
DH Network Camera AI manual

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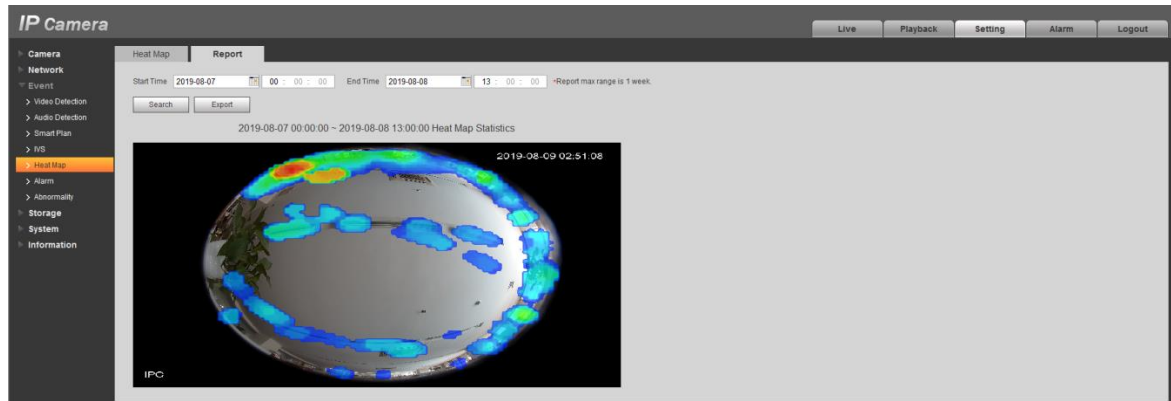
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1 Heat Map

1.1 Function Description

Supports statistics of accumulative population density within the camera's coverage in the preset period and displaying the density levels with different colors. The colors that represent crowd density in a descending order are red, orange, yellow, green, and blue. Red corresponds to the highest accumulative density and blue the lowest. See Figure 1-1.

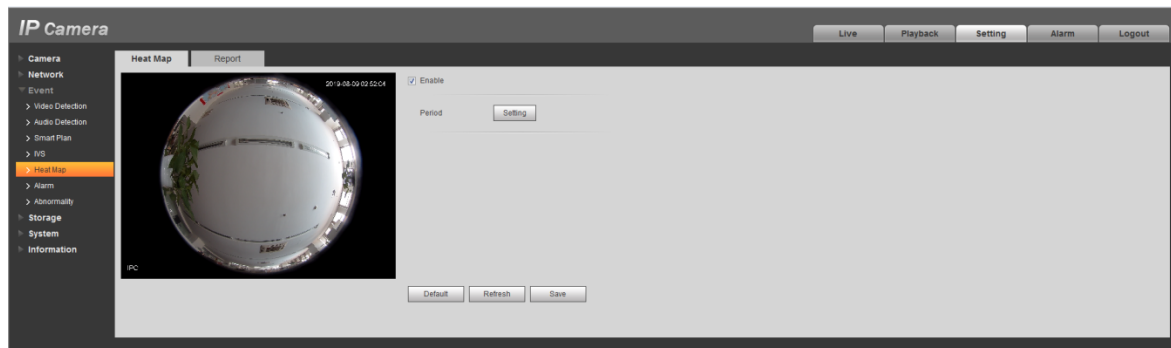
Figure 1-1



1.2 Operation

Log in to web interface, and then select **Setting > Event > Heat Map**. The **Heatmap** interface is displayed. See Figure 1-2.

Figure 1-2



1.3 Optional Functions

- Set the arming/disarming time (all day long by default).
- Select **Report** tab, and click **Search**. The search results are displayed. Click **Export** to export the pictures (pictures are stored by hour).

Note: The heat map function now stores heat map data for seven days. Data stored seven days earlier is loop overwritten by hour. If selecting the rotation mode, the previous heat map data is cleared. Active data generated beyond the arming period does not count.

2 Rotation Mode

2.1 Function Description

This function is suitable for indoor use to respond to user's demands on monitoring coverage. For example, if installed in a room, the video image can be rotated horizontally to give wider coverage; if installed in the corridor, the video image can be rotated vertically to offer deeper coverage.

Example of Rotation

The monitoring scenes by default cover rectangular areas with the horizontal sides longer than the vertical sides. See Figure 2-1.

Figure 2-1 Default angle



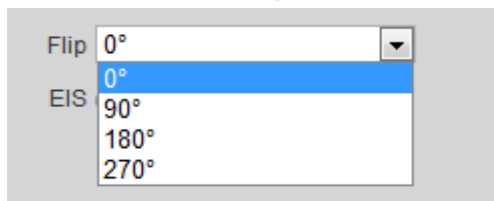
In narrow and long scenes like corridor, the left and right sides typically need no monitoring (for a corridor, both the left and right sides are walls), and deeper coverage is required. See Figure 2-2.

Figure 2-2 Rotate by 90° (the rotation mode) so that the monitored vertical distance is longer than the horizontal distance



2.2 Operation

Log in to web interface, and then select **Setting > Camera > Conditions > Picture > Flip**.



You can select the degree that the video image will be rotated. Select **90°**, and if the camera is traditionally installed (default), the video image will be rotated 90°, shown as Figure 2-3. To display the image in a normal way, rotate the camera by 90° anti-clockwise in advance during installation.

Application: If selecting **90°** on the web interface, rotate the camera by 90° anti-clockwise in advance during installation.

Figure 2-3 Default installation



3 Electronic Image Stabilization (EIS)

3.1. Function Description

Estimate the motion vector of the current frame, and then compensate about 10% of the estimated motion vector for the current frame to stabilize the image sequence, effectively reducing or even eliminating image dither.

3.2. Operation

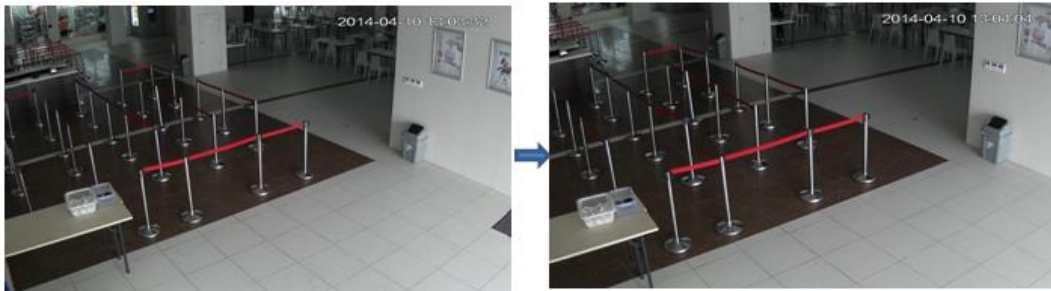
Log in to the web interface, and then select **Setting > Camera > Conditions > EIS** (On/Off)



3.3. Notes

- After enabling EIS, the view around the video image reduces by about 10%. See Figure 8.
- After enabling EIS, dither is visible at the edges of the image in a dynamic scene.

Fig 3-1 Images before and after enabling EIS



4 Defog Mode

4.1. Function Description

Increases the contrast ratio to maintain the clear images in foggy conditions.

4.2. Operation

Log in to web interface, and then select **Setting > Camera > Conditions > Defog** (off/auto/manual)

Figure 4-1 Images before and after enabling the defog mode



4.3. Notes

In the defog mode, backlight compensation is disabled.

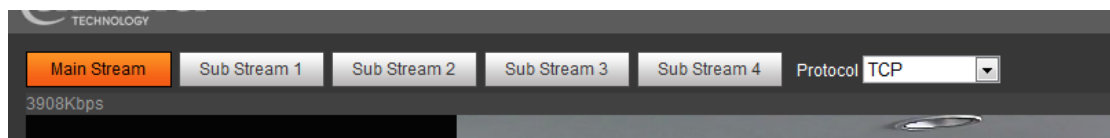
5 Five Stream Rates

5.1. Function Description

Supports independent encoding and output of five stream rates.

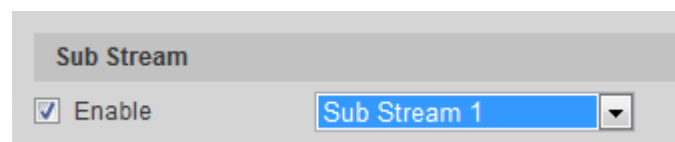
5.2. Operation

Log in to web interface, and then select **Setting > Camera > Video > Main Stream/Sub Stream 1/Sub Stream 2/Sub Stream 3/Sub Stream 4**.



5.3. Notes

Sub stream 2–4 are disabled by default, and need to be manually enabled.



6 SVC Encoding

6.1. Function Description

Changes the reference sequence of P frames, and gives different weight values to P frames at different levels.

6.2. Operation

Log in to web interface, and then select **Setting > Video > SVC (1/2/3/4)**

7 Encoding Region of Interest (ROI)

7.1. Function Description

In a specified region, images can be compressed and encoded at a higher image quality level. In the H.264 mode, every coded macro-block has specific quality value that represents the sharpness of the image. The macro-blocks in the user-defined regions are higher in image quality than other regions, thus featuring better sharpness.

Advantages:

- (1) Reduced bandwidth: Lower stream of a single channel is required, so streams of more channels can be transmitted.
- (2) Reduced storage: Lower stream of a single channel is required, so longer recordings can be stored.

7.2. Operation

Log in to web interface, and then select **Setting > Camera > Video > ROI** (Enable/Disable and select the grade)

Figure 7-1 Enable ROI



7.3. Notes

- ROI provides a set of configuration options for five stream rates.
- You can draw up to 4 regions of interest that share the same set image quality (levels 1–6).

- The higher the image quality value, the better the image.
- ROI is available on select models. Different cameras might display different video images, and the actual product shall prevail.
- When stream rate and image quality are high, enabling ROI will not obviously improve the image quality of the ROI.
- When stream rate and image quality are low, enabling ROI will obviously improve the image quality of the ROI.

8 Audio Attributes

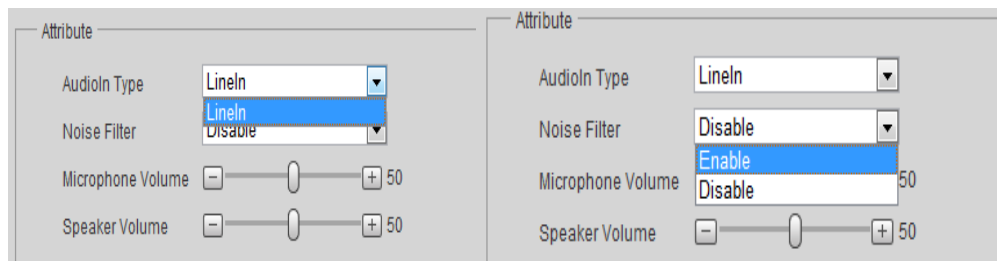
8.1. Function Description

- Noise filter: Filters white noises out of the background.
- Adjust microphone volume to adjust volume of audio input devices (Audio in/MIC); adjust speaker volume to adjust audio output volume.

8.2. Operation

Log in to web interface, and then select **Setting > Audio > Attribute**.

Figure 8-1 Audio operations



8.3. Notes

- To avoid noise, mind the following when using the audio function:
 1. Plug the camera into power with a three-phase power port;
 2. The pickup only provides a power supply port, a ground, and an audio output port: The power supply port connects to power supply for the camera; the audio output port connects to the audio input of the camera, and the ground ports of the pickup and of the camera are also connected.
- To avoid squeal, mind the following when using the audio function:
 1. Control the distance between the pickup and the speaker, and reduce acoustic echo.
 2. Decrease the gains of the pickup or speaker.
 3. Use intercom semi-duplex communications.

4. Use professional echo-eliminating device.

9 Motion Detection

9.1. Function Description

After enabling motion detection, alarm will be triggered and alarm linkage action will be played if an object is detected moving at preset sensitivity level.

9.2. Operation

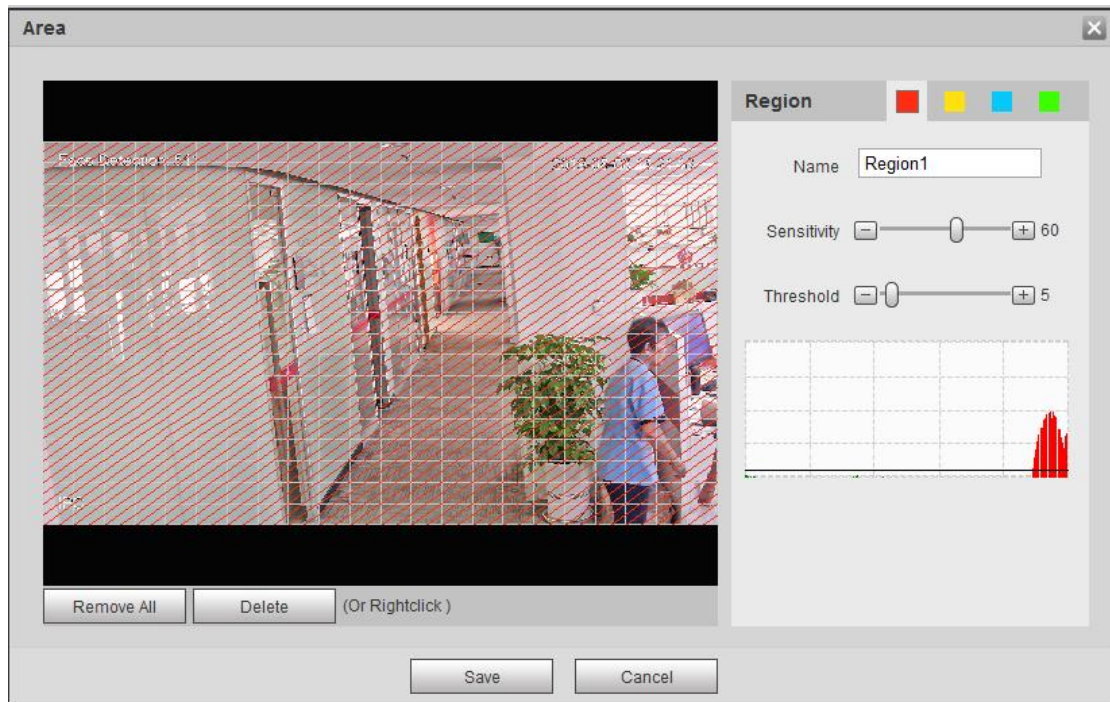
Log in to web interface, and then select **Setting > Event > Video Detection > Motion Detection**.

Figure 9-1 Motion detection

The screenshot displays the Dahua web interface for configuring Motion Detection. The left sidebar shows a navigation menu with categories: Camera, Network, Event (expanded), Storage, System, and Information. Under 'Event', 'Video Detection' is selected. The main panel has three tabs: 'Motion Detection' (active), 'Video Tampering', and 'Scene Changing'. The 'Motion Detection' settings include: 'Enable' (checkbox), 'Period' (Setting button), 'Anti-Dither' (input field with value 5, range 0-100), 'Area' (Setting button), 'Record' (checkbox), 'Record Delay' (input field with value 10, range 10-300), 'Relay-out' (checkbox), 'Alarm Delay' (input field with value 10, range 10-300), 'Send Email' (checkbox), and 'Snapshot' (checkbox). At the bottom, there are buttons for 'Default', 'Refresh', and 'Save'.

Set the name of the motion detection region, and the valid region for motion detection as needed. The sensitivity and the threshold can be set separately for each region. The higher the sensitivity, or the lower the threshold value, the more likely the motion detection alarm will be triggered. By default, the entire video image is the valid region covered by motion detection.

Figure 9-2 Detection region setting



9.3. Optional Functions

- Set the arming/disarming time (all day long by default).
- Set alarm linkage: Recording, alarm output, sending email, and capturing pictures.
- Supports anti-dither: In anti-dither period, only one motion detection event is recorded.
- Set the sensitivity to surrounding changes. The higher the sensitivity, the more sensitive to surrounding changes, and the easier motion detection alarm is triggered.
- Area threshold: The area threshold of the valid motion detection region. The lower the threshold value, and the easier the motion detection alarm is triggered.
If the motion detection region covers fewer than 100 grids, and the threshold value is A, then the required number of grids that triggers alarm is $100 \times A\%$;
If the motion detection region covers greater than 100 grids, and the threshold value is A, then the required number of grids that triggers alarm is A.

9.4. Notes

- Each color represents a separate area, and you can set different motion detection areas.
- For the area threshold of the valid motion detection region, the lower the threshold value, the easier the motion detection alarm is triggered.
- The red line in the waveform means that motion detection alarm is triggered, and the green line means not.

10 Video Tampering

10.1. Function Description

Video tampering alarm is triggered when the camera lens is intentionally shielded, or the video display is in a single color due to light.

10.2. Operation

Log in to **Web > Setting > Event > Video Detection > Video Tampering**

Figure 10-1 Video tampering

The screenshot shows a web management interface with a dark sidebar on the left containing a menu with categories: Camera, Network, Event, Storage, System, and Information. Under the 'Event' category, 'Video Detection' is selected and expanded, showing sub-items: Audio Detection, Smart Plan, IVS, People Counting, Face Detection, Video Structuralization, ANPR, Alarm, and Abnormality. The main content area has three tabs: 'Motion Detection', 'Video Tampering' (which is active), and 'Scene Changing'. The 'Video Tampering' tab contains the following settings:

- Enable Video Tampering Enable Defocus Detection
- Period: [Setting]
- Record
 - Record Delay: [10] s (10~300)
- Relay-out
 - [1] [2]
- Alarm Delay: [10] s (10~300)
- Send Email
- Snapshot

At the bottom of the settings area are three buttons: 'Default', 'Refresh', and 'Save'.

10.3. Notes

The video tampering alarm is triggered only when the entire video image is shielded.

11 Defocus Detection

11.1. Function Description

The alarm is triggered when video image gets blurred due to defocused camera lens.

11.2. Operation

Log in to web interface, and then select **Setting > Event > Video > Video Tampering**

Figure 11-1 Defocus detection

Motion Detection | **Video Tampering** | Scene Changing

Enable Video Tampering Enable Defocus Detection

Period

Record

Record Delay s (10~300)

Relay-out

Alarm Delay s (10~300)

Send Email

Snapshot

11.3. Notes

No absolute standard is in place that defines whether an image is clear, and the user needs to specify:

- If the user disables and then enables again defocus detection, the system recognizes by default that the image at this switch point is clear, and uses the image as the benchmark for subsequent detection.
- If the auto focus function is enabled, after auto focus completes, the system recognizes by default that the image at this point is clear, and uses the image as the benchmark for subsequent detection.
- If a focus scrollbar exists and dragging it to a position gets clearer image than auto focus, this manually adjusted image is used as the benchmark for subsequent detection.

12 Scene Changing

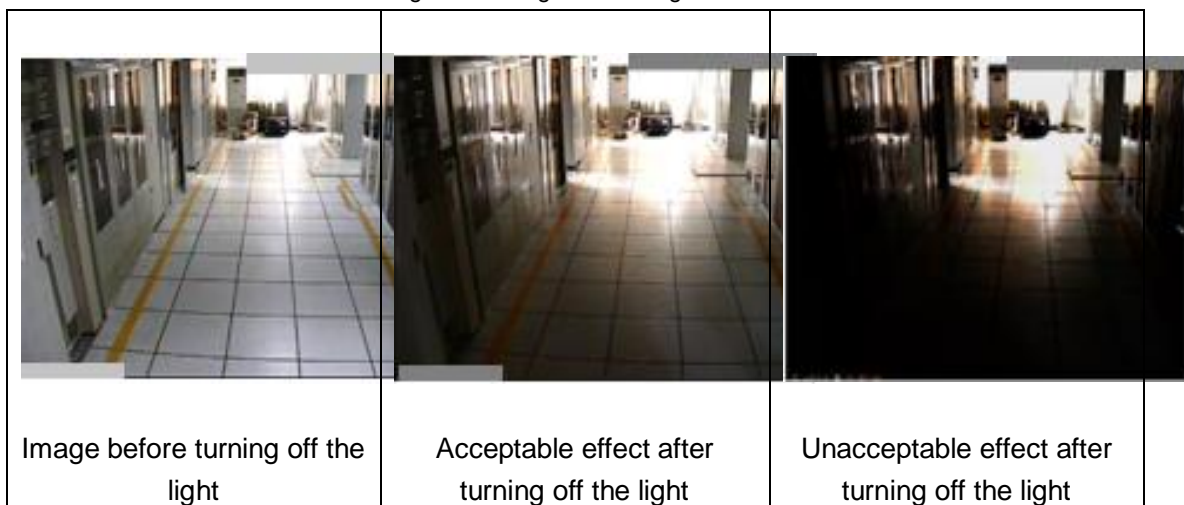
12.1. Function Description

The scene changing function detects anomaly to the monitored scenes because of that cameras are shielded or rotated, the light conditions change dramatically, and more. The intelligent database compares images before and after the cameras are shielded or rotated, and judges whether they share common features; if no matching exists, an alarm is triggered.

12.2. Requirements on Detection Points

- Avoid using scenes with dramatically different brightness when the light is turned on or turned off.

Figure 12-1 Light on and light off scenes



- The scene needs a fixed reference region with certain textures that is not blocked by a moving object;

In the scene shown on the left figure as follows, moving people take up most of the image and there is not a fixed region that can be used as the reference. This might results to mistaken reporting and is not suitable for scene changing detection; in the scene shown on the right figure, apart from moving people, there are fixed regions such as the ceiling and the wall, so the scene can be used for analysis.

Figure 12-2 Entrance and exit



- Avoid using this function in a tunnel or where the vehicle lighting is a big disturbing factor.

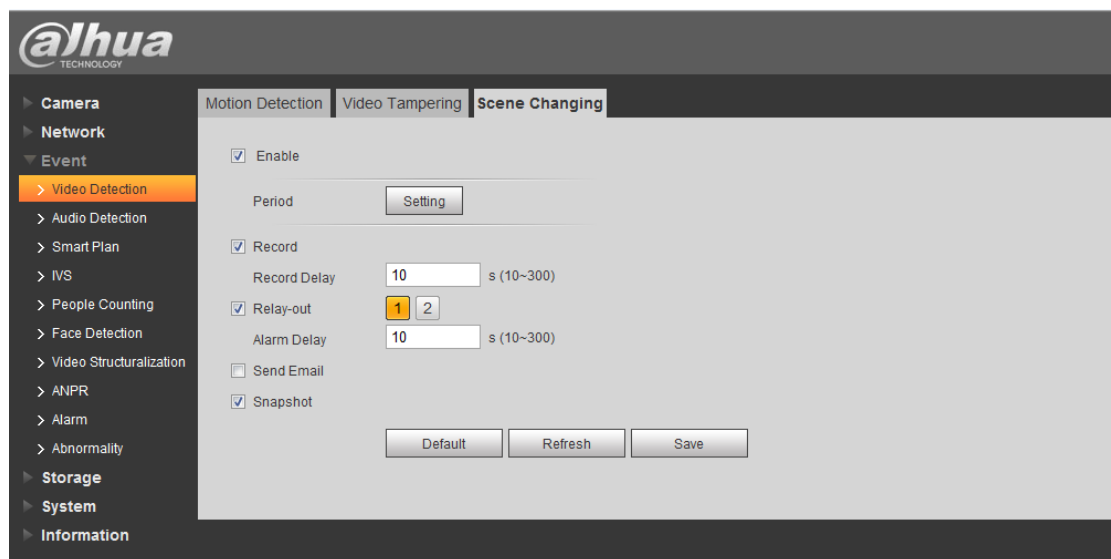
Figure 11-3 Scenes with vehicle light disturbance



12.3. Operation

Log in to web interface, and then select **Setting > Event > Video > Scene Changing** (Figure 12-4)

Figure 12-4: Scene changing



12.4. Optional Functions

- Set arming periods. All day arming is set by default. (all day long by default)

-
- Support setting alarm linkage: Record, alarm output, send email, and capture pictures.

13 Audio Detection

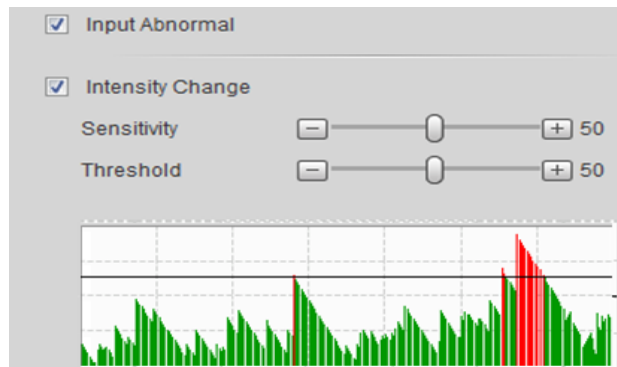
13.1. Function Description

Mainly aimed at abnormal abrupt sound intensity changes such as no audio input, electric current sound: Alerts to abrupt squeal. Audio detection is triggered only when the Ep value obtained by calculating the audio energy and frequency is greater than the threshold value.

13.2. Operation

Log in to web interface, and then select **Setting > Event > Audio Detection**

Figure 13-1: Audio detection



13.3. Notes

- The sensitivity setting is aimed at abnormal audio input
- The abrupt change threshold is set for abrupt changes to the sound intensity. The audio graph is in real time. If the abrupt change value ΔE_p is greater than the threshold value (in red), an alarm is triggered; **the abrupt change value ΔE_p lower than the threshold value does not trigger an alarm.**

14 Auto Back Focusing (ABF)

14.1. Function Description


The appearance of Standard 4 and Standard 5 supports auto back focusing, and one-click minor focusing adjustment.

14.2. Operation

- Operate the ABF button on the back panel of the bullet camera. See Figure 14-1.

Figure 14-1 ABF back panel button



- Log in to web interface, and then select **Live View** > Lower left corner  > **Auto Focusing**

14.3. Notes

The focus length of back focus is only **2mm**. The precondition for using the ABF is manually adjusting the lens until the image becomes relatively clear.

15 Zoom and Focus

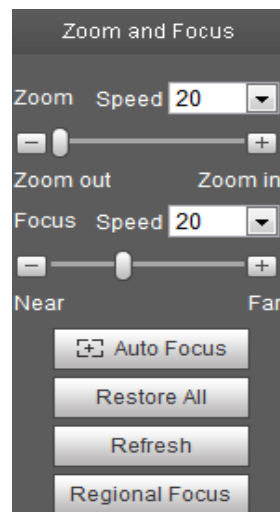
15.1. Function Description

Frame select the ROI as the focus for auto focusing. This function only applies to electric zoom lens.

15.2. Operation

Log in to web interface, and then select **Live View** > Lower left corner  > **Zoom and Focus**

Figure 15-1 Zoom and focus



- Click the Regional Focus to draw frames in the Live View interface. The framed region becomes the focal point for auto focusing.
- Click the regional focus again and frame drawing stops. The button color goes back to normal.

15.3. Notes

A too close object is hard to become clear after focusing. The actual focal length of the lens shall prevail.

16 Abandoned Objects/Missing Objects

16.1. Function descriptions

The function of abandoned/missing objects detects whether persons, vehicles, or belongings are left over or disappear in some regions of the monitored scene. If the object stays or disappears for a longer time than the specified time, an alarm is triggered.

16.2. Requirements on Detection Points

- Installation Height

Give the camera's visual angle a **certain depression degree (usually above 20 degrees); to avoid mutual blocking and sticking between monitored objects** that result in false or missing alarms. Install the cameras at least 3 m above the floor in indoor applications, and 5–10 m in outdoor applications. When used to monitor a wall, the cameras must be installed higher than the wall. The cameras must be firmly installed. Wobbling cameras can distort the analysis results.

- Object Size

The object shall not account for more than 10% of the overall image, and the object size shall not exceed **15 × 15** pixels (CIF). The height and width of the object must be within 1/3 of the height and width of the image; the object height is recommended to be around 10% of the image height.

- Motion Trace (for intelligent detection with motions only)

The monitoring direction of the camera shall be vertical to the motion direction of the object as much as possible, to make the move of the object more obvious and easier to be detected. Also, make sure the object **is present continuously for over 2 s** in the vision, **the object moves for a distance exceeding the width of the object** and crosses the detection line. The detected region shall be free from blocking. The motion buffer regions at the two sides of the cordon line shall be big enough so that the object does not get out of the detected region too soon.

- Background & Lighting

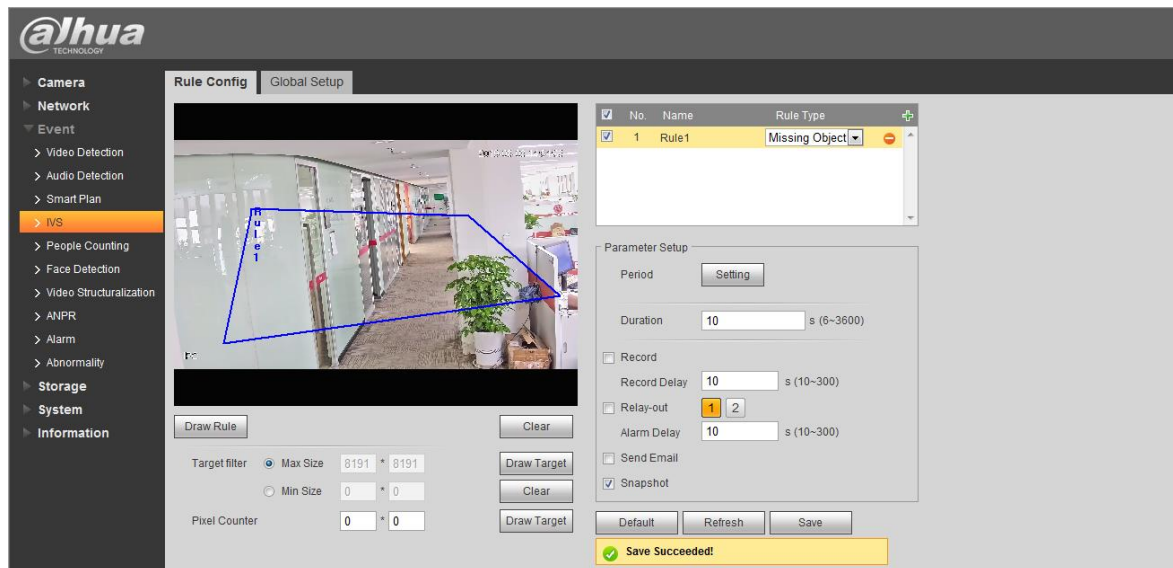
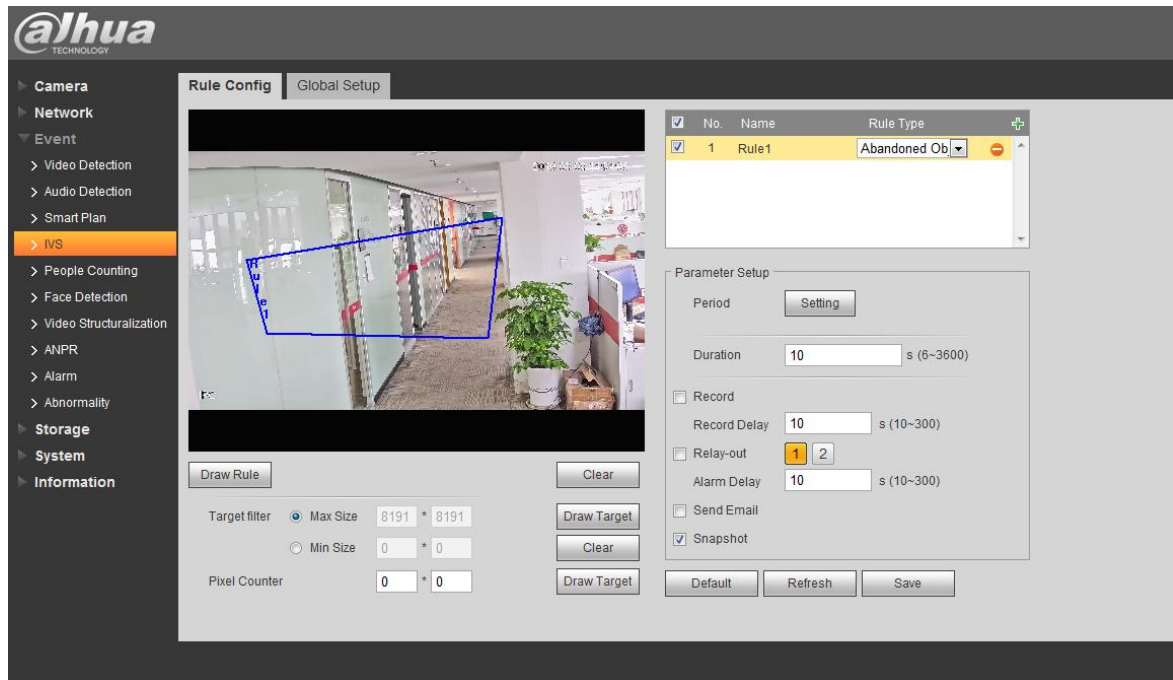
The testing devices must avoid installation against backlight, and the image is better not to include the sky; otherwise, the image can either be too bright or too dark in some areas, which is not helpful for the detection. The brightness difference between the object and the background shall be at least 10 gray scales.

If possible, minimize the complexity of the scene for monitoring and analysis. **The use of intelligent analysis is not recommended in scenes where the objects are dense, and lighting changes frequently; avoid glass reflection, ground reflection, water surface reflection; avoid regions with interference from branches, shadows, and insects.** If fill light is needed, keep the fill light and the test device at least 2 m away.

16.3. Operation

Log in to web interface, and then select **Setting > Event > IVS > Abandoned Objects/Missing Objects** (Figure 16-1)

Figure 16-1 Configurations of the abandoned objects/missing objects



16.4. Optional Functions

- Set the Min. duration. This is the time of the object staying or disappearing that triggers an alarm.
- Set arming periods. All day arming is set by default.
- Support setting alarm linkage: Record, alarm output, send email, and capture pictures.
- In Target filter, the maximum and minimum detectable objects can be set.

16.5. Notes:

- The system counts the static parts of the foreground and determines according to the similarity between the foreground and the background whether an object is removed or left over. If the status continues for the user-defined time, an alarm is triggered. The system relies on the similarity between the foreground and the background to determine whether an object is left over or disappears. If both the foreground and the background are complex, the system might misjudge.
- If a person or a vehicle stays motionless for too long, the system also generates an alarm of an abandoning case. To filter out such alarms, the object size can be set to exclude persons and vehicles, since they are typically much larger than abandoned objects. Another solution is to properly extend the alarm time to avoid temporary stay of persons being mistakenly reported as an abandoning case.

17 Loitering Detection

17.1. Function Description

Loitering detection records the stay time of targets in the alarm region. If the target stays longer than the minimum alarm time that has been set, the alarm will be triggered; regardless of the trace and characteristics of its motion, the alarm is triggered.

17.2. Requirements on Detection Points

- Installation Height

Set a **depression angle** (usually above 20 degree) for the camera, which can **avoid the false and missing alarms caused by mutual blocking and sticking between targets**; install the cameras at least 3 m above the floor in indoor applications, and 5 –10 m in outdoor applications; when used to monitor a fence, the cameras must be installed higher than the fence. The cameras must be firmly installed. Wobbling cameras can distort the analysis results.

- Target Size

The target shall not account for more than 10% of the overall image, and the size shall not exceed **10*10** pixels (CIF). The height and width of the target must be within 1/3 of the height and width of the image; the target height is recommended to be around 10% of the image height.

- Moving Trace

Try to keep the monitoring direction vertical to the moving direction, to make the -moving of the target more obvious and easier to be detected. Also, make sure the target **stays for more than 2 s** in the vision, **the target moves for a distance exceeding its width** and crosses the detection line. The detected region shall be free from blocking. The motion buffer regions at the two sides of the cordon line shall be big enough so that the target does not get out of the detected region too soon.

- Background & Lighting

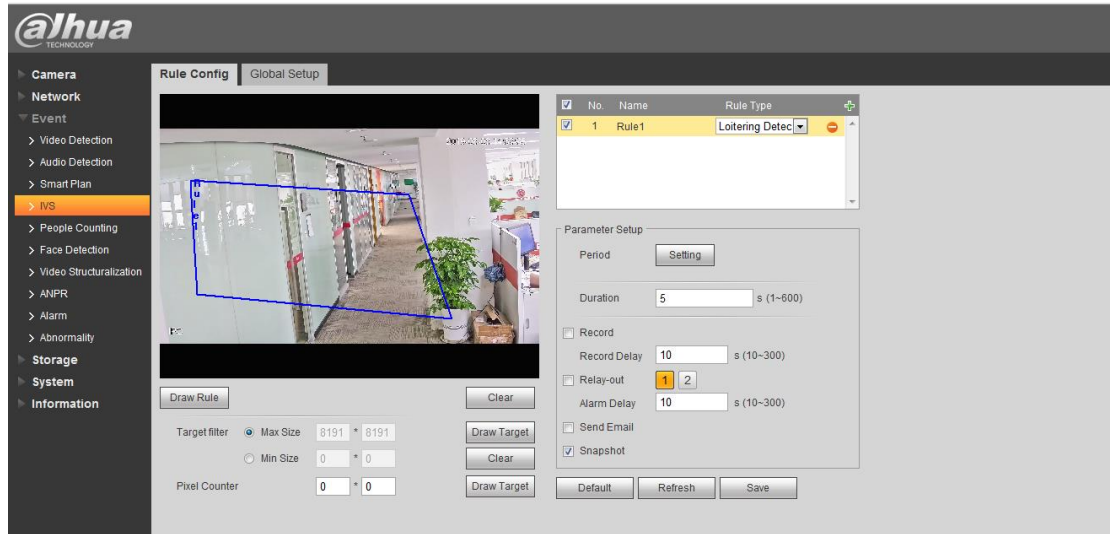
Do not install the device in backlight environment, and the image is better not to include the sky; otherwise, the image can either be too bright or too dark in some areas, which is not good for the detection. The brightness difference between the target and the background shall be at least 10 gray scales.

If possible, minimize the complexity of the scene for monitoring and analysis. **The intelligent analysis is not recommended in scenes where the targets are dense, and lighting changes frequently; avoid regions with glass reflection, ground reflection, water surface reflection; and regions with interference from branches, shadows, and insects.** If fill light is needed, keep the fill light and the device at least 2 m away.

17.3. Operation

Log in to web interface, and then select **Setting > Event > IVS**, and then select **Loitering Detection** as rule type. (Figure 17-1)

Figure 17-1 Loitering detection



17.4. Optional Functions

- Enter the duration. When the moving object exists in the alarm region for longer than this duration, an alarm is triggered.
- Set the arming/disarming time (all day long by default).
- Set alarm linkage: Recording, alarm output, sending email, and capturing pictures.
- In **Target filter**, the maximum and minimum detectable objects can be set.

17.5. Notes

Loitering detection does not trigger an alarm for a static object.

18 Crowd Gathering Detection

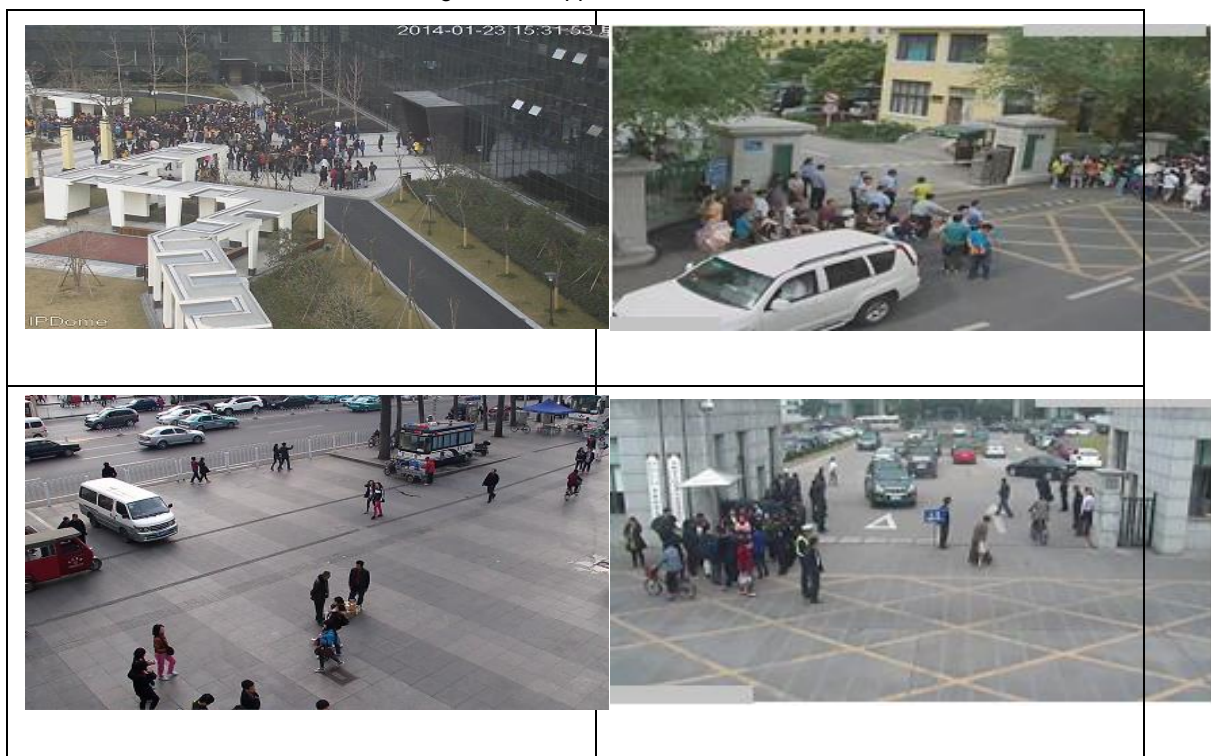
18.1. Function Description

The crowd gathering detection function detects and triggers an alarm for large groups of people staying in an outdoor square, at government buildings, or the entrance and exit of a station, or too dense crowds.

18.2. Requirements on Detection Points

- Example of an application: Applicable to a medium to long range scene, not a close-range one.

Figure 18-1 Applicable scene



- Avoid these scenes: Low installation height; individual persons account for a high percentage of the image; severely blocked objects.

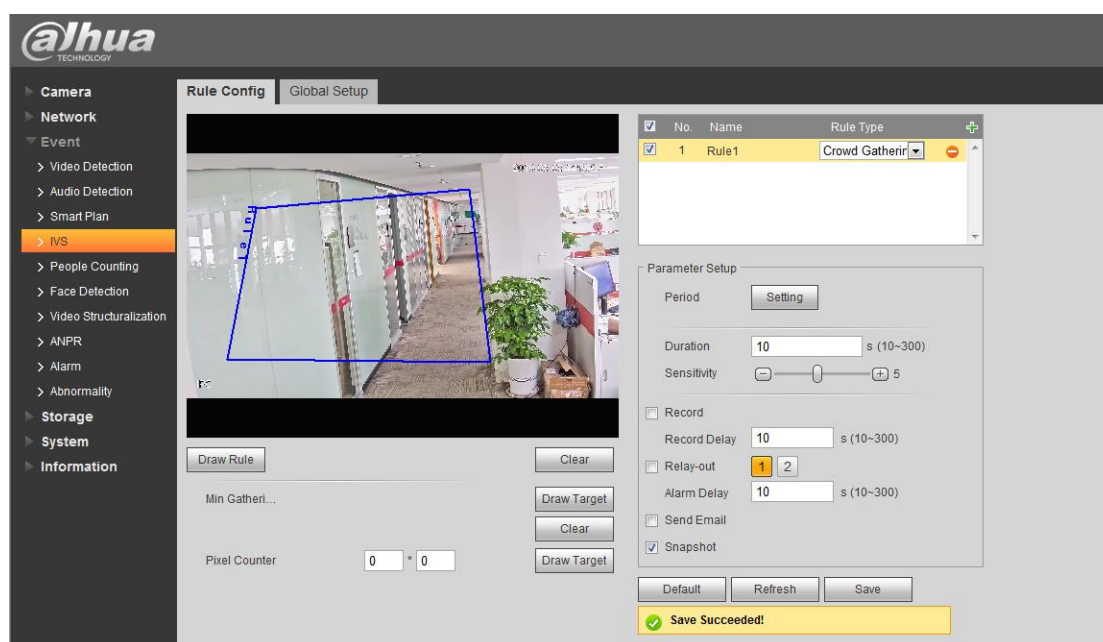
Figure 18-2 Not applicable scenes



18.3. Operation

Log in to web interface, and then select **Setting > Event > IVS > Crowd Gathering** (Figure 18-3)

Figure 18-3 Crowd gathering detection



18.4. Optional Functions

- Set the sensitivity from 1 to 10. The default sensitivity is 5.
- Set the duration. The default setting is 10 s to 300 s.
- Set the arming/disarming time (all day long by default).
- Set alarm linkage: Recording, alarm output, sending email, and capturing pictures.

18.5. Notes

Continuous shake of the camera, swinging of leaves and tree shades, frequent

opening or closing of telescopic doors, constant dense flow of vehicles and persons can all trigger false alarms.

19 Fast-Moving

19.1. Function Description

This function detects whether an object moves quickly in a specified detection region, and triggers video recording, capturing pictures, and alarm based on the detection result. The higher the sensitivity, the lower the minimum speed that triggers fast-moving alarm, and so the easier the alarm is generated; the opposite is also true. Applicable to a scene where the objects are sparse and not obviously blocked, where the cameras are installed right above the monitored region. The monitored direction is perpendicular to the possible moving direction.

19.2. Operation

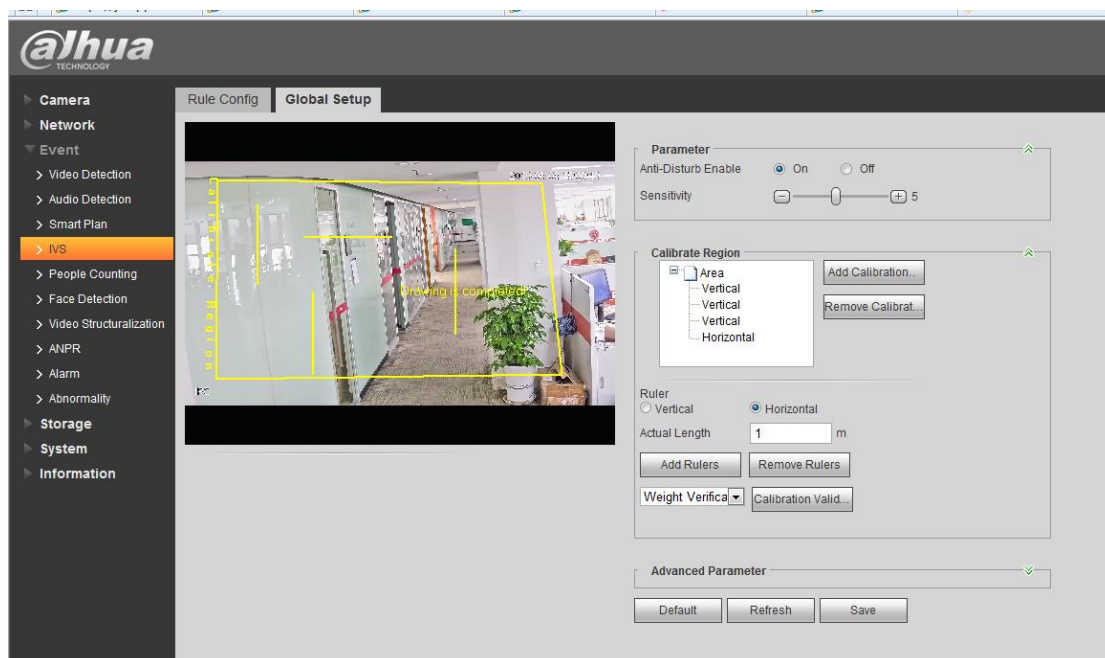
19.2.1. Global Setup

Before setting the "Fast-Moving" function, perform **Global Setup** first:

Log in to web interface, and then select **Setting > Event > IVS > Global Setup** (Figure 19-1 and Figure 19-2)

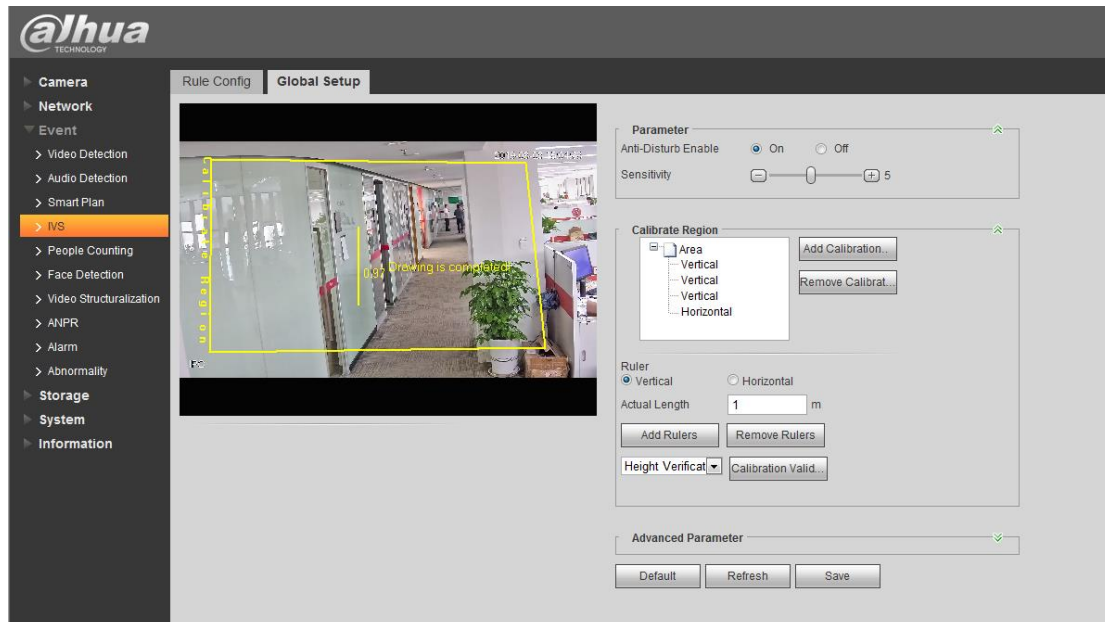
- a. Click **Add Calibration**, and then draft the region to be calibrated.
- b. Set the actual length of the reference object in the video.
- c. Click **Add Rulers**, and draft three vertical rulers. (Three vertical rulers are placed in the form of a triangle, with each ruler being the vertex.)
- d. Click **Add Rulers**, and draft one horizontal ruler.
- e. After drafting the rulers, click **Save** to complete the setting. See Figure 19-1.

Figure 19-1 Global setup 1



f. Click **Calibration Validate** for **Width Verification** or **Height Verification**, draft a line on the image; if values appear around the line that are close to the actual distance values, calibration is successful; otherwise, set the rulers again until the values are close to the actual distance values. See Figure 19-2.

Figure 19-2 Global setup 2

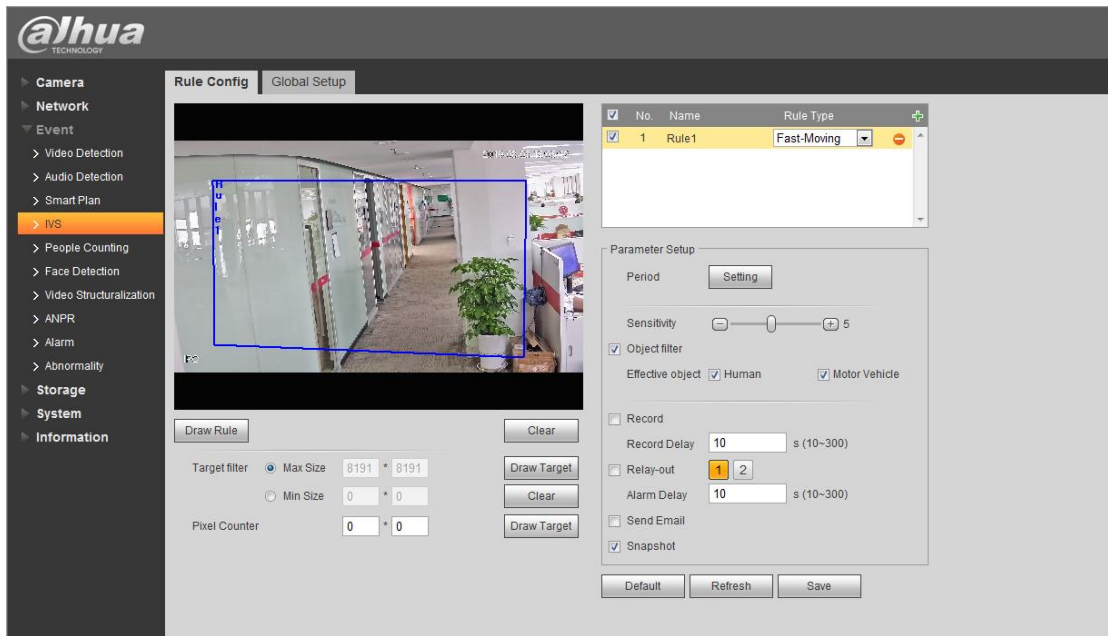


19.2.2. Fast-Moving

After **Global Setup**, configure **Fast-Moving**:

Log in to web interface, and then select **Setting > Event > IVS > Fast-Moving** (Figure 19-3)

Figure 19-3 Enable fast-moving



19.3. Optional Functions

- Set the sensitivity from 1 to 10. The triggering speed is linked with the sensitivity. Sensitivity values 1–10 correspond to the actual speed of 10–1 m/s.
- Supports person and vehicle classification and precise detection (persons, motor vehicles, and non-motor vehicles).
- Set the arming/disarming time (all day long by default).
- Set alarm linkage: Recording, alarm output, sending email, and capturing pictures.
- In **Target filter**, the maximum and minimum detectable objects can be set.

20 Parking Detection

20.1. Function Description

Parking detection judges whether an object stops based on its trace. If the object stays for longer than the preset time, the system generates an alarm and takes linked actions.

20.2. Requirements on Detection Points

- Installation Height
Set a **depression angle** (usually above 20 degree) for the camera, which can **avoid the false and missing alarms caused by mutual blocking and sticking between targets**; install the cameras at least 3 m above the floor in indoor applications, and 5 –10 m in outdoor applications; when used to monitor a fence, the cameras must be installed higher

than the fence. The cameras must be firmly installed. Wobbling cameras can distort the analysis results.

- Target Size

The target shall not account for more than 10% of the overall image, and the size shall not exceed 10*10 pixels (CIF). The height and width of the target must be within 1/3 of the height and width of the image; the target height is recommended to be around 10% of the image height.

- Moving Trace

Try to keep the monitoring direction vertical to the moving direction, to make the -moving of the target more obvious and easier to be detected. Also, make sure the target stays for more than 2 s in the vision, the target moves for a distance exceeding its width and crosses the detection line. The detected region shall be free from blocking. The motion buffer regions at the two sides of the cordon line shall be big enough so that the target does not get out of the detected region too soon.

- Background & Lighting

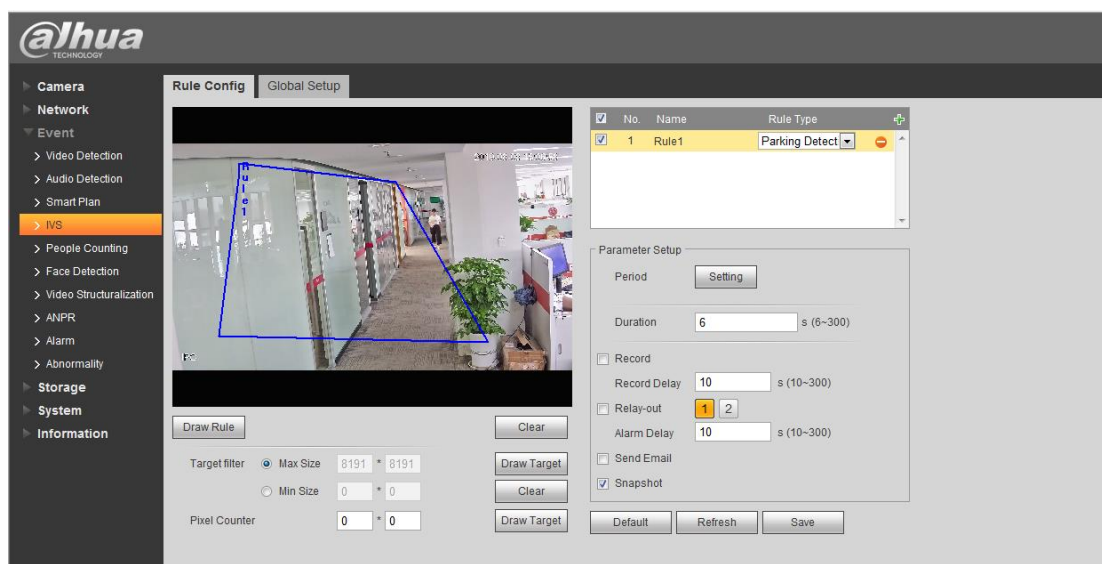
Do not install the device in backlight environment, and the image is better not to include the sky; otherwise, the image can either be too bright or too dark in some areas, which is not good for the detection. The brightness difference between the target and the background shall be at least 10 gray scales.

- If possible, minimize the complexity of the scene for monitoring and analysis. The intelligent analysis is not recommended in scenes where the targets are dense, and lighting changes frequently; avoid regions with glass reflection, ground reflection, water surface reflection; and regions with interference from branches, shadows, and insects. If fill light is needed, keep the fill light and the device at least 2 m away.

20.3. Operation

Log in to web interface, and then select **Setting > Event > IVS > Parking Detection** (Figure 20-1)

Figure 20-1 Parking detection



20.4. Optional Functions

- Enter the duration. When the moving object exists in the alarm region for longer than this duration, an alarm is triggered.
- Set the arming/disarming time (all day long by default).
- Set alarm linkage: Recording, alarm output, sending email, and capturing pictures.
- In **Target filter**, the maximum and minimum detectable objects can be set.

20.5. Notes

- Parking detection does not repeatedly trigger alarm for a vehicle that stays for a long time.

FAQ

1. How long does it take by default for the intelligent database background learning?
 - The default background learning uses 200 frames. At the default analysis speed of 12 fps, the background learning takes about 16 seconds.
2. Can tripwire detection be used as the object counter?
 - No. Tripwire detection cannot separate objects that stick together, so it cannot be used as a precise counter.
3. In the case of abandoned objects and illegal parking, how does the algorithm judge whether it is a person, a vehicle, or an object?
 - The intelligent database can only judge persons and vehicles, and can not identify objects accurately. The abandoned objects function triggers alarms for abandoned objects, and also persons and vehicles that are motionless for a long time. To filter out the disturbance of motionless persons, it is recommended to increase the alarm-triggering duration, typically to over 30 s; if the purpose is to trigger alarms for small objects only and filter out the disturbance of vehicles, set filtering by size;
 - Abandoned objects detection can also identify illegal parking, just by setting filtering by size to differentiate vehicles and objects.
4. Which functions are influenced by the depth-of-field ruler setting?
 - The depth-of-field calibration affects the calculation results of actual size, and so also affects the size filtering result of the size filtering mode;
 - The intelligent database filters the types of object according to the actual size of the objects, in response to the depth-of-field calibration affecting the recognition of object types (person and vehicle); the depth-of-field calibration affects fast-moving detection due to its influence on the actual speeds of objects.
5. The network camera prompts "Resources are limited. Failed to enable video detection."
 - Solution 1: The bandwidth is insufficient. Use a switchboard of higher bandwidth.
 - Solution 2: Too many users are logging and exceed the upper limit of the stream rate of the device.
 - Solution 3: The network is disconnected or the device repeatedly restarts.
6. What if infrared effect is not good?
 - Solution 1: Not all IR lights are on because the correct power supply is not used.

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- Solution 2: The object is too far and beyond the coverage of the IR light.
 - Solution 3: The IR-CUT is set to the color mode, and the front-end sensing chips cannot sense IR light.
 - Solution 4: When the device is placed on (especially rough) surfaces, such as a table, the IR light is reflected back to the lens, producing an unwanted whitening effect. Adjust the pitch angle of the lens or place the device near edges.

7. What if the device cannot take recordings or capture pictures?

Possible reasons: Wrong setting of the **Capture Period** ; wrong storage location; the **Recording Mode** is disabled.

- Solution 1: Set the **Recording Period** and **Capture Period** on the **web** interface.
- Solution 2: Check whether the **Storage Point** check box on the **web** interface is selected.
- Solution 3: Check whether the SD and FTP for storing recordings and captured pictures are connected correctly. Try connecting to FTP in a computer.
- Solution 4: On the **web** interface, set the **Recording Mode** to be **Manual** or **Auto**.

8. What if there are black edges on the image after upgrade?

- Solution 1: This is caused by failing to clear the network camera settings or restore the factory settings after upgrade. Clear the network camera settings or restore the factory settings.
- Solution 2: The upgraded program does not match the camera model, and redo the upgrade to the correct program version.

9. Abnormal image that shows the IR reflective image or that is whitened or blurred, after the IR light of the HD or standard definition IR hemisphere camera is turned on.

- Solution: Re-install the IR block ring in place.

10. What if network camera shows gray screen?

- Description: The network camera shows gray screen, goes back to normal after power disconnection, but the gray screen appears again.

Possible cause: Insufficient power supply.

- Solution: Check the network camera's power supply method, and whether the power adapter is too far away from the network camera.