

SV2000
Software User's Manual
Version 1.3

Dec. 2009

Release Note









V1.3

- * New: Add 2 GPIs trigger pre-set positions function.
- * New: Add 16 sets of preset position triggered by RS485. The Protocols are compatible with Pelco-D.
- * New: Add a reboot button to remotely reboot SV2018 from power-off.
- * Modify Horizon Weight Setting (1~4), default is 3.
- * Indicate the latest log block.
- * Simplify the display of Version (i.e. 1.3 NTSC/PAL)
- * Add a Cancel button to cancel the transmitting between SV2018 and PC.
- * Notify the user when the SV2018 firmware is older than PC software (V1.3).
- * Enable 2 cameras live display even if the SV2018 RS485 is not connected
- * Add the default parameter setting.
- * Increase the speed of the mouse click event at calibration page.
- * Add double click function for default positions.

V1.2

- * Add "Live" page
- * Add "Replay" page
- * New: Tracking options setup
 1. Horizon Weight Trigger Tracking
 2. Dynamic mask

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1 INTRODUCTION OF PRODUCT

Sunvision Scientific Inc. has developed the IGUANA a next generation, revolutionary active tracking surveillance system. The IGUANA system has combined the best functions of both the panoramic lens cameras and the telescopic lens cameras.

Motion detection has been used in many places in the market now a day. When a moving target is detected, current security cameras can only sound the alarm, and passively wait for a security guard, if any are available, to take the proper action. The IGUANAI system can actively track down the moving target and take the close up images of the target.

The IGUANA-S system can also use masking techniques that allow you to set where to detect within the panoramic view. The IGUANA-S system has dramatically improved the effectiveness of surveillance systems to meet the ever increasing demands of the security world.

An embedded IR module can offer you clear vision at night. No matter whether it is day or night, your home and your property are safe and secure under the watchful eyes of the IGUANA-S.

2 SPECIFICATION

2.1 System Configuration

IAUANA-S is 100% compatible to standard CCD cameras. It can be integrated into any typical security surveillance system with 2 standard video output, one for panoramic view and the other for closed up view of all moving targets. Also, IAUANA-S can be used in Speed-Dome mode with build-in RS-485.



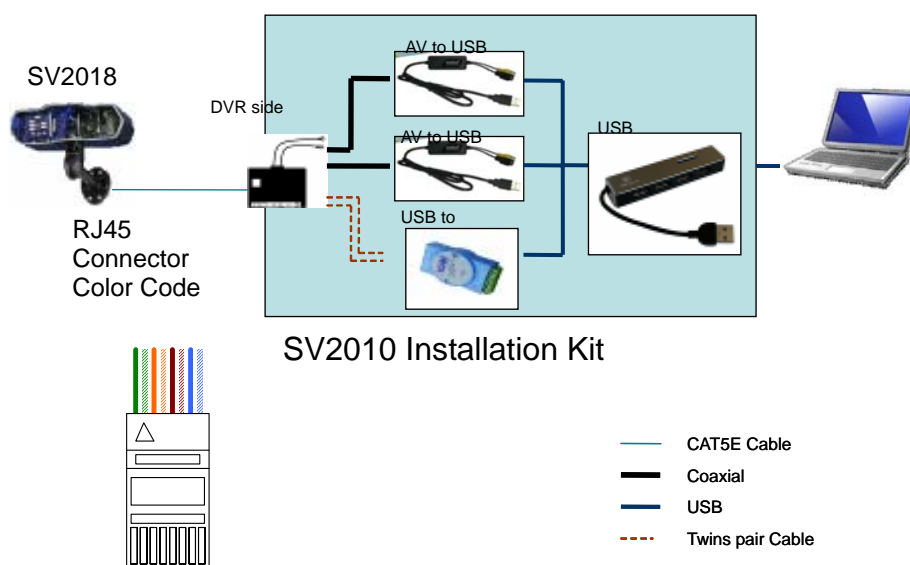
2.2 Specifications

SV2000 IGUANA-S Active Tracking Surveillance System - Specifications	
Standalone system, able to connect to any DVR directly, easy to retrofit & integrate with existing conventional cameras surveillance system	
Two-camera design, one for panoramic view and the other for detailed view of moving targets	
Automatic high speed tracking multiple moving targets(5 times per second) and high optical zoom ratio (x3~~x15)	
Speed Dome Mode: Manual pan-tilt movement via control keyboard (PELCO-D)	
Target location prediction, target size, sensitivity & default position adjustable	
Highly flexible mask and 2 zone priority capability	
All weather application with built in heater and high power IR	
Hardware Watchdog, reset the system after abnormal condition	
Min. 2400 meters transmission from IGUANA camera module to DVR	
SV2018 IGUANA-S IGUANA Camera Module – Specification	
Number of CCD Cameras	2 CCD per module, one with wide angle fixed lens, the other with adjustable telescopic lens
Tracking Speed	Capable to change selected targets 5 times/sec and track multiple targets
TV Standard(Optional)	NTSC (720 X 480) or PAL(720X576)
Video Transmission Interface	1 CAT5E cable
I/O Interface	GPIO TTL compatible, 2 inputs, 2 outputs
Serial Port	RS-485 Serial Port
Wide Angle Lens Camera Angle of View	75 ° x 56 ° , or 53 ° x 39 ° dip switch selectable Or, compatible board lens of variant focal length
Zoom Ratio	3~15X
Telescopic Lens	7.5~50mm
Tracking Mechanism	Mirror Reflecting Mechanism
Anti-Reflective Coatings	Front glass with Anti-Reflective Coatings

Effective Surveillance Area	75 ° x 35 Meter (114 ft.) radius (able to identify a person)
IR Module	High power infrared LED (wave length 850nm power consumption 8W)
IR Module Circuit Board	Aluminum PCB for fast heat dissipation
Heater	PTC Heater conductor
Construction	Aluminum casing with weather-proof coating
Operation Temperature	-20°C ~50°C (-4°F ~122°F)
Operating Humidity	10%~~75% RH
Storage Temperature	-40°C ~60°C (-40°F ~140°F)
Environmental Protection	IP66
Dimension	442(W) X 140 (H) X 277(D) mm (17.4 X 5.5 X 10.9 inches)
Weight	6.2Kg (13.7lbs)
Power Supply	AC100~240V 1.3A or AC 24V 4A

3 How to Use

3.1 Installation Kit (SV2010) Configuration

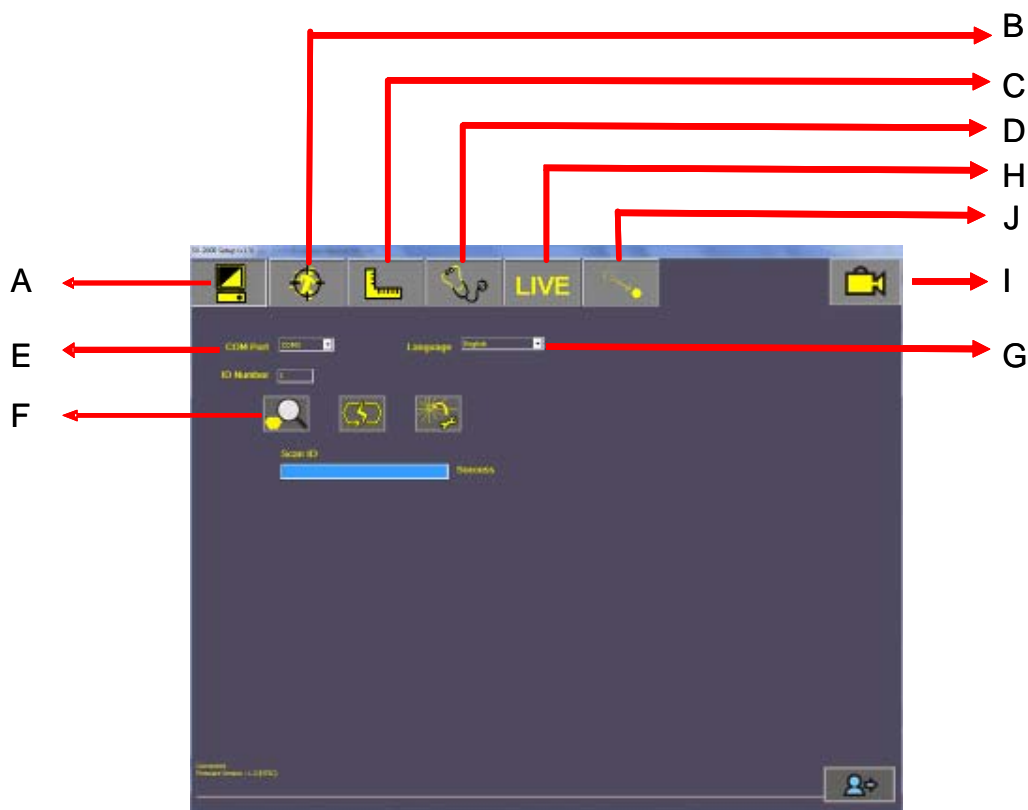


Please refer above picture and make sure the configuration of installation kit.

3.2 Install Software & Driver

Please refer to SV2000 Software Installation Manual.

3.3 System



- A 、 System
Display the active Com port ID scanning, and language selecting
- B 、 Motion Detection
Motion Detection Parameter Setting
- C 、 Calibration
SV2018 Calibration
- D 、 Misc.
Log reading and firmware updating
- E 、 COM Port Display
Display the active Com Port
- F 、 Scan ID
Scan SV2018 ID, this will take few minutes
- G 、 Language
Select Display Language
- H 、 LIVE
Real camera active display
- I 、 Replay
Replay the demo video

J、Preset Position

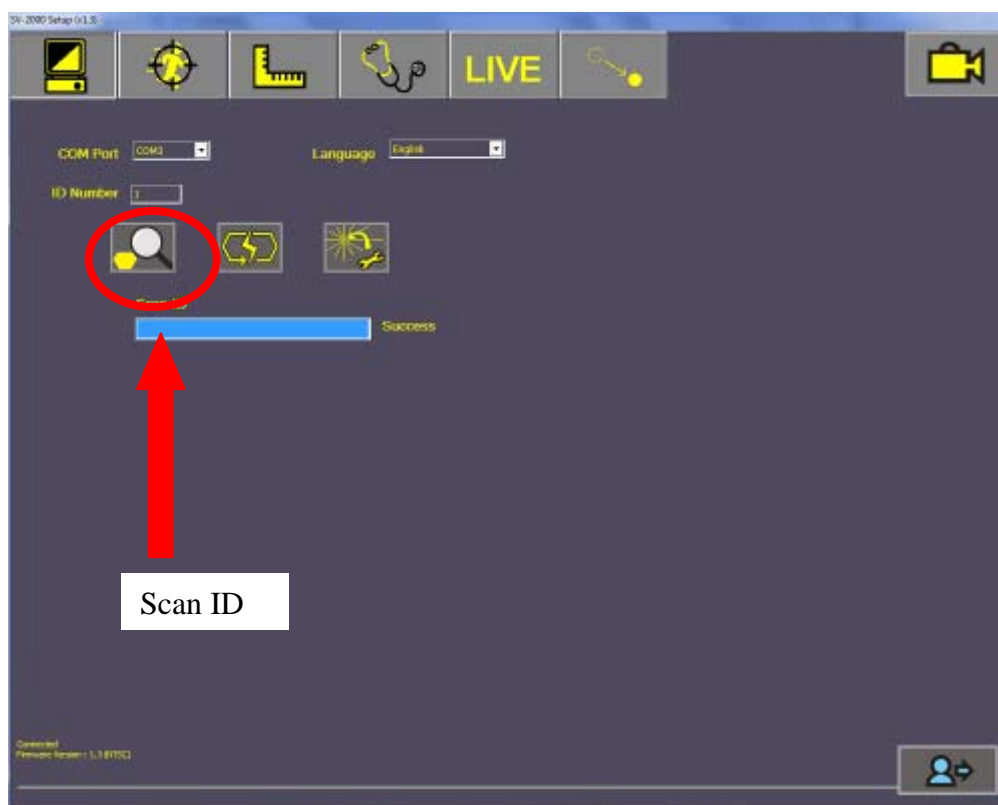
Setting 16 preset positions triggered by RS485. The Protocols are compatible with Pelco-D.

Initial ID

Execute the SV2000 program



Step 1. The program will scan the camera ID automatically. The SV2018 ID can be set from 1 to 254. This will take a few minutes.



If error warning appears, please make sure the camera is power on and check the cable connection. Then scan ID until ID number and function key appear. After ID recognition, the Camera will reboot by itself if no command is executed for 10 minutes. The SV2000 program must re-scan again.



: SV2018 reboot

Press this button to remotely reboot SV2018 from power-off.



: Restore Default Parameters

Retrieve the default parameters like target size, sensitivity, and advance setting etc.

3.4 Motion Detection

To improve tracking targets, the following parameters including masking and others, can be adjusted. Good adjustments will reduce miss-firing and offer improved image quality and tracking efficiency.



A、 : Target Size

Setting the minimum target size for motion detection. Selecting small target size will detect more keenly, but the miss-firing rate would also be higher.



B、 : Sensitivity

Setting the trigger sensitivity. The sensitivity must be reduced when the miss-firing rate is high.

C、 Mask :



: Section

Cut the screen into two sections



: Polygon

Draw a polygon on the screen



: Rectangle

Draw a Rectangle on the screen

D \ Masked Area level Setup



: Normal Detection

Normal detection area. A masked area can be removed by assigning back to normal detection area.



: Low Detection

Low priority detection area



: No Detection

Targets within this area will not be detected

E \ Delete Area



: Delete Line

Delete one line group



: Delete All Lines

Delete all lines on this screen



F \ : Default Position

The telescopic camera will return to the default position after 15 seconds of no motion detected.



: Preset positions 1.



: Preset positions 2.

There are two (2) preset positions which can be triggered by external GPIO input. When setting preset position 1 at wide-angle camera image, the telescopic camera shows the image at the preset position. After setting, action of moving to the preset position 1 can be triggered by GPIO input 1 at SV2018.

G \ Advance

Go to advance setting

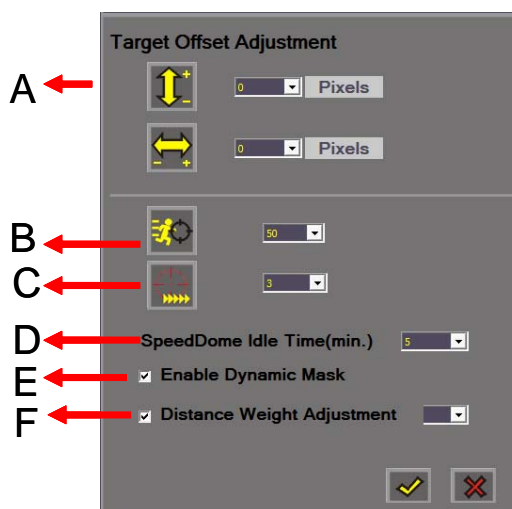


H \ : Save

Apply the new parameters

I、 : Exit

Advance setting



A、Fine adjustments of targets



: Vertical

Vertical fine adjustment of targets. Upward is positive.



: Horizontal

Horizontal fine adjustment of targets. Rightward is positive.



B、: Target location prediction

Predict the location of targets by assigning an extra movement.



C、: Track Speed(times/sec)

Set the target tracking frequency.

D、Speed dome idle time (Min.)

SV2018 camera accepts speed dome keyboard controller (PTZ controller) command. SV2018 will automatically go back to Auto Tracking Mode after the pre-determined idle time has been passed without any PTZ command.

E、Enable Dynamic Mask

Dynamic mask will temporary mask off the last target area to increase the priority of next moving target and the probability to be captured. This function greatly improves the 'hit rate' of all moving targets.

F、Distance Weight Adjustment

The image size of a target is proportional to the distance between the target

and the camera. The further the target, the smaller the image is. Distance weight function makes the adjustment to correct this ill effect so that all targets of the same size have equal opportunity to be captured regardless of the positions of the targets.

Default distance weight setting is 3. The smaller is the weight, the less is the adjustment. The maximum weight is 4.

Dynamic masking and distance weight can significantly improve the tracking efficiency of SV2018, about 10% to 20%. We strongly recommend enabling both functions.

Notes for motion detection :

Detection setting:

First, set the size of the targets that will trigger detection. The resolution for the whole screen is 320X240. If the targets at a distance need to be tracked, smaller sizes should be selected. Or, if the target needs to be tracked only when it is near the camera, large target sizes should be selected to reduce the miss-firing rate.

Setting sensitivity:

Variable environments of camera modules can be installed; different sensitivity settings are required for best results.

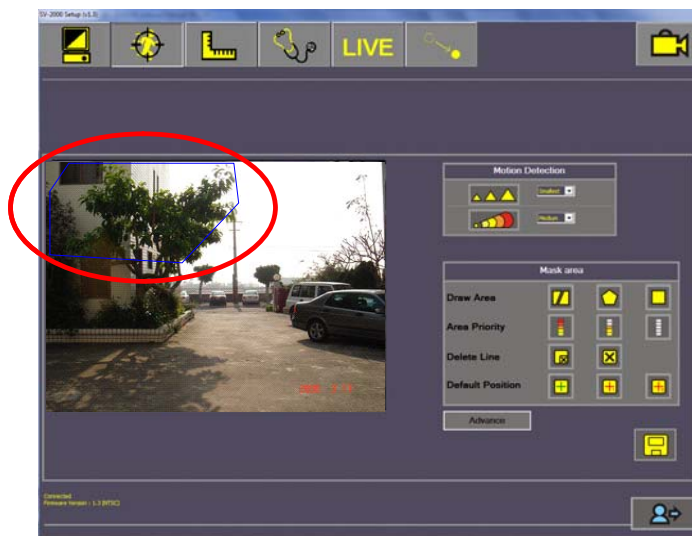
Masking:

Within the wide angle image, you may have areas of different levels of importance, such as the main gate or the reception desk, which you want to emphasize, or swaying trees and flags, which you want to neglect. Masking can be used to assign different priorities to areas within the wide angle view in order to improve the tracking efficiency or reduce the rate of miss-firing. Half transparent yellow areas indicate "Low priority area". Targets within this area have less chance to be detected. Half transparent black areas indicate "No detection area". Targets within this area will not be detected at all.

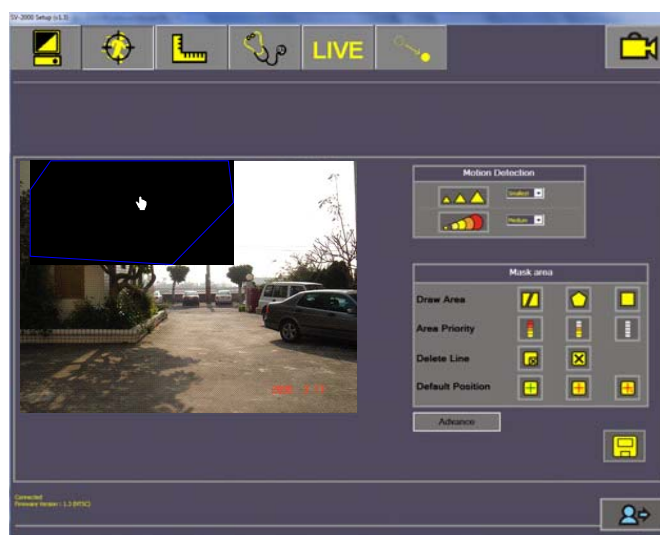
Application Examples :

Masking interferences

Step 1. Mark the interferences, such as swaying trees or flags, by drawing a polygon around it.



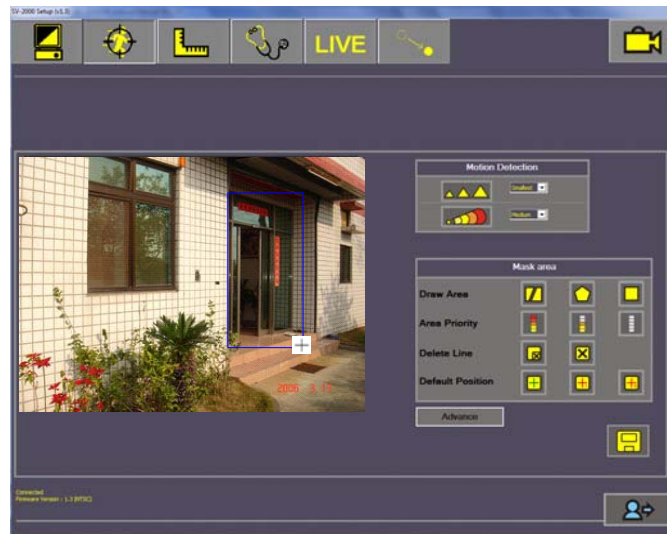
Step 2. Select No detection and press within the polygon area, the area will change to black indicating a no detection area.



Setting important areas

Step 1. It could be a counter area, or an entrance area.

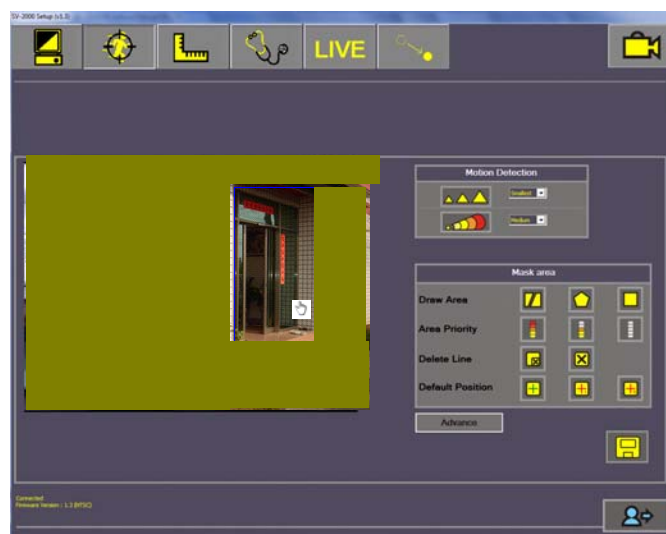
Select the area of importance by outlining it with a rectangle



Step 2. Select low priority



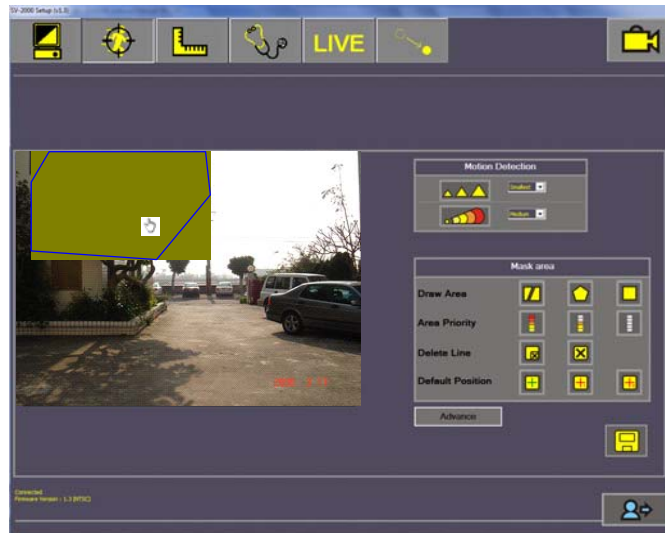
Step 3. Click outside the rectangle area, the area will change to yellow indicating a low priority area.



Change the priority of an area

Step 1. Select priority : normal  , low priority  , or no detect 

Step 2. Select the area to have a different priority

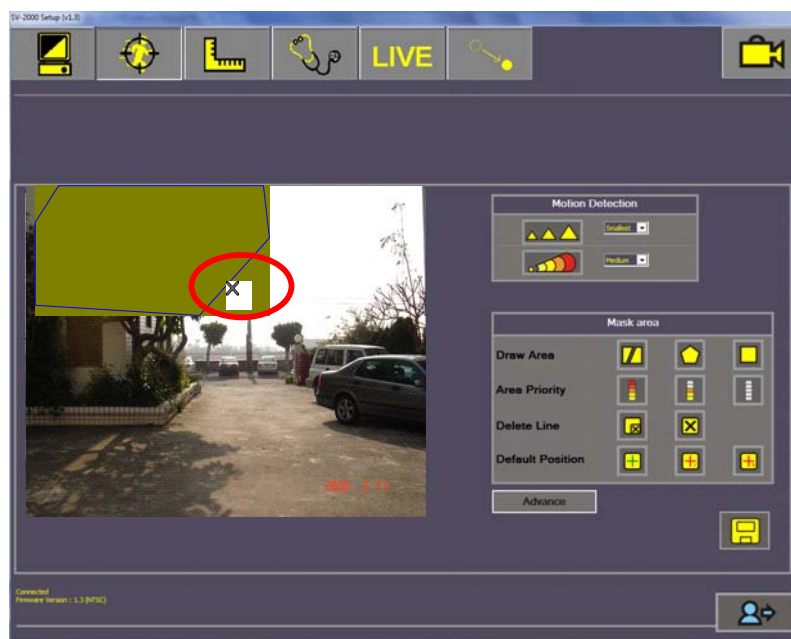


Delete one line group

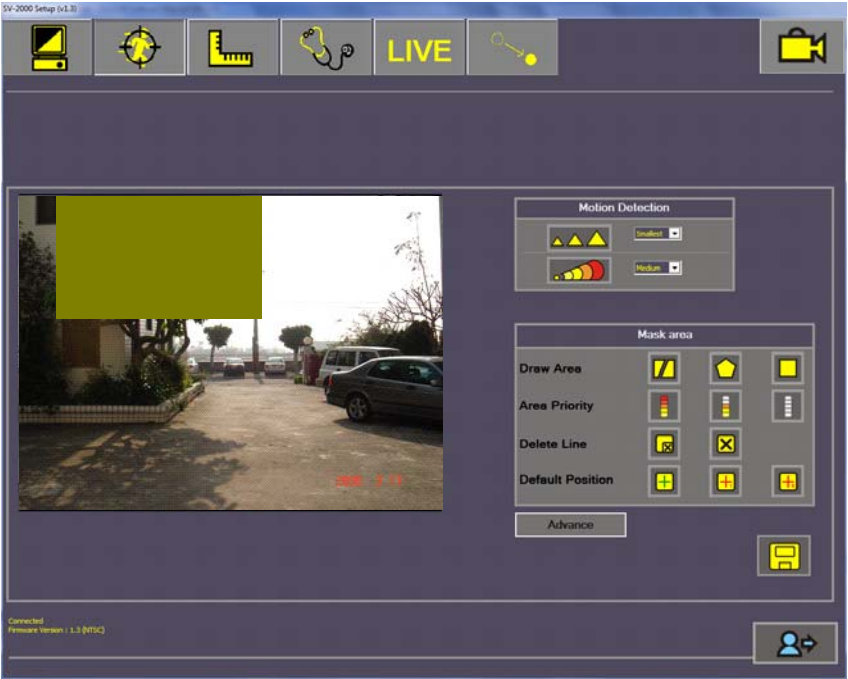
Step 1. Select delete one line group



Step 2. Select the line group, a rectangle, a polygon, or a simple line, and click the left mouse button to delete the line group.



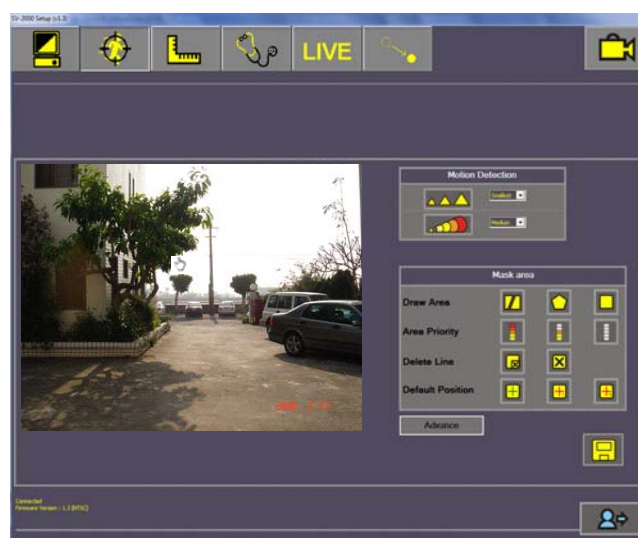
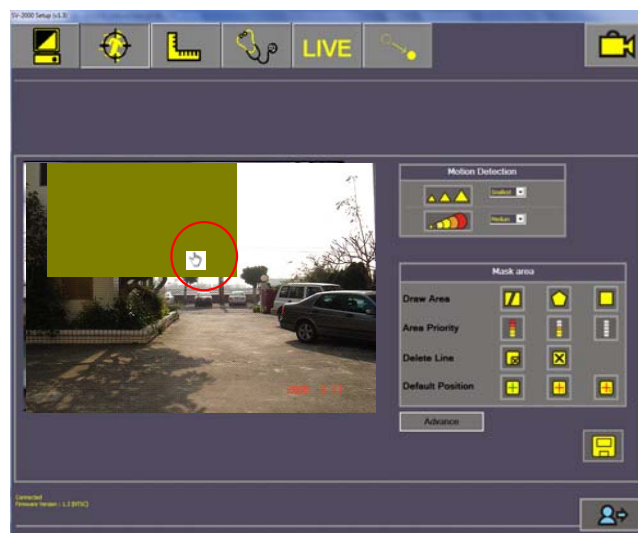
Note: When deleting a line group, only the lines (blue frame) are deleted. The area that has been assigned priority will remain unchanged.



Step 3. In order to completely remove the priority setting, normal priority



needs to be re-assigned to the area, in addition to deleting the lines



Default telescopic camera position

The telescopic camera will return to the default position after 15 seconds of no motion detected.



Step 1. Please click  Default Telescopic Camera Position



Step 2. Please click on the left image (wide angle image) with green cross as the default telescopic camera position. If there is nothing moving for more than 15 second in the surveillance area, the telescopic camera will go back to the default position.

3.4 Calibration



- A 、 Wide-angle Camera image
- B 、 Calibration points, status
- C 、 Data writing
Store the calibration parameters to the camera.
- D 、 Switch video images
The telescopic image should be on the right side and wide-angle image should be on the left side. Make the switch if necessary.
- E 、 Auto tracking mode
When enter this installation software, it is automatically at setup mode. Push this button to enter auto-tracking mode in order to try out the accuracy of auto-tracking. Or, the SV2000 will turn back to Auto Mode after exiting the installation software.
- F 、 Setup mode
SV2000 can be switched to Setup Mode by pressing this button. All functions of this installation software can only be active at Setup Mode.
- G 、 Control panel
Adjust the direction of telescopic camera. Press outer ring for big movement, or inner ring for small movement.
- H 、 Telescopic Camera image
- I 、 Calibration Default
Restore the factory default calibration parameters.

How to Use

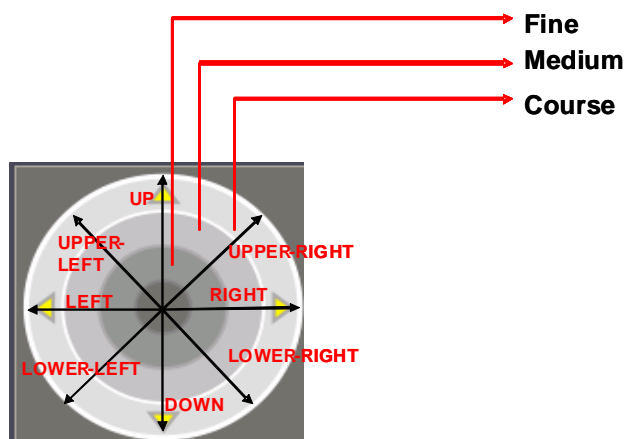
Step 1. Choose the Calibration Point

Click on the Calibration Point on the wide angle view by using the left mouse button. The target must have a distinct feature such as a chair, air conditioner, window, tire, or a head light of a car etc. It is better to select a corner of the object, to improve calibration accuracy.



Step 2. Aim at the Calibration Point

Use the control panel to aim the center cross of the Telescopic Camera View to the Calibration Point. The control panel has eight directions: up, down, left, right, upper-left, upper-right, lower-left, lower-right and three displacements: fine, medium, and course from inner to outer.



Step 3. Complete the first Calibration Point

When the center cross of the Telescopic Camera View aligns with the Calibration Point of the Wide Angle Camera View, press the set



button, OK will appear. This means the first Calibration Point is done.

**Step 4.** Repeat Step 1~3

Repeat Step1~3 until all 9 Calibration Points are completed with OK.


Notice: Calibration Points are better positioned in all 9 blocks, Up to 2 Calibration Points maximum in one block. Calibration Points should not be too close to the edge.



Step 5. Test

Click on the Wide Angle Camera View randomly, and see if the target is in the center of the telescopic camera view. If the target is too far from the center of the telescopic camera view, calibration needs to be done again.

Step 6. Save Settings

If calibration is done properly, Click the save button  to complete. .

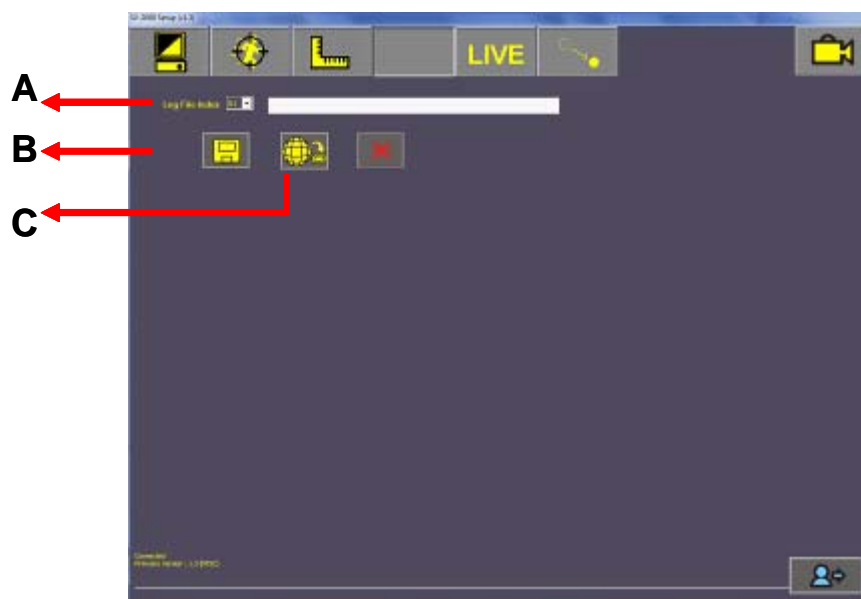
Step 7. Settings saved

When saving of the settings has been completed, a message box will show you that saving has completed. Now calibration has been completed.

Step 8. Test Again

Click on the Wide Angle Camera View randomly, and see if the target is in the center of the telescopic camera view, If the target is too far from the center of the telescopic camera view, repeat step 1~7.

3.5 Misc.



A 、 Log Index

Select the page number of log files to be saved. The newest one is at the bottom.



B 、 Save Log

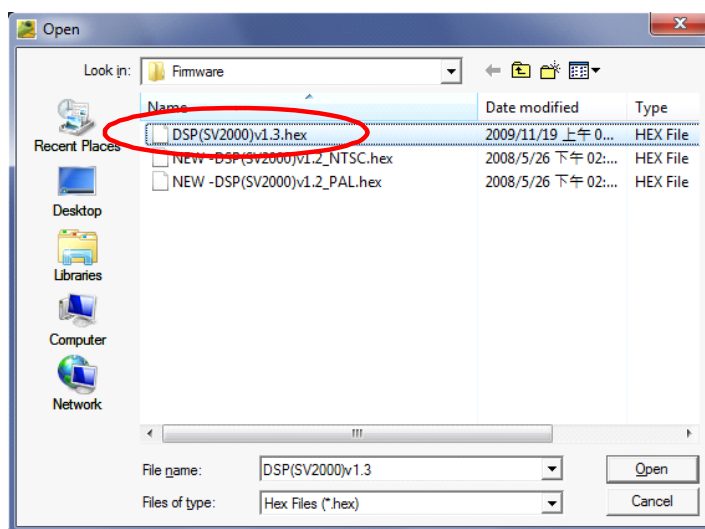
Select the largest number (latest) in log file index and push this button to save the log file to NB PC. Send this log file to Sunvision for diagnosis.

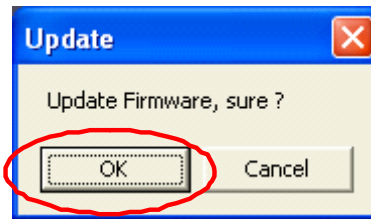
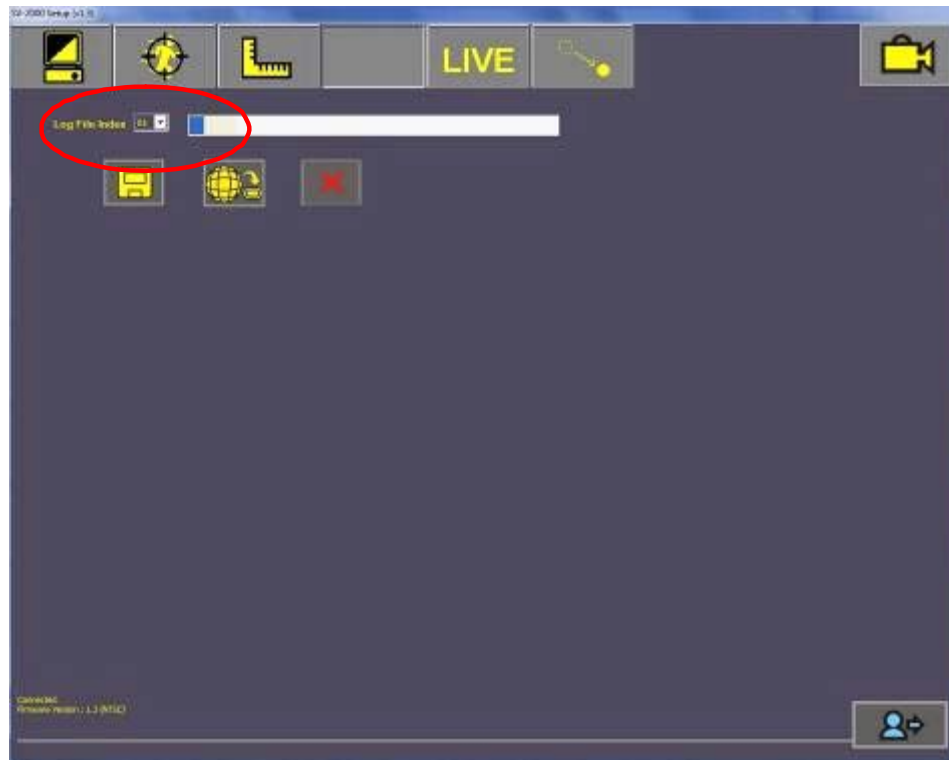
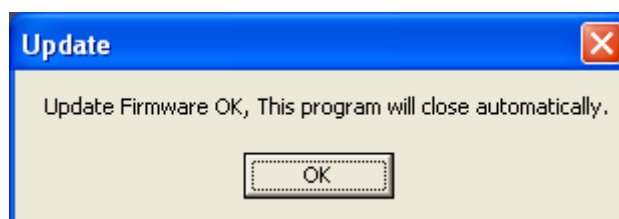


C 、 Update Firmware

Update the firmware of the DSP card. Open the hex file which you want to update and chose OK to update the firmware.

Step 1. Open Firmware hex file



Step 2. Select OK**Step 3. Wait till process done. This will takes about 5 min.****Step 4. Firmware update done**

3.6 **LIVE** LIVE

This page shows the real camera active display.



3.7 Preset Position



Like speed dome camera, SV2000 can set 16 preset positions which can be triggered by RS485 commands.

How to Use

There are two kinds of method to set preset position. First one is setting by this software preset position page. The other one is setting by keyboard controller.

Software tool setting:

1.) Setting

Push the left button of mouse on P1 and drag and move to the position where you want to monitor on the wide angle view. Then release the button to finish the setting. The telescopic view will appear the room image. The P1 indicator will turn the color from yellow to red.

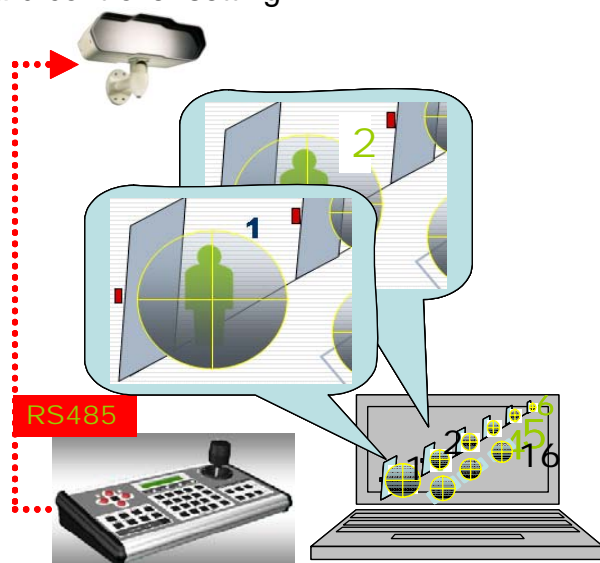
2.) Clear setting

Push the left button of mouse on the wide angle view at P1 and drag and move out the wide angle view area. The P1 will disappear and the color of P1 indicator will go back to yellow.

3.) Reposition setting

Push the left button of mouse on the wide angle view at P1 and drag and move to the new position desired.

Keyboard controller setting



1.) Setting:

1. To connect to the camera by Keyboard controller. Setting the camera ID by "NUM" + "CAM".
2. Touch the joystick or push the "OPEN" button. The SV2000 will enter "Speed Dome Mode" and be controlled by joystick keyboard.
3. Using joystick to move the telescopic camera to the position where you want to monitor. Setting the preset position by keyboard follows the steps: "Key-PROG" + "NUM" + "SHOT" + "ON" + "KEY-OFF".
4. To view the settings follow the step: "NUM" + "SHOT" + "ACK".
5. Finish setting to press the "close" button. Connecting SV2000 software tool & enter preset position page. You can see the setting on the wide angle view.

Operation List







Camera ID	"NUM" + "CAM"
Setting	"KEY-PROG" + "NUM" + "SHOT" + "ON" + "KEY-OFF"
Clear	"KEY-PROG" + "NUM" + "SHOT" + "OFF" + "KEY-OFF"
Move	"NUM" + "SHOT" + "ACK"
Speed Dome Mode	"OPEN"
Normal Active	"CLOSE"










2.) Clear Setting:

You can clear the setting by keyboard controller follow the step:
 "OPEN", "KEY-PROG" + "NUM" + "SHOT" + "OFF" + "KEY-OFF".

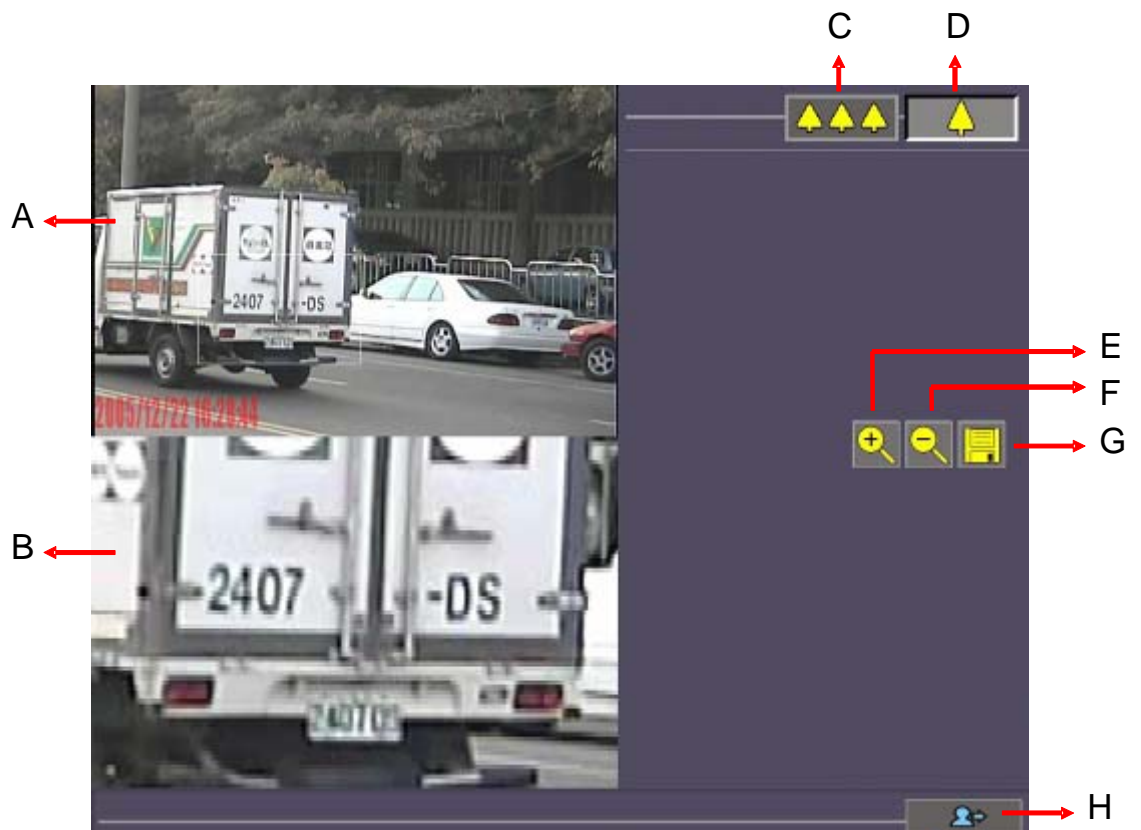
3.8 Replay



- A.  : Last File
Replay last file
- B.  : Reverse
Reverse replay
- C.  : Pause
Pause replay
- D.  : Play
Replay the recorded file
- E.  : Stop
Stop replay
- F.  : Next File
Replay next file

- G.  : 10 Frames Backward
Go back 10 frames. While held, it will go back continuously.
- H.  : 1 Frame Backward
Go back 1 frame. While held, it will go back continuously.
- I.  : 1 Frame Forward
Forward 1 frame. While held, it will go forward continuously
- J.  : 10 Frames Forward
Forward 10 frames. While held, it will go forward continuously.
- K.  : Slower
Reduce the replay speed
- L.  : Normal
Replay at normal speed
- M.  : Faster
Increase the replay speed
- N.  : Snap
Save the current image in C:\SunVision\Picture
- O.  : Save & Exit
Exit replay

3.9 : SNAP



A. The snap image

B. Zoom image

C.  : Wide Angle Image

D.  : Telescopic Image

E.  : Zoom In

F.  : Zoom Out

G.  : Save

H.  : Exit

Note: You can select an area to zoom in to by using the mouse to select the area of interest

