click one result, system will auto play the record.

You also can click stop, quick play and play in tool bar.

Step 4. Check record, select download type, download the record according to prompt.

- By file, select one or more records in search result and click Download.
- By time, download all records within period between start time and end time, click Download.

4.5 Sys Setup

4.5.1 ITC

Snap Cutout

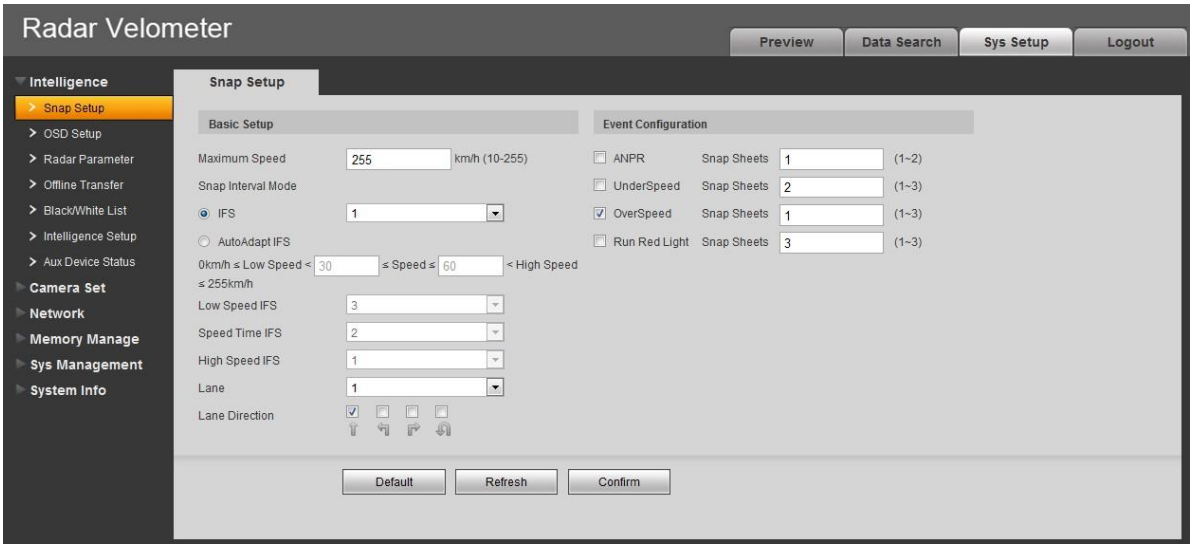

Figure 4- 11

Parameter	Item
Maximum Speed	Max speed supported by device measurement.
Capture Interval Mode	Select interval of frame, or customized low speed, speed and high speed.
ANPR	Set ANPE snapshot picture number and enable, 1~2 pic available
Under Speed	Set under speed snapshot number and enable, 1~3 pic available
Over Speed	Set over speed snapshot number and enable, 1~3 pic available
Run Red Light	Set over run red light snapshot number and enable, 1~3 pic available
Lane/Lane Direction	Set lane direction, support options of straight, left turn, right turn, and u-turn, used for running red light snapshot.

OSD Config

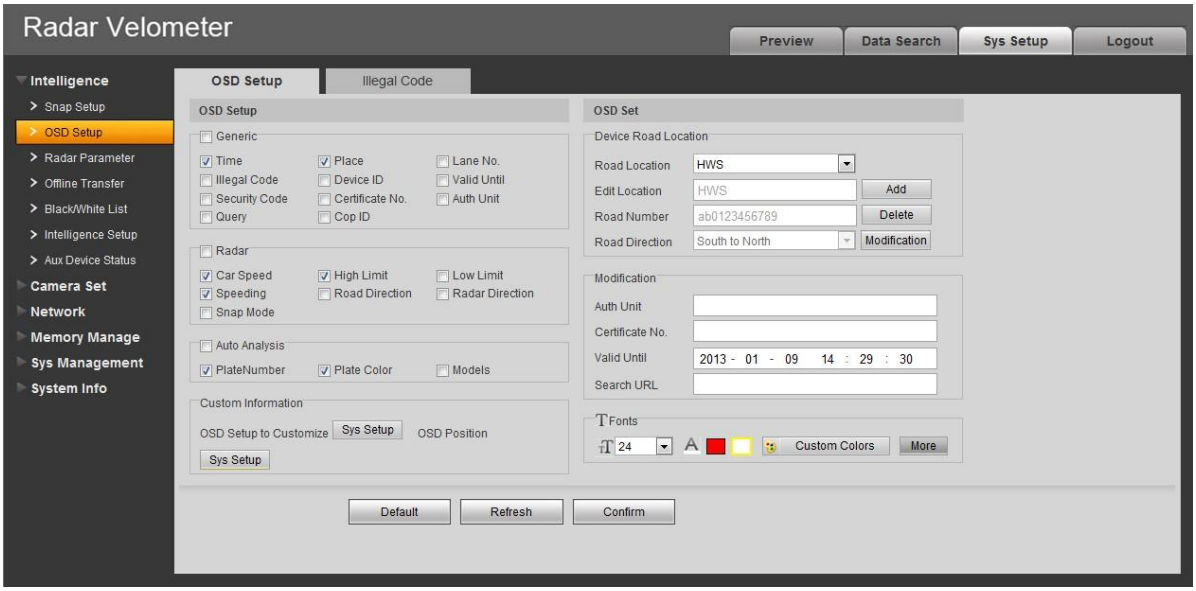

Figure 4- 12

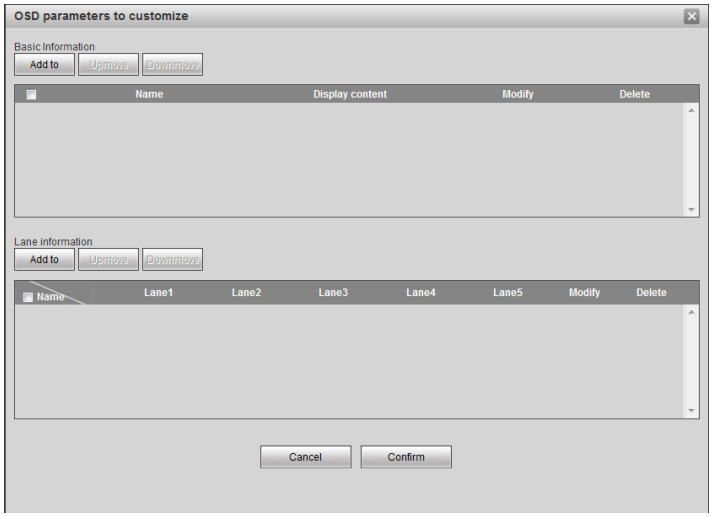

Figure 4- 13

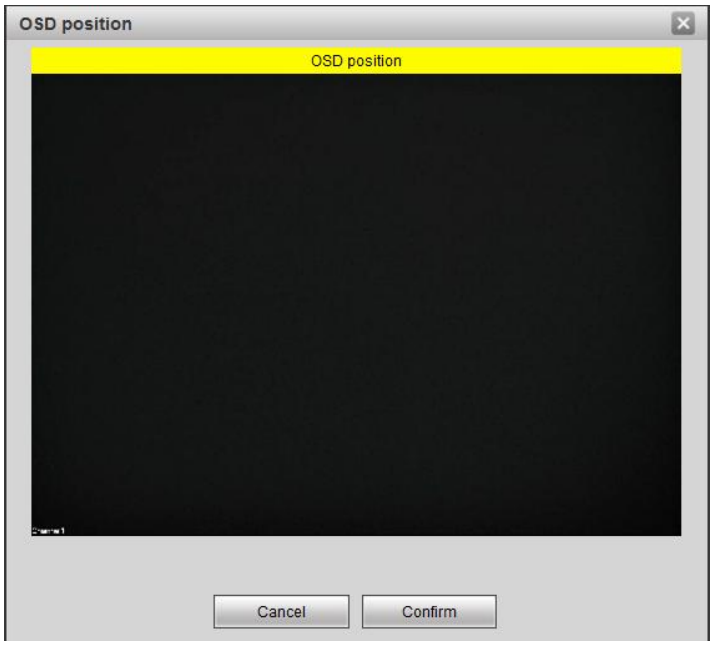

Figure 4- 14

Parameter	Note
OSD Parameters	Set OSD menu display item.
OSD Set	Set segment path, check related info and font color and size.
Custom Info	May customize OSD, overlay some fixes OSD info on picture according to need, max add 5 items. OSD position setup is to move up and down as a whole, cannot set position of individual item.
OSD Font Set	Adjust font size and color, besides font color of red, white, you also can customize setup.

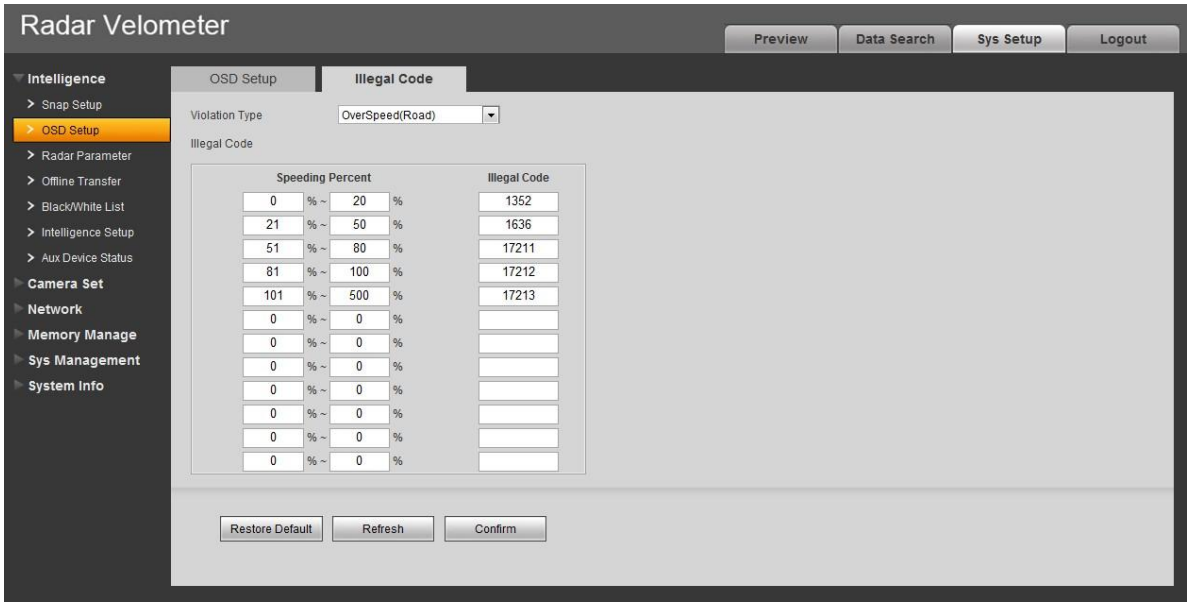

Figure 4- 15

Parameter	Note
Illegal Type	Select ordinary road or highway and overspeed or underspeed.
Illegal Code	You can define over speed percentage for ordinary road and highway separately.

Radar Parameter

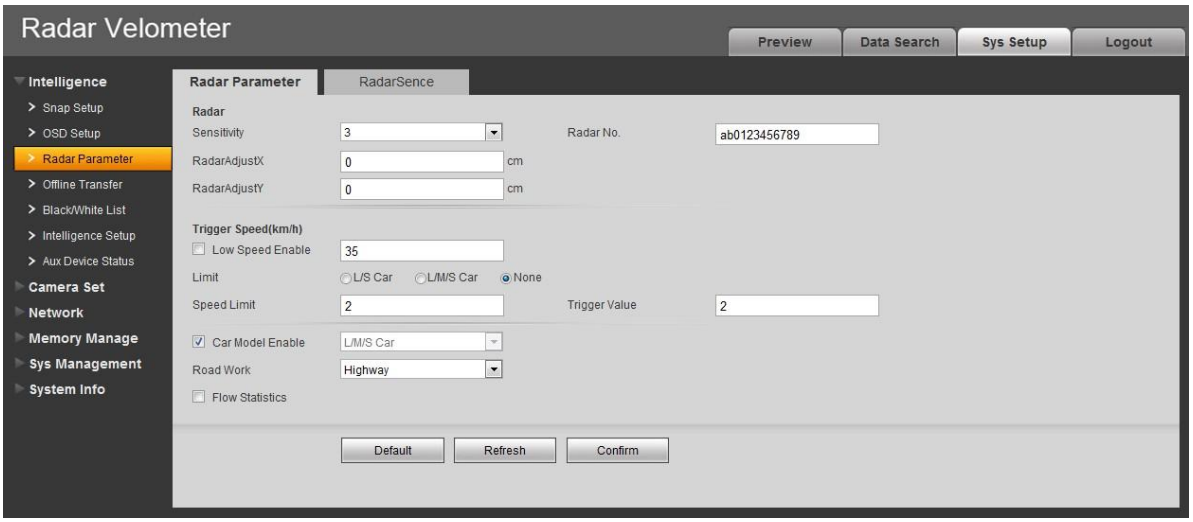

Figure 4- 16

Parameter	Note
Sensitivity	Set radar sensitivity, four level adjustable, level 1 has min sensitivity, and level 4 has max sensitivity. Default level is 3.
Radar No.	Set radar no. function, set the radar no. on metal plate into system.
RadarAdjustX	Set 3D radar X coordinate offset, it is do not set by default.
RadarAdjustY	Set 3D radar Y coordinate offset, it is do not set by default.
Low Speed Enable	Setting whether to open low speed measurement and capture function; when the opening function, you can set a low limit values.
Speed Limit	Setting the section where the speed limit values specified equipment for illegal basis.

Parameter	Note
Trigger Value	Radar speed setting starting value, when the radar detects a vehicle speed is equal to or greater than the set value of the vehicles at capture....
Car Type Enable	Set whether to open the radar differentiate vehicle models function.
Road Work	Set violation code type, may select ordinary road or high way road.
Vehicle Traffic Statistics	Enable this function, system count every vehicle passing the monitored road, and result will be shown in graph format; disable this function, it will not count traffic.

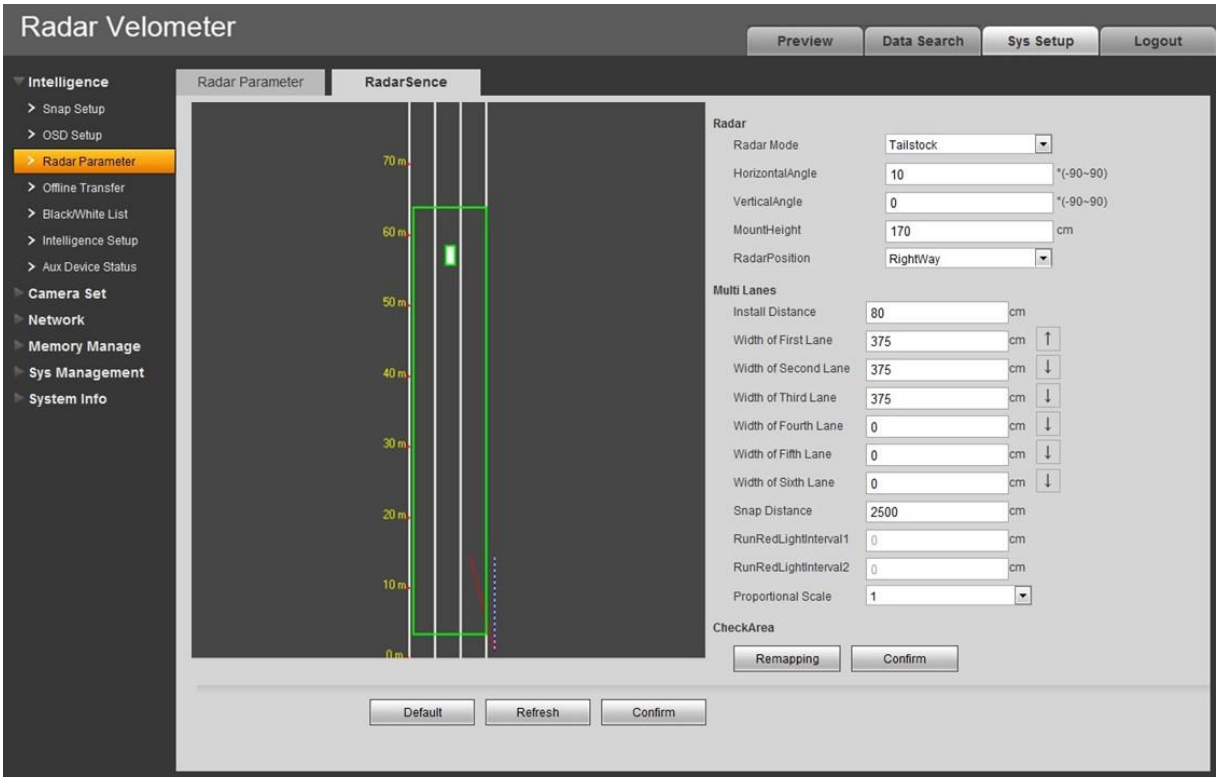

Figure 4- 17

Parameter	Note
Detection Direction	Yu can select vehicle head detection, tail detection or dual-direction detection.
Horizontal Angle	Set speed measurement horizontal installation angle. Set angle must match the actual angle, otherwise it will cause big error. The recommended installation angle is: incoming: 18°, outgoing: 15°, dual-direction: 20°. These angles have positive and negative, as lane direction and radar direction forms an acute angle, if it is clockwise from lane direction to radar direction, then it is negative; and vice versa.
Vertical Angle	Set installation vertical angle of speed measurement. Set angle must match the reality exactly. Otherwise, it will cause big error in measurement. Default is 0.
Mount Height	Radar installation height to the ground, the ground depends on the horizontal surface of the road, unit is cm.
Radar Position	Set radar installation position, may select road left or right.
Multi Lane Set	Installation distance: Set installation location distance from the nearest lane to actually measure the distance prevails. It recommends a distance of about 150cm. Lane width: Set the width of the lane. The actual number of lanes scenario prevail, no need to fill the extra lane, the lane width to the actual measurement subject (from the lane to the first lane equipment recently, and so on). Example: the actual scene of three lanes, then four, five, six-lane width is not filled, the default is 0 units cm.

Parameter	Note
Snap Distance	Set running red light snapshot distance, default value is 1800cm.
Run Red Light Interval1	Set the second snap distance for running red light.
Run Red Light Interval2	Set the third snap distance for running red light.
Proportional Scale	Set proportional scale, 1~4 available, the default is 1.
Check Area	Make speed measurement as a rectangle vertex, along the road of snapshot direction, select a rectangular area in which the green blocks represent actual vehicle detected, via the combination of the moving patterns of both small blocks and actual vehicle, we can roughly calculate whether the horizontal angle setting is in line with the actual installation angle or not. Example: Figure 4-15 radar installation position, the vehicle is actually going straight, and small block moving pattern shifts to the left, so the set horizontal angle is too large.

Continuous Transmission

This function all continuous transmission of snapshot after the disconnection between device and platform recovers and transmit snapshot to the platform.

Step 1. Select ITC>Offline Transfer.

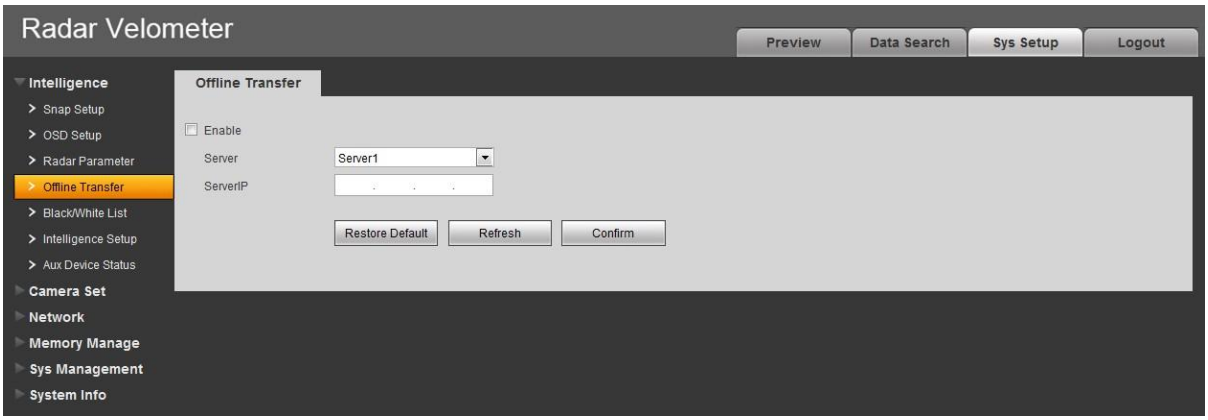

Figure 4- 18

Step 2. Check enable, to enable offline transfer function.

Step 3. Select platform and input platform IP address.

Step 4. Click OK. If you want to restore default config, click Restore Default.

Black/White List

Black list is to open black list alarm in alarm setup. When it detects vehicle in black list, it will alarm. Max 10,000 records. White list is to delete snapshot of vehicle in white list. Max 10,000 records.

Step 1. Select ITC>BW List. See Figure 4- 9.

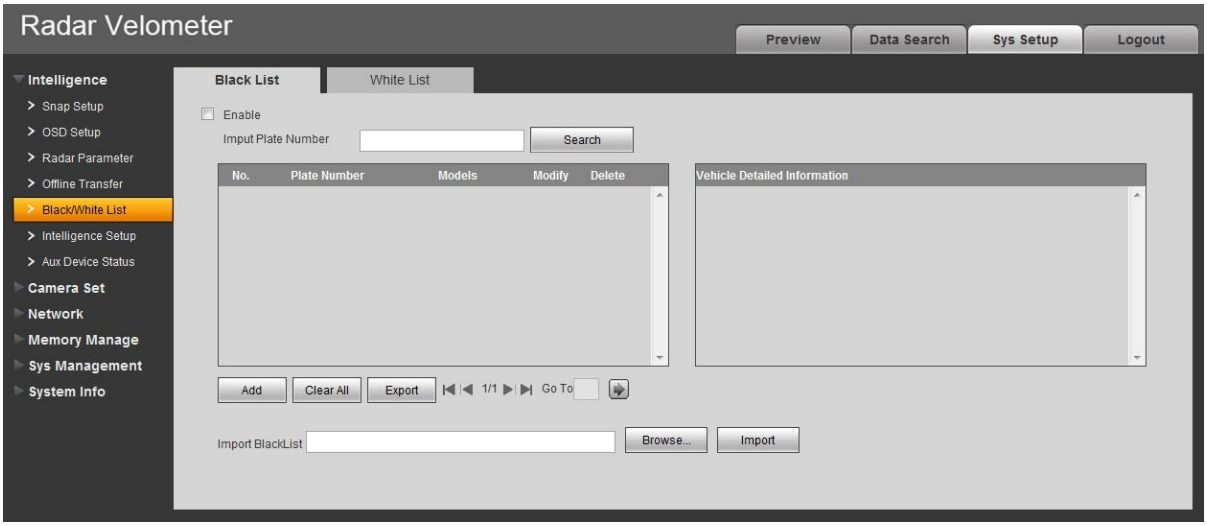

Figure 4- 19

Step 2. Check Enable to enable BW list.

Step 3. Input plate no., click Search, to search black list.

- If a single add new blacklist, click "Add" and enter the prompts box.
- If you need to export all of the blacklist, click "Export", follow the prompts to store the blacklist.
- If you need to remove all the black list, click "Clear All."
- If you need to add or bulk import blacklist, click "Import", according to the system prompts.

Step 4. Click White List, repeat step 1 to 3 , search and config white list.

Intelligent Analysis

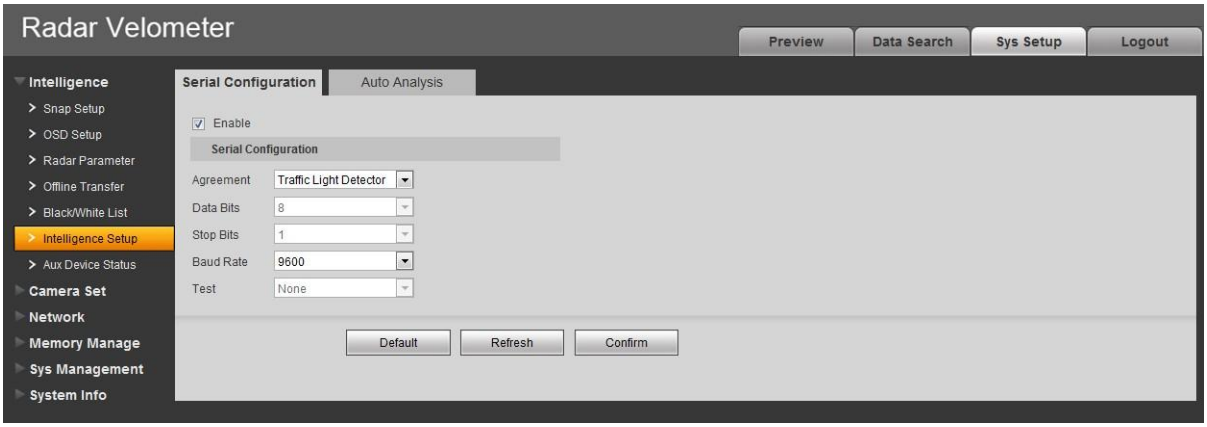

Figure 4- 20

Parameter	Note
Serial Configuration	Auto recognize plate no., plate color.
Agreement	Traffic light detector.
Baud Rate	Default is 9600.

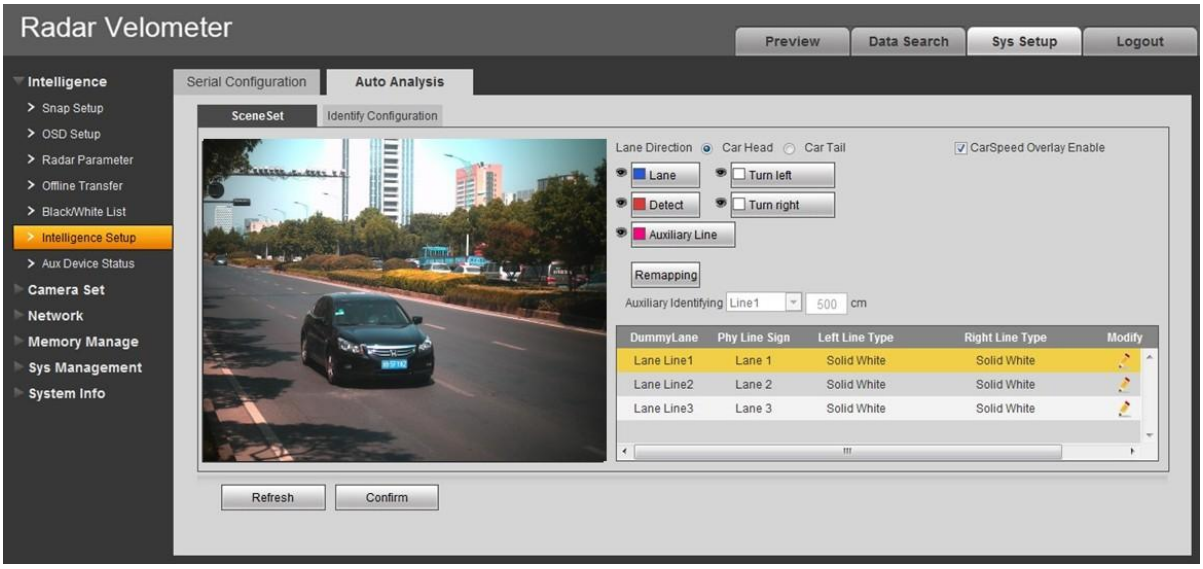

Figure 4- 21

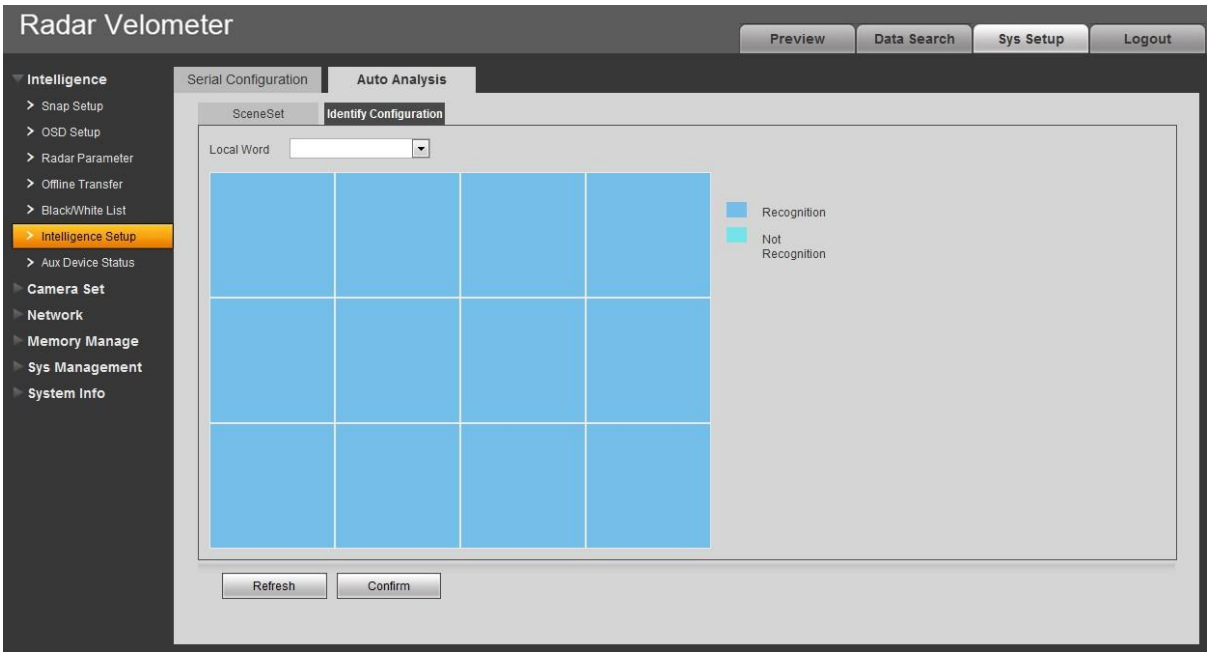

Figure 4- 22

Parameter	Note
Lane Direction	Car head or car tail.
Car Speed Overlay Enable	The current vehicle speed will overlaid on its body.
Region	Set the region.
Lane	Set the lane.
Detect	Set the detect line.
Turn Left/Right	Set the direction of lane.
Auxiliary Line	Set the auxiliary line.

Parameter	Note
Auxiliary Identifying	Set the length of lane.
Recognition Area Setup	Select plate recognition area, dark blue stands for recognition area.

AUX Device Status

The interface allows you to view aux device type, no. and status.

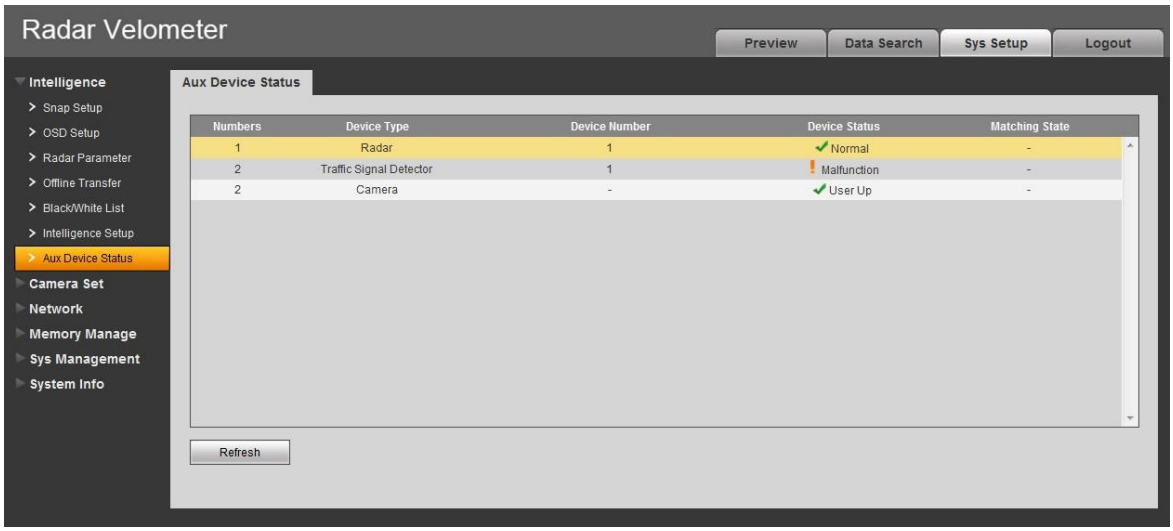

Figure 4- 23

4.5.2 Camera

Camera Property

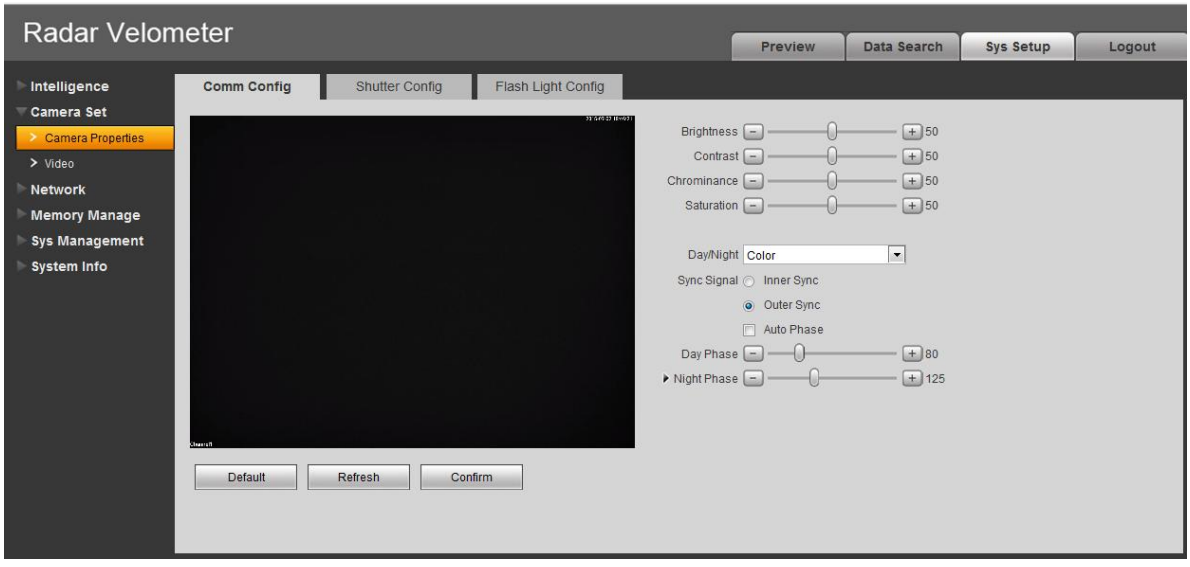

Figure 4- 24

Parameter	Function
Brightness	The value adjusts brightness of full image. Default value is 50. The higher the value, the brighter the image. When image is too bright or too dark, you may adjust this value. Recommended value is 40~60 within 0~100 range.

Parameter	Function
Contrast	The value adjusts contrast of full image. Default value is 50. The higher the value, the higher the contrast of image. When contrast is insufficient, you may adjust this value. Recommended value is 40~60 within 0~100 range.
Hue	The value adjusts hue of image. Default value is 50. It will not affect image brightness. It has a relatively fixed value according to the sensor. Recommended value is 40~60 within 0~100 range.
Saturation	The value adjusts saturation of image. Default value is 50. The higher the value, the deeper the color. It will not affect image brightness. When WDB is inaccurate, this value may cause color difference in grey area. Recommended value is 40~60 within 0~100 range.
Day/Night mode	Switch of color and black&white. It includes color, by brightness and black&white.
Sync signal	● Sync signal: Inner sync and outside sync. ● When you select outside sync, you can drag slider to set. Outside sync precedes AC sync signal. Note: ▸ means current item is used.

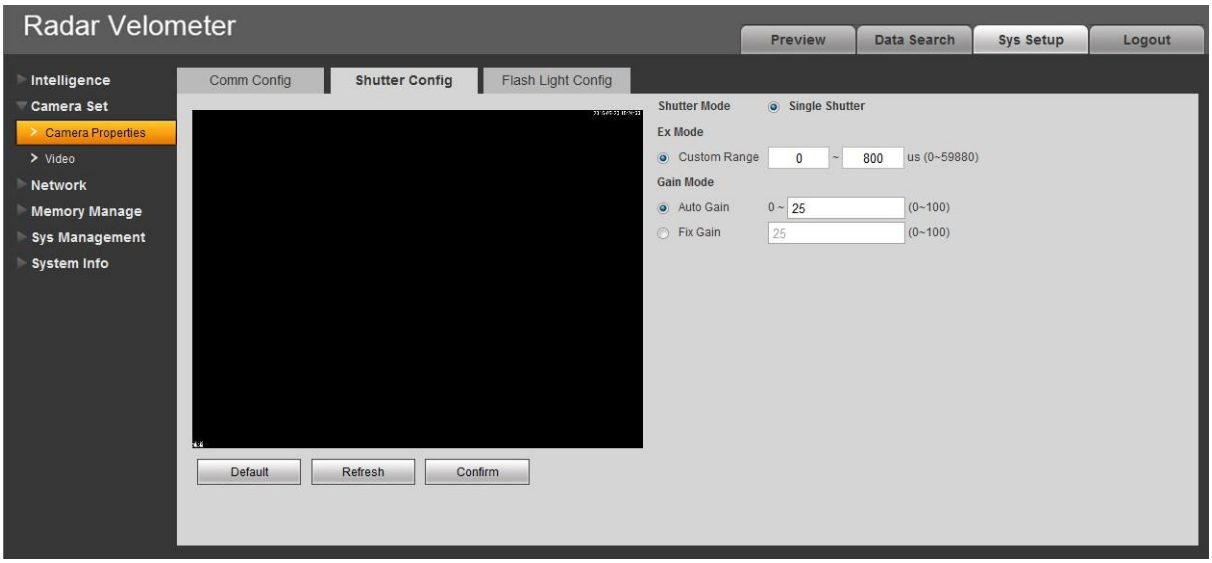

Figure 4- 25

Parameter	Function
Shutter mode	Currently only support single shutter.
Exposure mode	You may also customize exposure.
Gain mode	● Automatic gain, the system will be based on actual ambient brightness, automatically adjust the gain in the value range is set. Such as setting up 25, the system automatically adjusts the gain value using ≤25. ● Fixed gain, adjusted in accordance with fixed gain settings. Such as setting up 25, then the system will use 25 fixed and will not change.

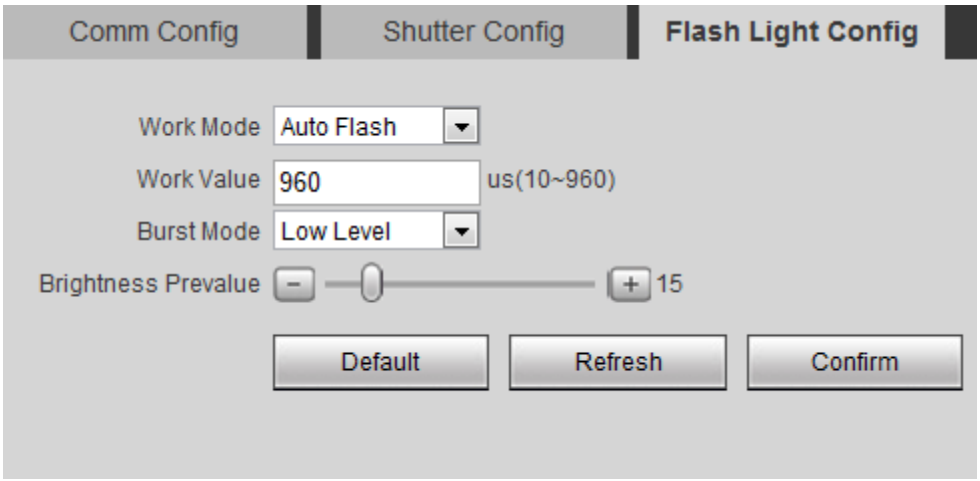

Figure 4- 26

Parameter	Note
Work Mode	Select flashlight work mode, include： ● Flash: Flash is not enabled. ● Always flash: Flash always effective. Auto Flash: the flash automatically according to the brightness.
Work Value	Set trigger flashlight duration.
Trigger Mode	Flashlight trigger level, as high level and low level. Currently only supports low level trigger.
Brightness Prevalue	When work mode is auto, set flashlight OFF and ON threshold.

Video

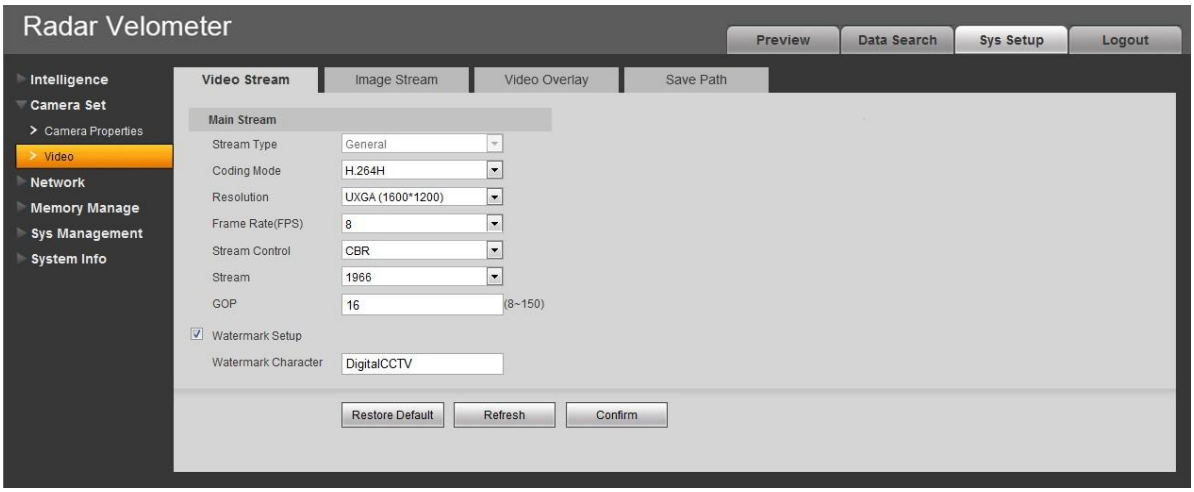

Figure 4- 27

Name	Parameter	Note
Main Stream	Stream Type	Activity Controlled Framerate (ACF) feature, use a different frame rate for video, high frame rate recording for an important event for timed events using a low frame rate video. Motion detection and alarm recording frame rate can be set independently. Including ordinary stream, moving the seizure stream, alarm stream three coding stream. Select a different code stream for different recording events. Note: ITC application does not support it for now.

Name	Parameter	Note
	Encode Mode	Only support H.264. H.264：High Profile encode method.
	Resolution	Display resolution type, different model product resolutions are different.
	Frame Rate（FPS）	Max support 16 fps.
	Stream Control	Include CBR, VBR. Only under VBR mode, you can set resolution.
	Stream	VBR, the value is the upper limit；CBR, this value is fixed.
	I Interval	P frame quantity between two I frames，range is 1～150，default is 2x frame rate.
	Watermark	By checking the watermark character, you can check whether the video was tampered with. Select the Enable item to enable the watermark feature. Default watermarks characters: DigitalCCTV. Watermark characters can only be numbers, letters, underscores, and a maximum of 85 characters.

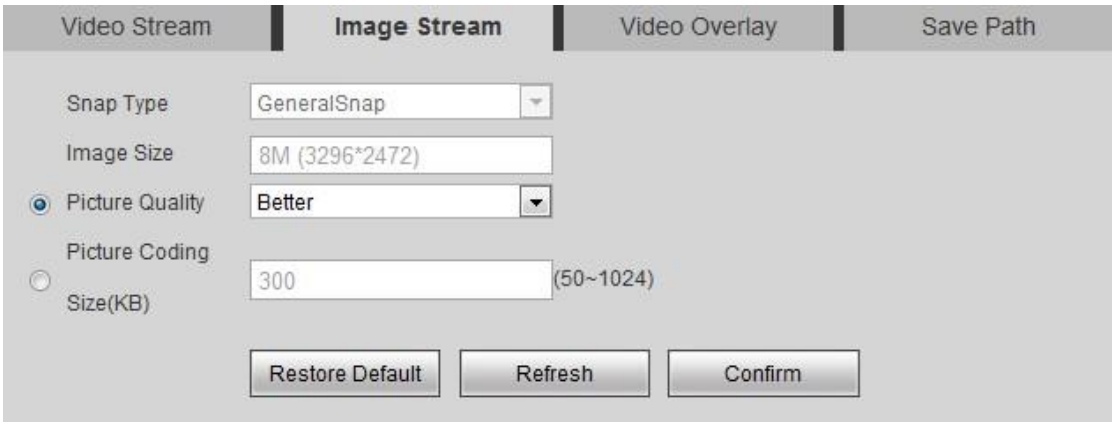

Figure 4- 28

Parameter	Note
Snapshot Type	It has normal snapshot and trigger snapshot. Normal snapshot is to snapshot within set period. Trigger snapshot is to snapshot when radar is triggered. Note: Currently the device does not allow selection.
Image Size	Match main stream resolution. Note: Currently the device does not allow selection.
Picture Quality	Set snapshot quality, there are 6 levels for selection. Note: You must select either picture quality or picture coding size function, you cannot select both.
Picture Coding Size	Set picture size. Note You must select either picture quality or picture coding size function, you cannot select both.

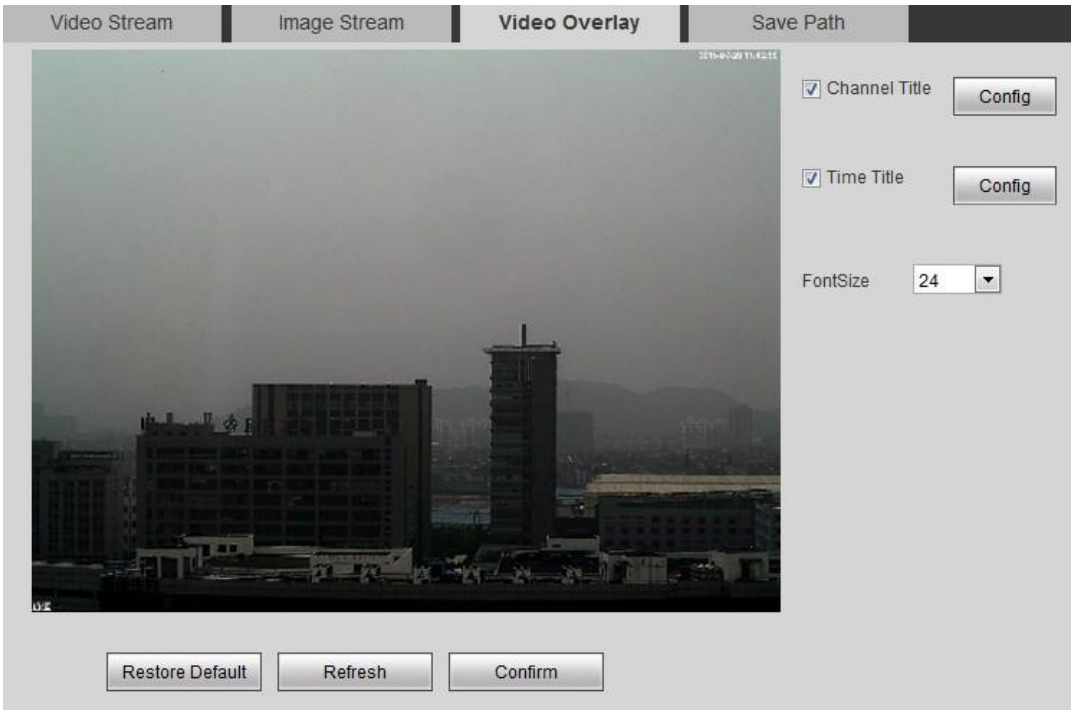

Figure 4- 29

Parameter	Note
Channel Title	When selected, displays the channel title in the video surveillance window. Select and click the Configure button can be configured to cover the area. You can drag the "Channel Title" box to adjust the position of the channel title.
Time Title	When selected displays the time in the video surveillance window title. Select and click the Configure button can be configured to cover the area. By dragging "Time Title" box to adjust the time location of the title.

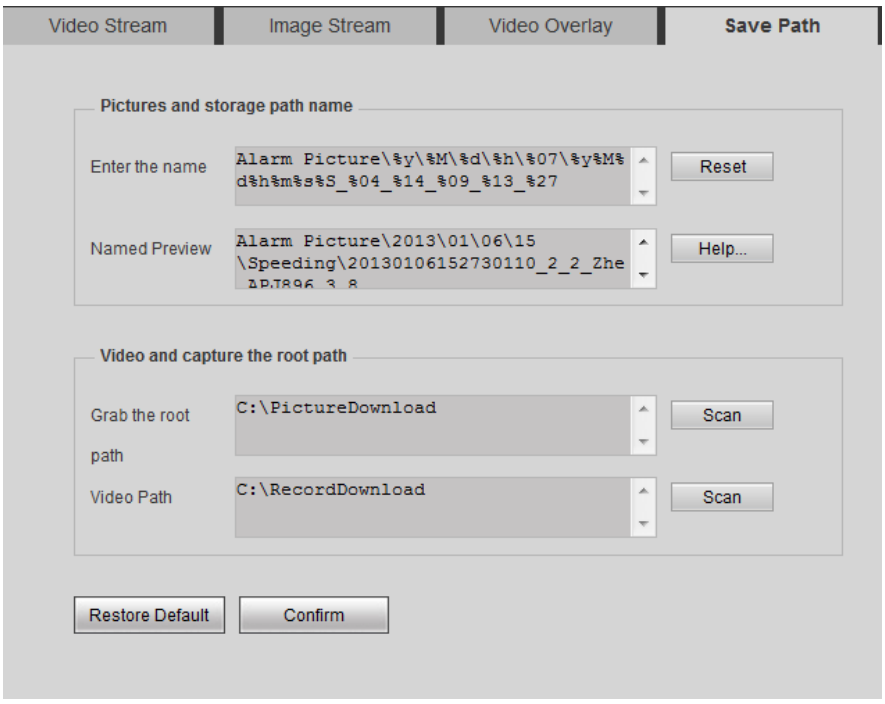

Figure 4- 30

You can set manual snapshot storage path and manual record storage path.

In Preview interface, picture and record of manual snapshot  , manual record  are saved in the two paths. Default path are “C:\PictureDownload” and “C:\RecordDownload”.

4.5.3 Network Setup

TCP/IP

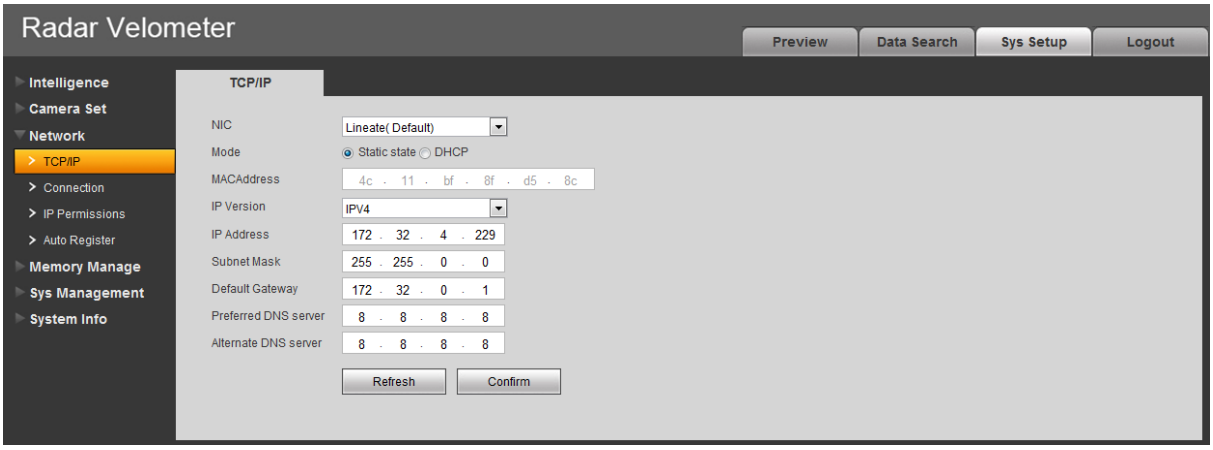

Figure 4- 31

Parameter	Function
Ethernet card	Set Ethernet card to config. Default is wired. Currently it only supports wired.
Mode	You can select from static and DHCP mode. In DHCP mode, it automatically search IP while you cannot set IP/subnet mask/gateway. Plus IP/subnet mask/gateway display values from DHCP. In static mode, you shall manually set IP/subnet mask/gateway. To switch from DHCP to static, you must set IP parameters again.
MAC address	Display host MAC address.
IP version	Select IP version IPV4 or IPV6. These two IP addresses both can be accessed.
IP address	Input new IP address to edit, and set subnet mask and default gateway.
Preferred DNS	DNS server IP address.
Alternate DNS	DNS server alternate IP address.

Connection

If you need to access the device via different protocols, please set connection port info.

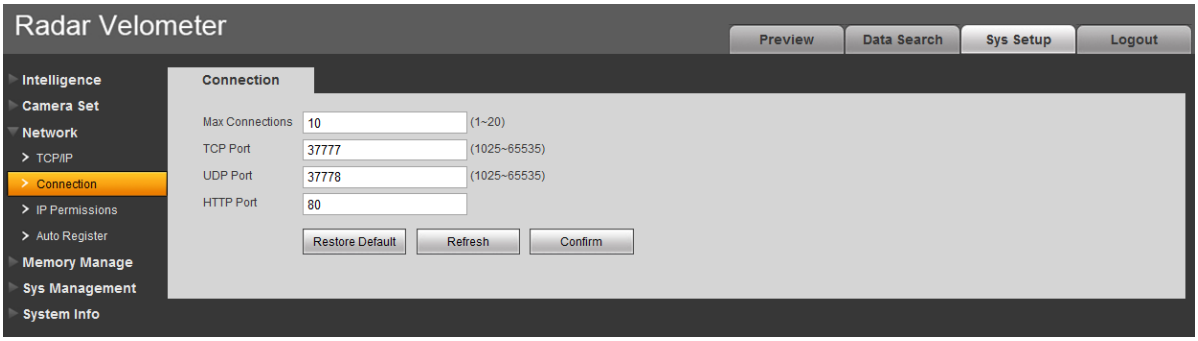

Figure 4- 32

Parameter	Note
Max Connection	One device can enable up to this number of WEB logins, default is 10.
TCP Port	TCP protocol COM provided port, default is 37777
UDP Port	User data pack protocol port, default is 37778
HTTP Port	HTTP COM port, default is 80

IP Filter

You may set trusted list and banned list to allow or prohibit user login.

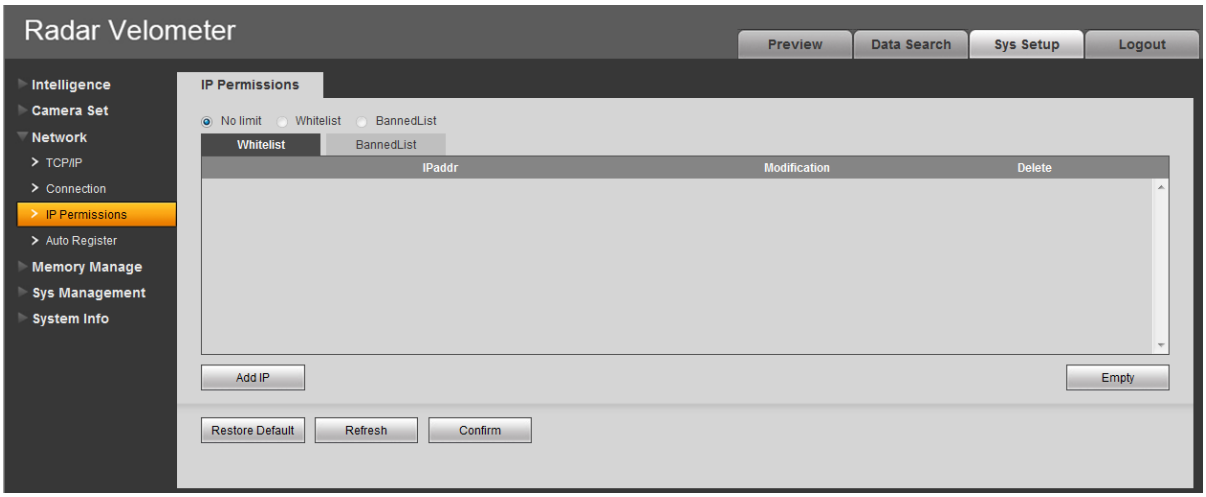

Figure 4- 33

Auto Register

After auto registration is enabled, device will automatically register to management server, and you can preview and monitor the device from server.

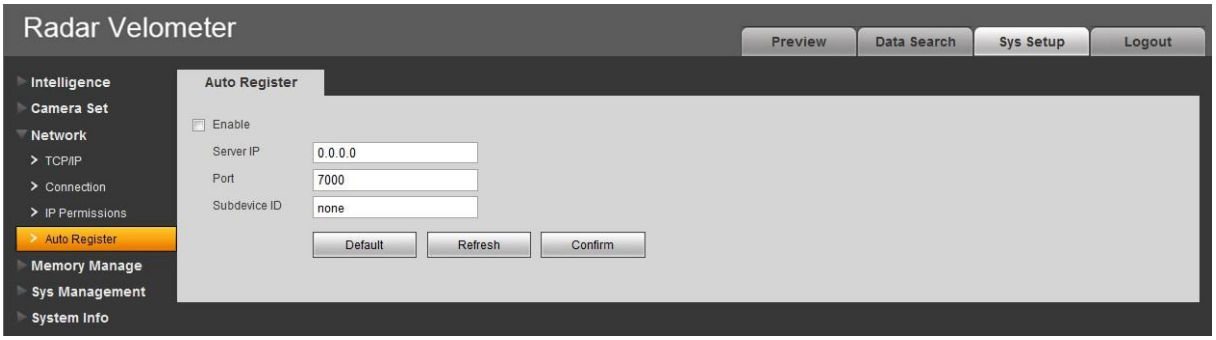

Figure 4- 34

4.5.4 Storage Management

Local Storage

Local storage is to store data in device HDD. You can search picture storage capacity, set whether HDD shall stop saving or overwrite files when it is full.

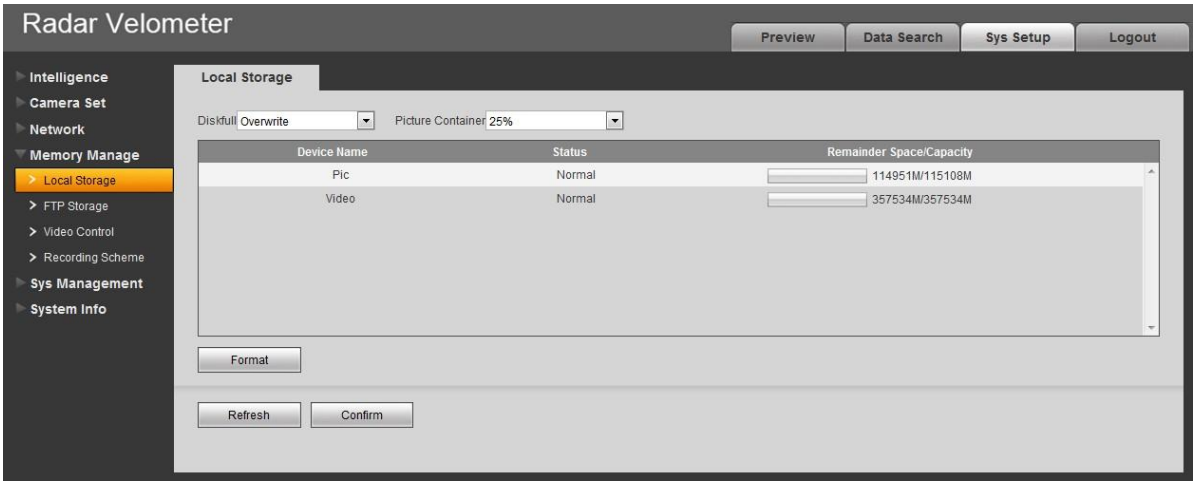

Figure 4- 35

FTP Storage

FTP: You must enable FTP before selecting it for current storage. When disconnection occurs or malfunctions, it saves file or snapshot to local SD card.

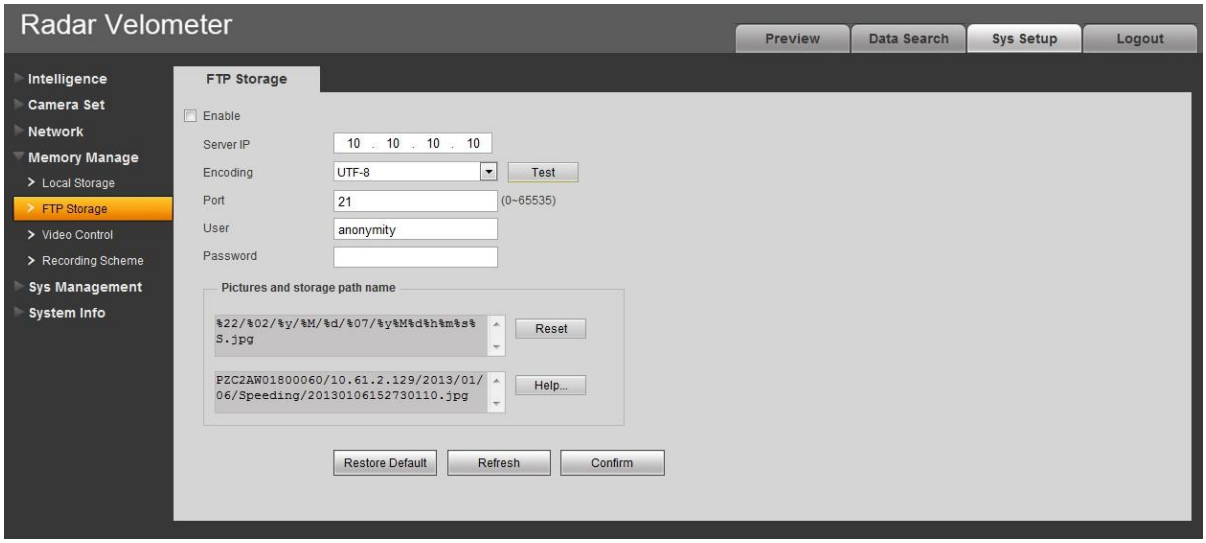

Figure 4- 36

Parameter	Note
Enable FTP	Check, enable FTP server.
Server IP	FTP server IP address.
Encode Method	Two encode mode available, as UTF-8 and GB2812.
Test	Click "Test", FTP server if the connection is successful, the system generates a corresponding test file according to the selected encoding format.
Port	FTP server port no., default port is 21.
User	FTP server username.
Password	FTP server password.

Parameter	Note
Picture and Storage Path Naming	FTP server file storage path and picture naming method, for details click “Help”.

Record Control

Record control is to enable or disable each channel’s record, and each record’s time.

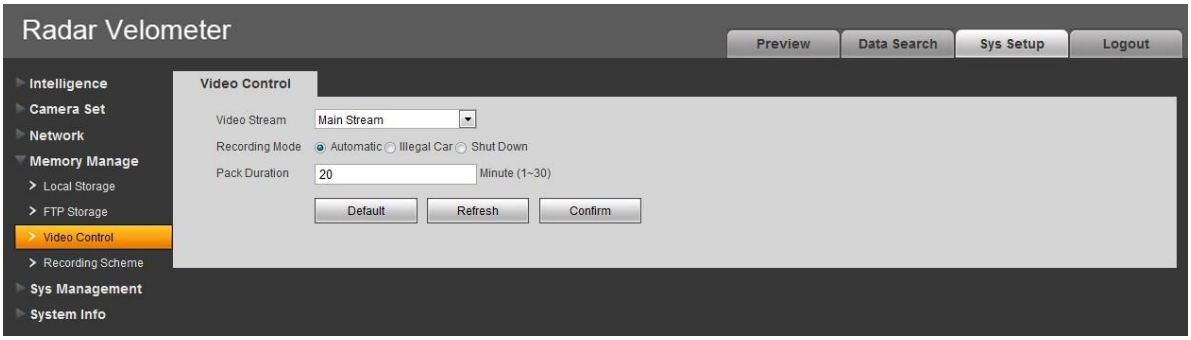

Figure 4- 37

Parameter	Note
Record Stream	Can select main stream or sub stream to record. Note: Currently support only main stream.
Record Mode	Set each channel’s record mode. Auto：auto record. Violation：violation event record. Off：disable record function.
Record Length	Ser record duration： Auto：may set record length, range is 1~30 min. Violation：may set period duration before and after violation event ， range is 5~8s.

Record Plan

Record plan is to set one week, day 00:00 to 24:00 record time and type.

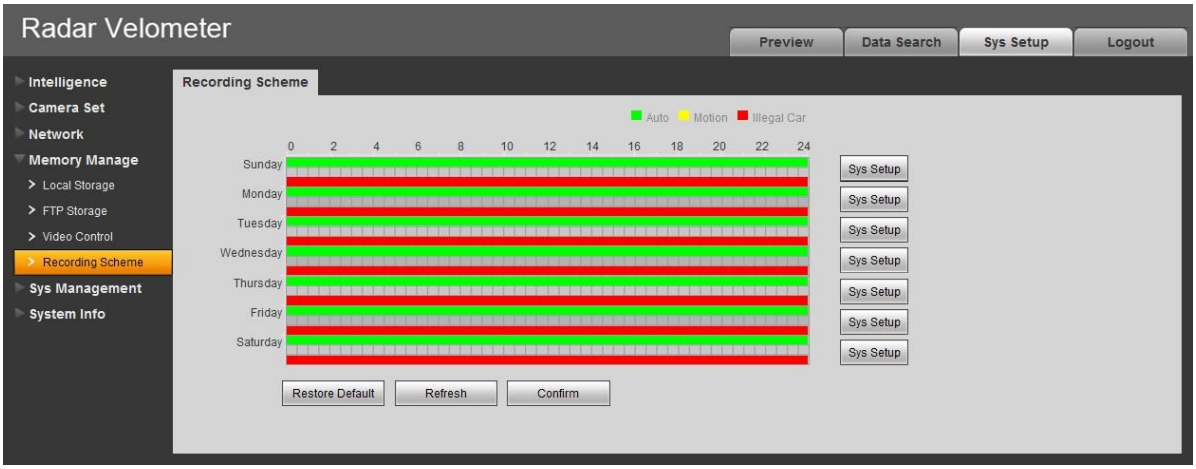

Figure 4- 38

4.5.5 System Management

General

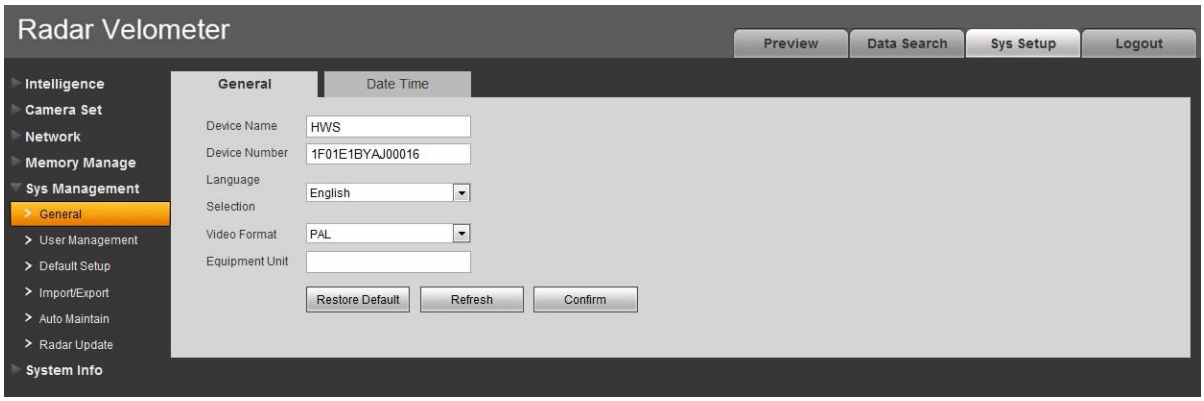

Figure 4- 39

Parameter	Function
Device Name, Device SN	Set the device name and SN.
Language	Select language and then close IE. When you log in again, system language will change.
Video standard	Display device video standard, such as PAL.
Affiliation	Fill in according to actual condition.

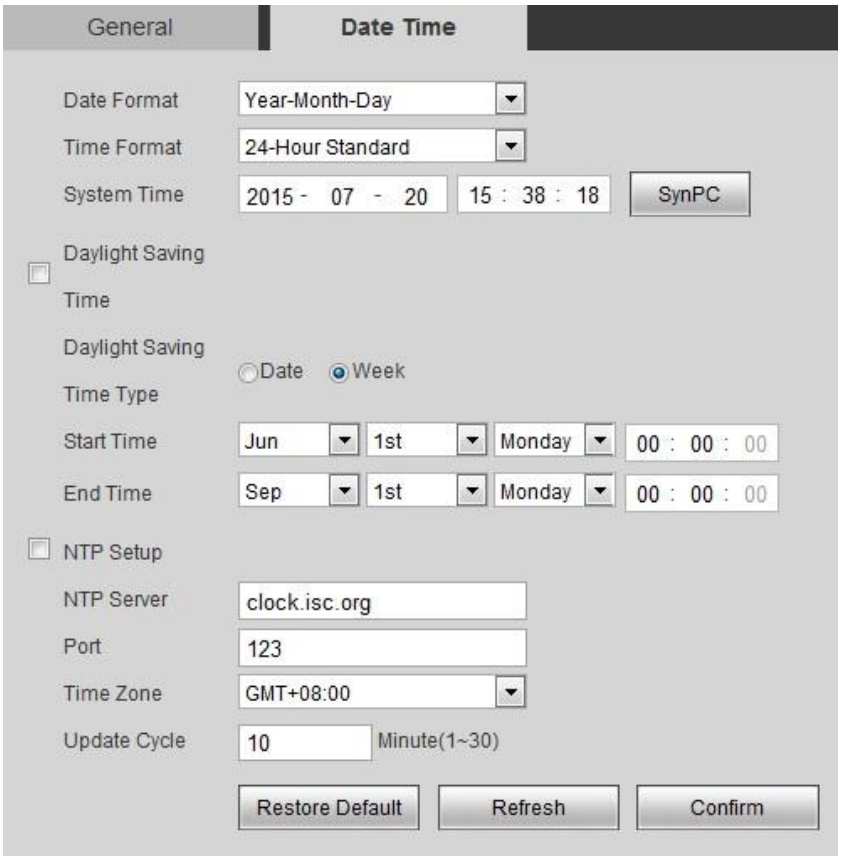

Figure 4- 40

Parameter	Function
Date format	Select date format.
Time format	Select time format.
System time	Set current system time. Setup becomes effective immediately.
Sync PC	Sync system time with PC time. Click on save to refresh system time.
DST	Set DST, may by date or week. Setup becomes effective immediately.
NTP setup	Check to sync with NTP.
NTP server	Set NTP server address.
Port	Set NTP port no.
Time zone	Set device time zone.
Update period	Set device update period.

User Management

- Account has two levels as group and username. Group supports max of 8 and username supports max of 18. Default group includes admin and user.
- Group name cannot be repeated. Each user belongs to one group only. You may add and delete group and set group. User right within a group can be customized as long as within right of the group.
- Username and group names support max length of 15 characters which can be letter, number, underline and dash.

Username

Here you can add and delete username, and modify user password.

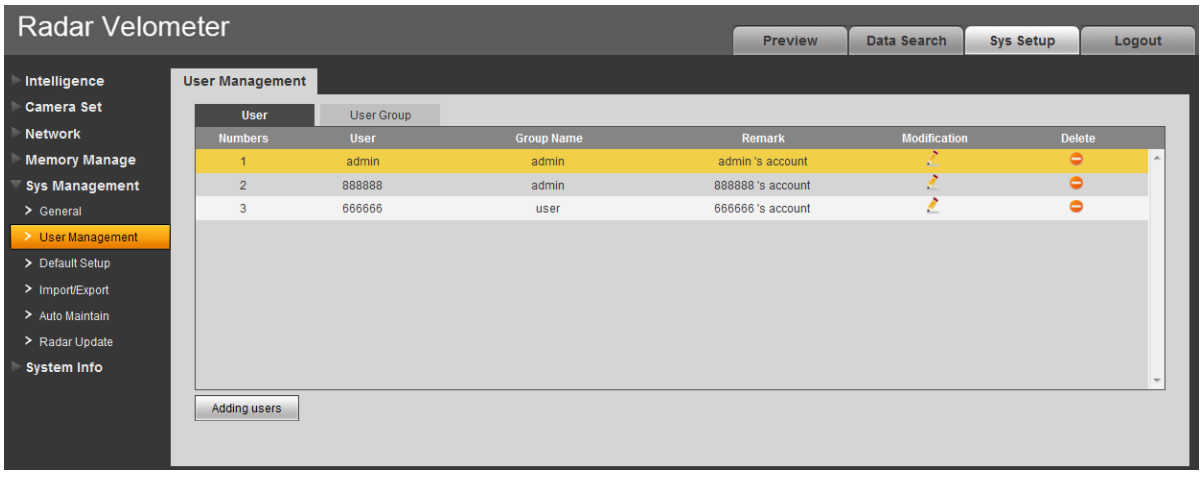

Figure 4- 41

1). Anonymous login: Enable anonymous login as input IP without username and password to log in device. This type of account only have preview right. You may switch to other account by clicking on logout.

2). Add user: Add user within group and set user right.

Note:

- By default there are three users: admin, 888888 and 666666. Their passwords are the same as corresponding username. Admin and 888888 are admin account by default while 666666 is user account which has monitor right only.
- Enter add user interface, input username and password, and select its group.
- Username shall not exceed right of its group.
- We recommend you to set user right lower than admin right.

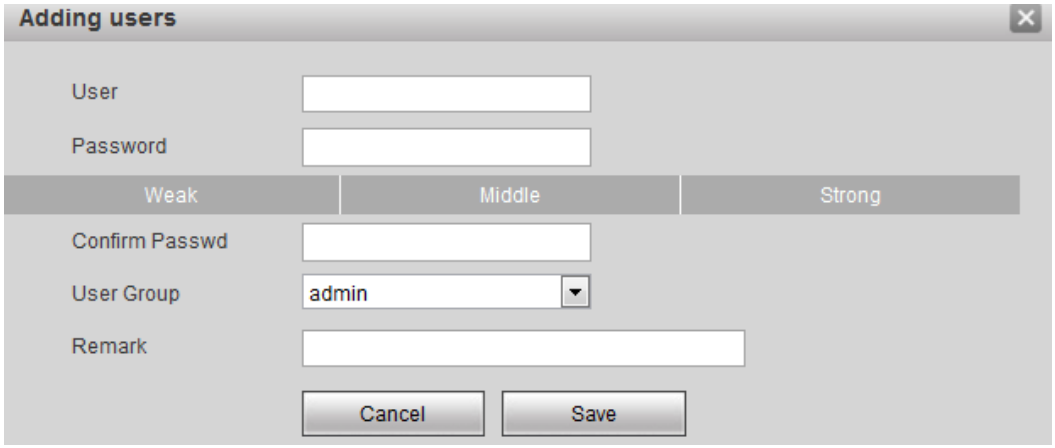

Figure 4- 42

3). Modify user: Modify existing user's group, password, right and note.

4). Modify password: Modify password of existing user. Check box in front of modify password. Input current password and then input new password. Click on save. Password supports 0~15 characters, including letter and number only.

Note:

- You cannot modify right of the logged in account.
- You cannot modify or delete admin, 888888 and 666666 accounts.
- Account who has right to modify other account, can modify other user account besides its own.
- You cannot delete currently logged in account.

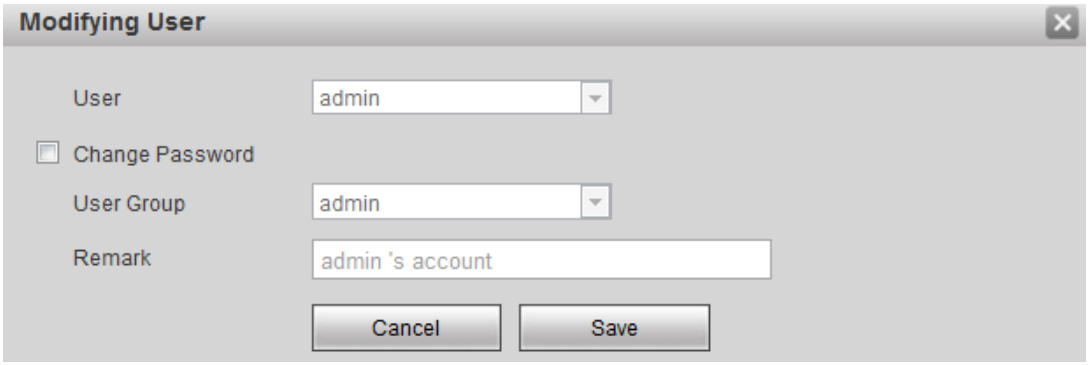

Figure 4- 43

Group

Here you can add and delete group, and modify group password.

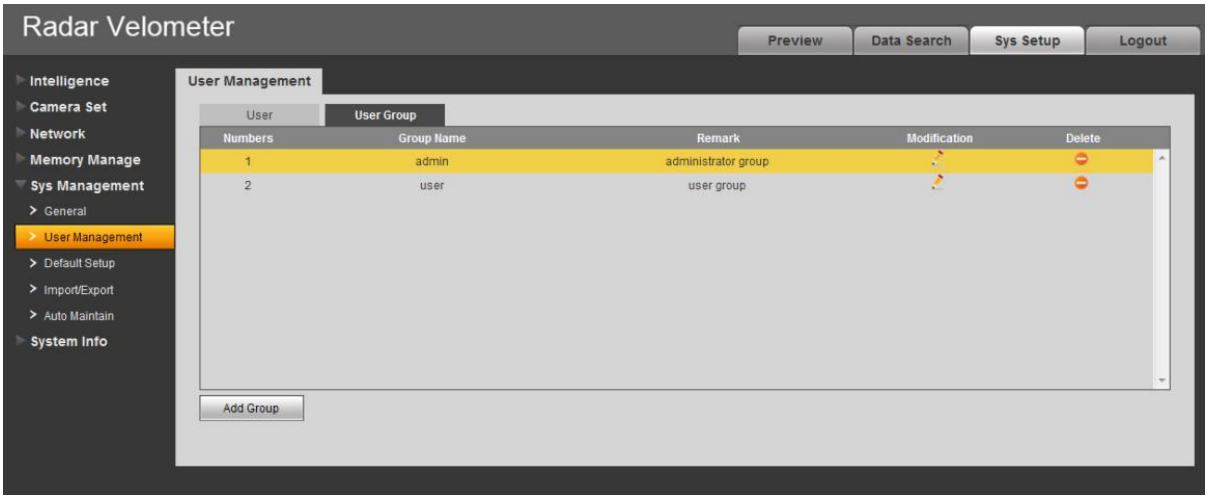

Figure 4- 44

Add group: Add user within group and set group right.

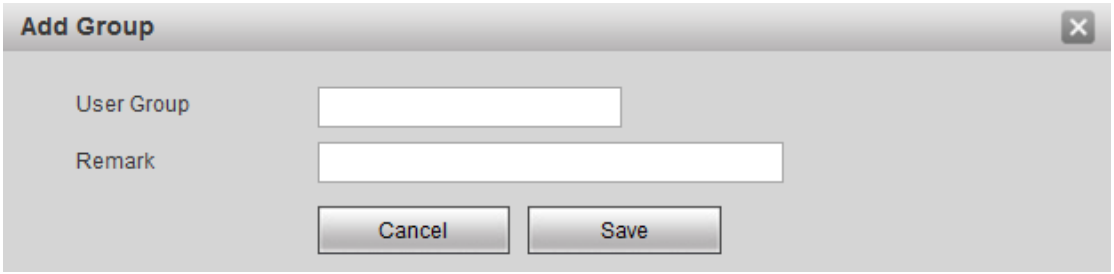

Figure 4- 45

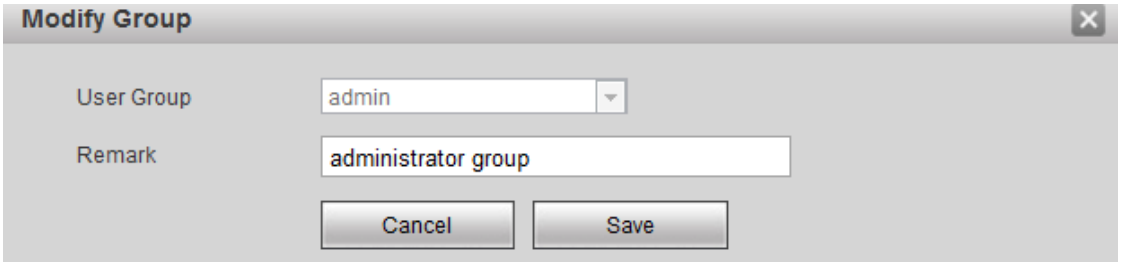

Figure 4- 46

Note:

- You cannot delete admin and user groups.
- You cannot delete group which contains currently logged in user.

Default

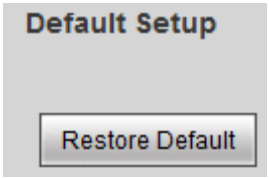

Figure 4- 47

Note: Network IP address cannot be restored to default.

Import/Export

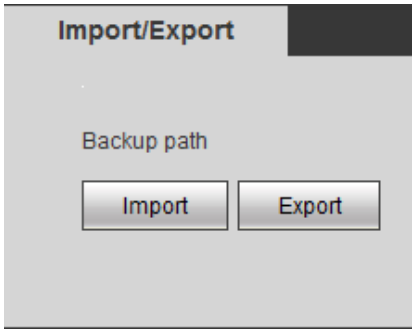

Figure 4- 48

Parameter	Function
Export	Export system config to local.
Import	Import local config to system.

Auto Maintain

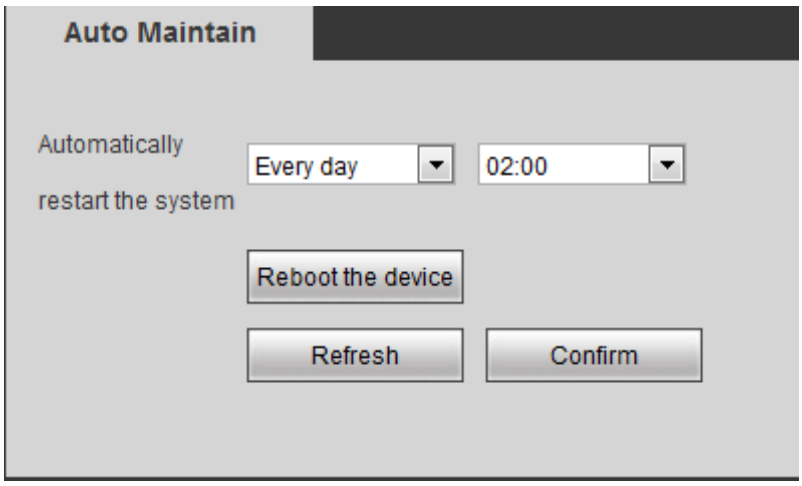

Figure 4- 49

Radar Upgrade

When radar upgrades, you shall select upgrade file. Upgrade file is “Peripheral.bin”. Please maintain stable power supply, connection and do not reboot or shut down camera during this process.

Figure 4- 50

Note: If system encounters error during upgrading, the device may malfunction.

4.5.6 Information

Version

Here displays device type, software version and soft build time. **All info here subject to actual condition.**

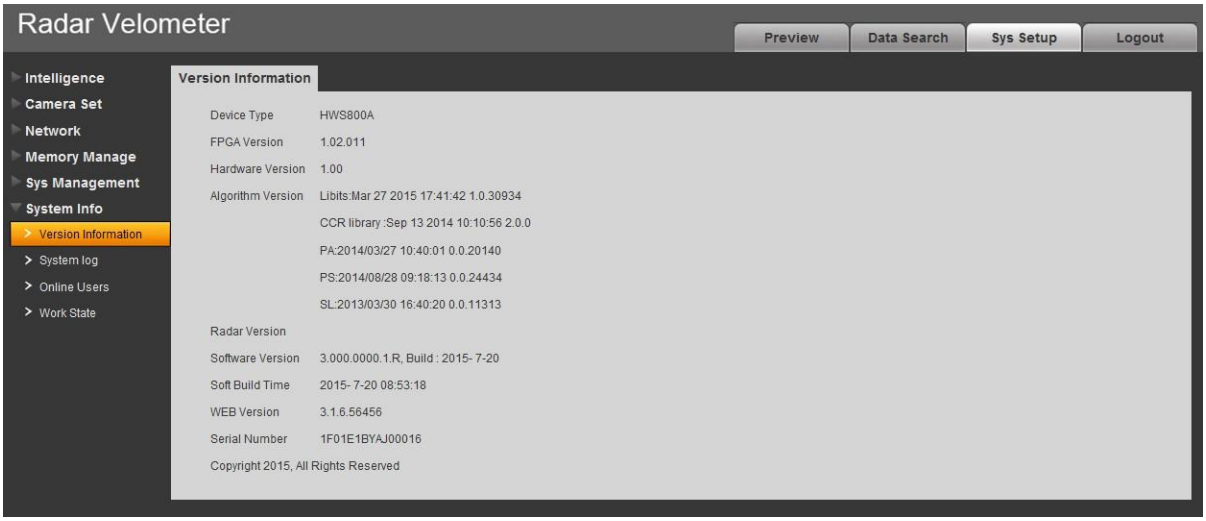

Figure 4- 51

Log

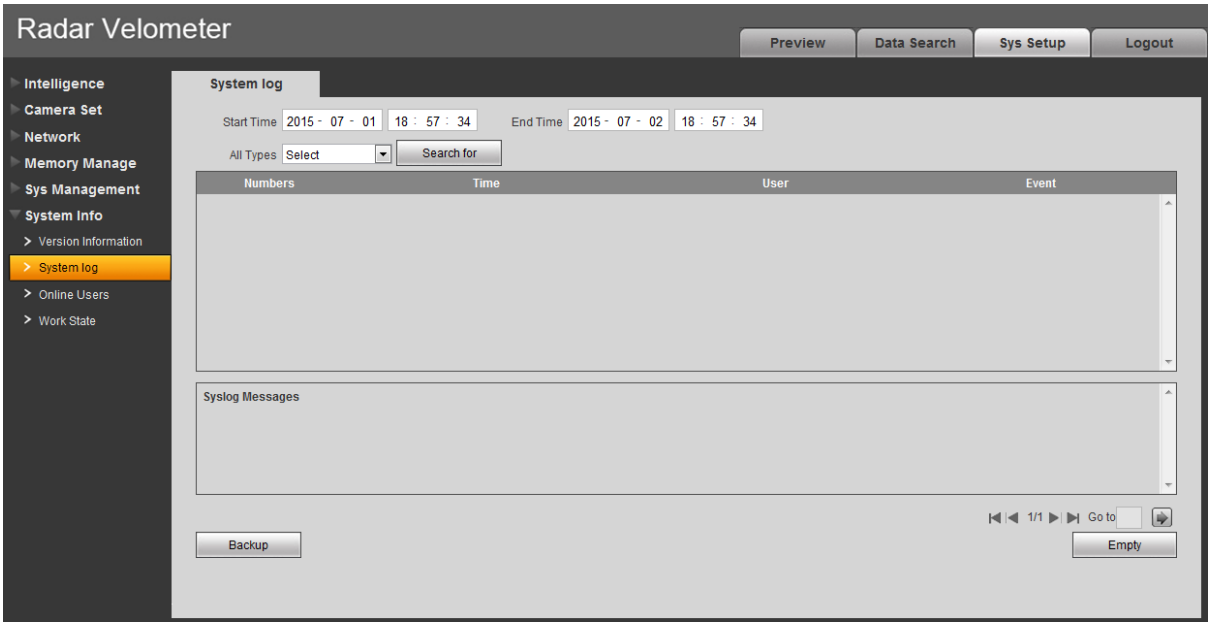

Figure 4- 52

Parameter	Function
Start time	Set start time of log to search.
End time	Set end time of log to search.
Type	Log type includes: system, config, data, event, record, account and clear all log.
Search	• In dropdown list, select log type, and set start/end time. Click on search button and then you will see logs searched out. • Click on stop to stop log search.

Parameter	Function
Detailed info	Click on log to view its detailed information.
Clear	Clear all system log displayed. You cannot clear log by type.
Backup	Create backup of displayed log onto current used PC.

Online User

Here displays online user and their group, IP address and login time.

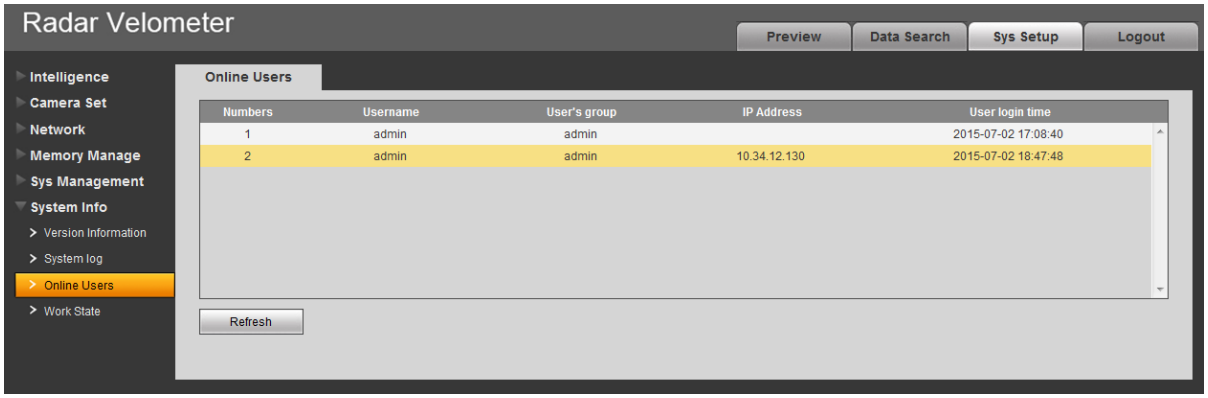

Figure 4- 53

Work Status

Figure 4- 54

4.6 Logout

Click Logout, to exit. You need to login again to visit the system.

Figure 4- 55

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 snapshoot 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 ℃ Do not use lithium batteries; when the ambient temperature around 0 ℃, use 2/3 electricity shortage, when the ambient temperature around -10 ℃, using a drained 1/3; for lithium batteries at temperatures between 0 ℃ ~ 45 ℃.
- 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.**