

Configure VCA Rules

The perimeter protection detects a series of suspicious behaviors, and the certain linkage methods will be enabled if the alarm is triggered.

1. Check **Enable**.
2. Select channel. You can enable **Fusion** in channel 2.
3. Set rules.
 - i. Click "+" to add one or more rules.
 - ii. Enter the rule name and select rule type.
 - iii. Check to enable **Filter by Pixel**. Then draw the max. size and min. size rectangles to filter the target among human, vehicle, animal, and others. Only the target whose size is between the Max. Size and Min. Size value will trigger the alarm.

Notes:

- You can draw the max. size and min. size rectangles according to the real target in the scene. The recommended size is 1.2 times of the target.
 - Due to the main difference between human and animal is the height. Just concern the height of animal.
 - Up to 8 single rules are supported.
- iv. Set rule parameters.
 - Select the detection target. You are recommended to select the target as **Human & Vehicle**.
 - Select a scene mode. General, Leaves Interfered View, and Distance View are selectable. Select **Distant View** when you are far from the targets. Select **Leaves Interfered View** when the camera is close to leaves.

Note:

In distance view, the device cannot classify the target with pixels less than 10*10. The target will be recognized as human directly. So the selection of this item will increase trigger false alarm rate but decrease missing alarm rate.

- Optional: Set the sensitivity and crossing direction for line rule, and set the time duration for instruction rule. Sensitivity refers to the sensitivity of the camera detects a target. The

higher the value is, the easier a target would be recognized, and the higher possibility of misinformation would be.

- v. Check the single rule to enable the rule for perimeter protection, and click **Save**.
4. Optional: Add more rules and set combined event. This function is used to combine multiple events as alarm conditions of the rule and it only triggers alarm when the rule and all the conditions are triggered simultaneously.

Note: Enabling combined event may cause missed alarm.

- i. Check **Alarm Trigger Condition**.
- ii. Select the condition type.

Enable any of the events first so that the event can be selected as the alarm condition.

- iii. Select the event according to the selected condition type.
- iv. Set **Validity Period**. Set the activation period of the device judging alarm trigger conditions after the main rule triggered an alarm, and when any of the conditions are triggered in **Validity Period** will the device perform the alarm linkage.
- v. Click **Save**.

Notes:

- Rules set as the alarm trigger condition cannot have trigger condition.
- Alarm trigger conditions cannot be the same in one rule.

Polling Plan

Set polling plan of each channel.

- **Auto:** In Auto mode, the device will implement the polling plan automatically.
- **Manual:** In this mode, you can set the polling plan manually.

Steps:

- i. Select the **Optical Channel** or **Thermal Channel**.
- ii. Drag the mouse on the time bar to select the arming schedule.

- iii. (Optional) Click **Delete** to delete the arming schedule you do not need, and click **Delete All** to delete all configuration.

Note: The arming schedule of thermal channel and optical channel shall not overlap.



- iv. Click **Save**.

Shield Region

Purpose:

The function enables you to shield certain areas from being detected.

Steps:

1. Check **Enable**.
2. Click .
3. Left click in the live view to draw the points of area, right click the mouse to finish drawing.
4. Drag the frame to adjust the position of the shielded area.
5. Select one area and click  to delete it.
6. Click **Save**.

Note: You are allowed to draw up to 4 areas on the same image. And each area can be set with 3-10 points.

Arming Schedule and Linkage Method

Purpose:

Set the linkage method of the alarm.

Steps:

1. Set the arming schedule and linkage method.
 - Arming Schedule: Click **Edit** and click on the time bar and drag the mouse to select the arming time period.

Note: When you enable the offsite alarm function, the **Arming Schedule** is specially for working hours.

- Linkage Method: Check to select the linkage method. Send email, notify surveillance center, upload to FTP/Memory Card/NAS, etc. are selectable. You can specify the linkage method when an event occurs.

2. Click **Save**.

Overlay & Capture

Steps:

1. Configure the display on stream/picture.
 - Display VCA Info. on Stream: The green frames will be displayed on the target if in a live view or playback.
 - Display Trajectory: The target's moving trajectory will be shown in the live view.
 - Target Marking Color: There will be a frame on the target. Enable this function to show the frame color of human as orange, show the frame color of vehicle as purple.
 - Display Target Info. on Alarm Picture: There will be a frame on the target on the uploaded alarm picture if it is enabled.
 - Display Rule Info. on Alarm Picture: The captured target and the configured area will be framed on the alarm picture.
 - Display Size Info. on Alarm Picture: The captured target and the size information will be displayed on the alarm picture.
2. Check to upload the JPEG image to center, and select the picture quality from the drop-down list.
3. Click **Save**.

Camera Calibration

Note: The function varies according to different camera models, take the actual product for reference.

Before you start: Make sure that we have known the actual height of the person in the scene.

Steps:

1. Check **Enable**.
2. Select **Calibration Mode. Self-Learning Calibration** and **Traditional Calibration** are selectable.

Note: The function varies according to different camera models. If the configuration is not supported, you can refer to the steps of **Traditional Calibration**.

Self-Learning Calibration

- i. Select **Filter Level**.
- ii. Check **Camera Calibration**. The device will automatically record and calculate the height range of people at different scene positions, which is used to filter out the target out of range at the location.
- iii. The calibration area are divided into 20 rows. There needs to be a person walking back and forth twice in the uncalibrated area (white lines) until all the area has been calibrated (green lines). You can pause the calibration process or recalibrate.
- iv. (Optional) Check **Manual Correction** and adjust the height range manually.

Note: Manual correction requires enough self-learning calibration time or targets.

- a. Select Fig N (1~4).
- b. (Optional) You can click **Previous** or **Next** to change the target of each figure.
- c. Input the actual height of the target.
- d. Click **Save**.

Traditional Calibration

- o Set the **Auto Calibration**.
- i. Make sure only one person appears in the live view, and input the person's height in the **Target Height** text field.
- ii. Click **Start** to start auto calibration.

Notes:

- Make sure there is no moving objects in the view except for the person.
- The auto calibration starts when the person is totally seen in the camera's view, and ends when the person is in the endpoint (The endpoint-to-camera distance(m) equals 4 times the lens focal length(mm)).

E.g, for 7mm lens, the recommended endpoint is 28m (7*4).

- Once auto calibration started, the person should start to walk in a zigzag course.
- Make sure the walking route covers the left, middle, right of image.
- The auto calibration duration should be no shorter than 10s, and no longer than 10min. Walking in a double Z zigzag is theoretically enough.
- For leave/tree interference in the live view, shield settings is recommended.


iii. When the person exits, Click **Stop** to stop auto calibration.

Verification:

a. Click **Enable Verification** .

Notes:

- Verify not only person, but also other objects appeared in the view. Such as car, street lamp, etc.
- The verifying result value is only the height of the line. The horizontal width is not measured.

b. Click **Vertical Verify** , and drag a vertical line in the view.

c. Click **Calibration**  to calculate the length.

d. Compare the calculated line length to the actual length to verify the calibration settings.

Note: If the Auto Calibration failed, or the verified result turns bad, click Fig 1 to Fig 4 to examine whether they are valid person/object in the figures or not. If so, refer to the Manual Calibration.

- (Optional) Set the **Manual Calibration**.

i. Select Fig 1.

ii. Click  and drag the vertical line until it fits the target.

iii. Input the actual length of the calibration line.

iv.(Optional) You can click  to delete the calibration line.

v.When the $\sqrt{\quad}$ appears, select Fig 2 to 4 and repeat step 3.

vi.Click **Save**.

Verification:

Refer to the verification procedure of **Auto Calibration**.

Notes:

- Separate 4 vertical lines at the left, middle and right of the image respectively.
- Separate 4 vertical lines in the optical-axis direction at the close site, middle and far site respectively.
- In the four figures, the calibrated object doesn't need to be the same. Select a proper object in each figure.
- If manual calibration's result is incorrect, reset the target to recalibrate..

Advanced Configuration

Version: Show the current perimeter protection version.

Single Alarm: The system only sends alarm once for one target triggering if **Single Alarm** is enabled. Otherwise, the alarm will be triggered continuously until the target disappears.

Continuous Alarm: The system sends multiple alarms for one target triggering at intervals of **Alarm Interval**.

Note: Continuous alarm conflicts with single alarm, and it is only available for Intrusion rule.

Restore Default: Click to restore the configured parameters to the default.

Restart Algorithm Library: Restart the algorithms library of perimeter protection.