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How to configure VCA for bullet thermal camera V5.5.0

Preparation

1. *Enter the IP, User and Password, click the button of Login via web page.*
2. *Before using the VCA rules of the camera, you should select the VCA resource type first.*

STEP 1:
Enter configuration>local, confirm the Rule is enabled. Click Save so that the information of VCA rules and detected objects can be shown in the live view.
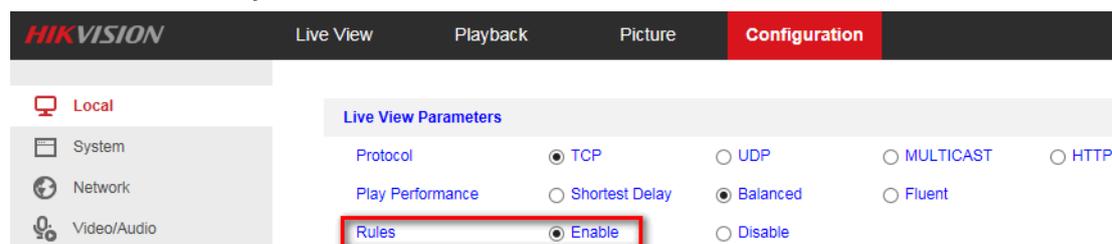

Figure 1

STEP 2: change the VCA resource type. As shown in the figure following. The corresponding interface can be shown after changing the VCA resource type and rebooting the device.
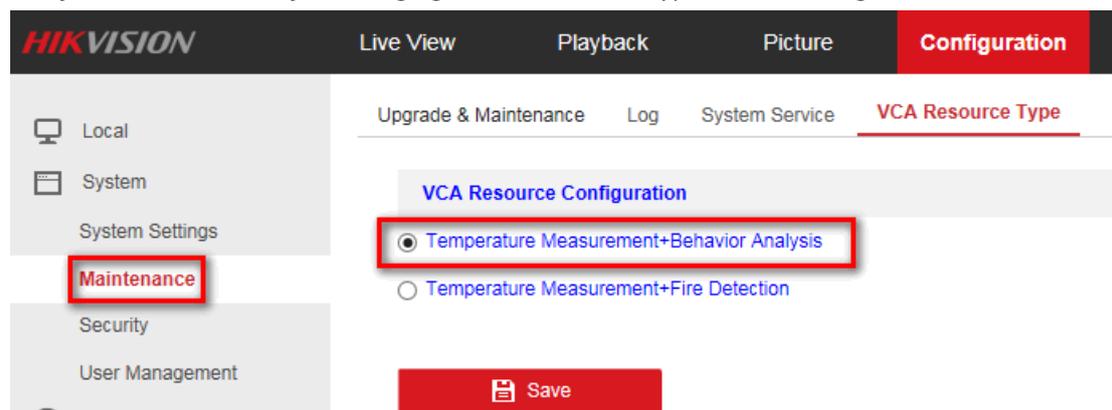

Figure 2

STEP 3: Check the 'Display <u>VCA info</u> on Stream' option, so that live view interface can show the rule or object info.
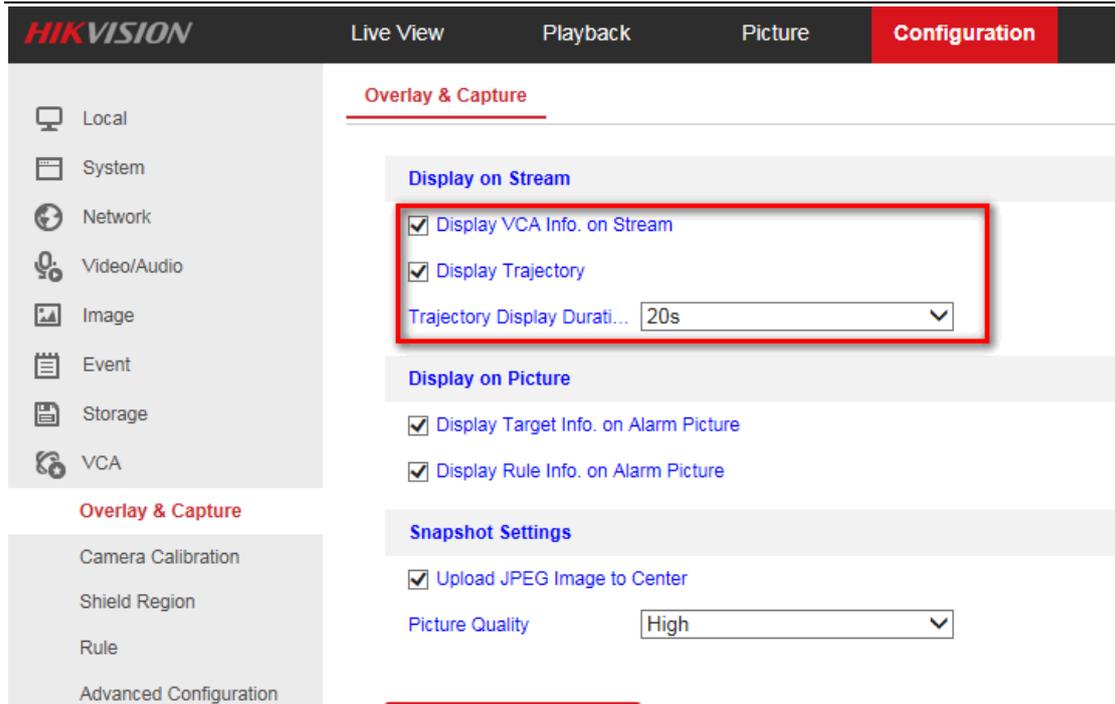
Figure 3

Check the '*Display Trajectory*' option, when the device detect the object successfully, it could show the trajectory of the object constantly. The original trajectory is green color, if the object trigger the alarm, it will turn to red.

Figure 4

STEP 4: The camera calibration function is set up to prepare the actual size filtration.

When enabling the camera calibration, the device can calculate the size of every target, so the VCA detection will be more accurate.

The concrete calibration operation method and the attention of the actual size settings please refer to How to document below.

STEP 5: The shielding region is set on demand, such as the monitoring scene shown in the following figure, the sky is not the monitoring area of the customer, so the area can be shielded, it will not detect the target and help to reduce the false alarm. We must be cautious in setting up shielding regions, and try to select those areas which have interference or without any interested targets, it supports 4 areas at most.

Figure 5

STEP 6: Rules and alarm linkage configuration.

Enter the Rule configuration interface, create a new rule, Rule Type can choose as Line Crossing, Intrusion, Region Entrance, Region Exiting. 8 rules are supported at most.
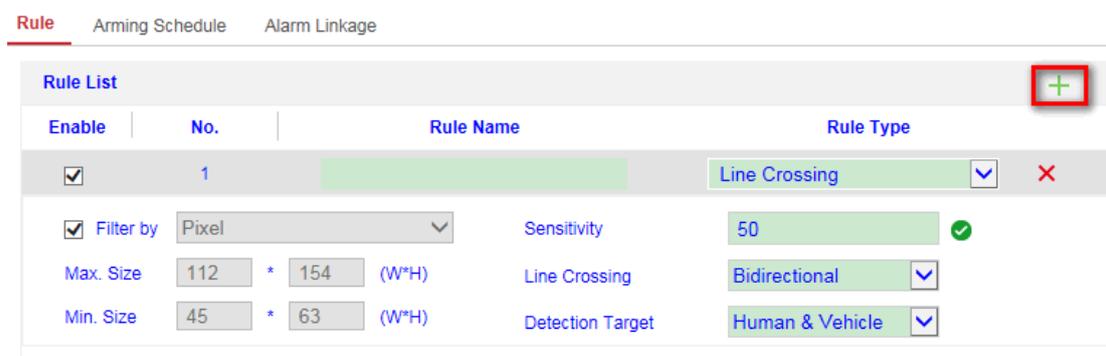
Figure 6

Note:

When drawing rules, we should pay attention to leaving some space at the edge of the testing area so as to provide some time for detection of the device. Otherwise, it will cause the mobile object to cross the boundary suddenly, but the target frame has not been generated yet, and the alarm can't be detected. Here is the rule drawn normally as following:

Figure 7

Filtering: VCA will automatically filter out the alarm which the target frame is not satisfy the filter size.

Filter by pixel size

By manually drawing the maximum size and minimum size, the targets can be filtered if the pixel is not in the interval. Since the pixel of same object will be influenced in different locations, so it is better to draw more rules and set difference size pixel filter for each rule. As shown in the picture below.
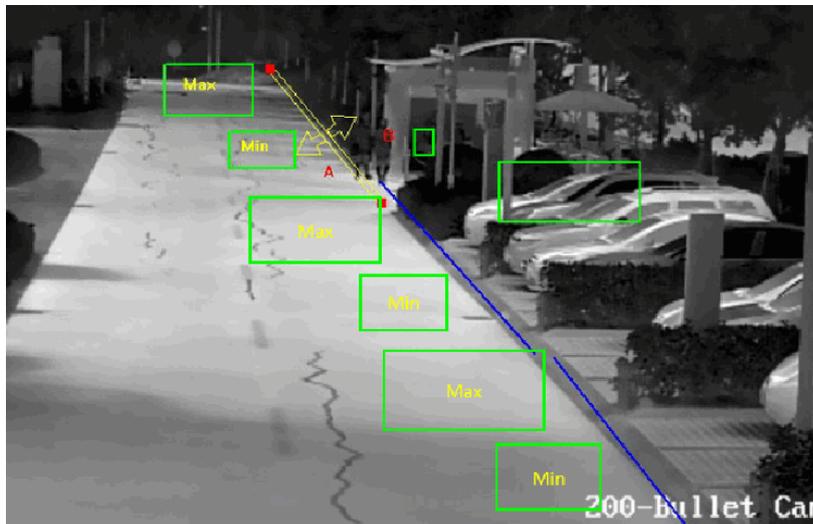
Figure 8

Filter by actual size (PTZ cameras don't support this function)

*It could be realized only after finishing the calibration. Input the (W*H) value in Max.Size and Min.Size, remember use the redundancy appropriately. Then only the objects meet the Wide*High requirement can trigger the alarm.*
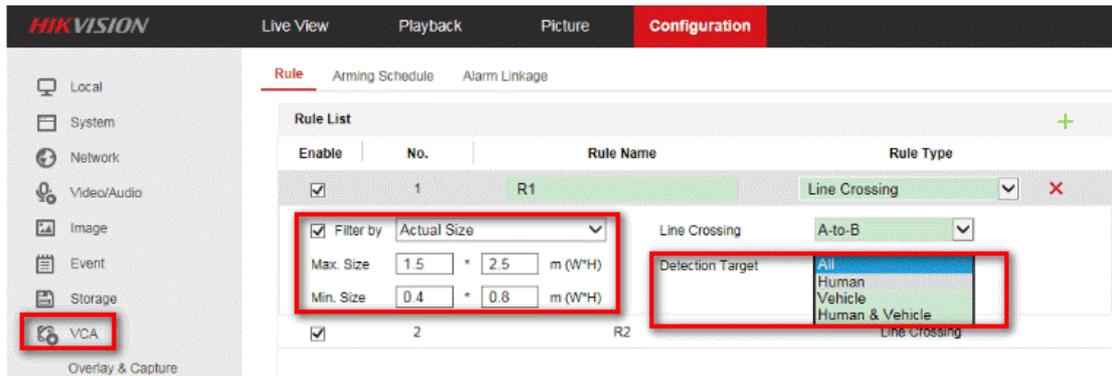
Figure 9

Target Detection:

Choose the target that you pay attention to in this option, such as Human, and the device will judge by the depth learning algorithm that when people enter the rule area and trigger the alarm.

Note:

Because the deep learning algorithm classification needs to judge at least 10*10 pixels, it is best to use size filtering to enhance the effect.

Referring to the alarm linkage. There is no difference about the configuration between the optical camera and thermal cameras.

When the alarm happened, you can find only the target you selected and their size are all in this range triggered the alarms. This ensure VCA detection more precisely.

Step 7: Advanced Configuration (optional)

The parameters can be set to default in most cases. In some special scenes, the parameters can be adjusted especially, the concrete introduction is as follows:

Detection Sensitivity: target detection sensitivity control the difference between the background and objects. When the gray scale is very closed, it will make the object not so obvious, the parameter can be promoted to optimize the issue. And if there are many little frames in the picture, the sensitivity can be decreased to make the effect more stable.
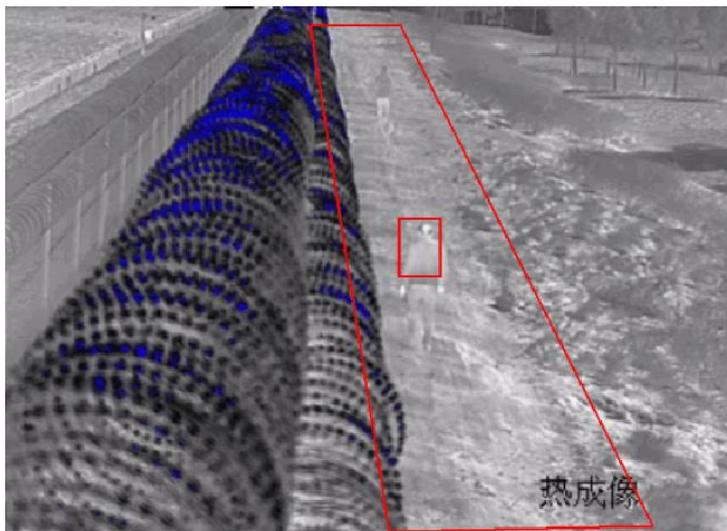

Figure 10

In low temperature difference scenes as the one above, the contract between object and

background is low, so it is better to raise the sensitivity.

Background Update Rate: This parameter can control the speed that object integrated into the background, the higher the rate is, the faster the integration of the objects. When the object move slowly or move near the scene, the Background Update Rate can be decreased to protect the detection frame from breaking. When the object moves fast, in a remote distance or in a simple scene, the Background Update Rate can be promoted to let the object integrated into the background quickly.
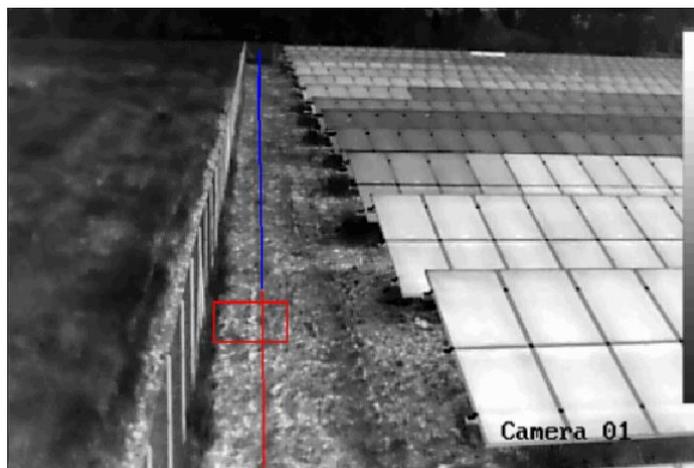

Figure 11

In scenes have a background of grass shaking as the one above, the background grayscale exists a local change. So it is better to raise the rate.

Minimum Target Size: This parameter decide whether the target box generate or not. The priority is higher than the min size of rule configuration. When the detected targets size smaller than this parameter, these targets will not displayed box in live view. The default value is usually setting.

Displacement Constraint for target generation: This parameter control the speed that target box displayed in live view. Set the value higher, and the target will be generated slow. Set the value lower, and the target will be generated fast.

Figure 12

As the scene shown above, the detection area is narrow and small. So it is better to set the value lower, make the target be generated fast and trigger the alarm in time.

Optical-Axis Movement: This parameter control the speed that optical-axis target box displayed in live view. Set the value higher, and the target will be generated slow. Set the value lower, and the target will be generated fast.
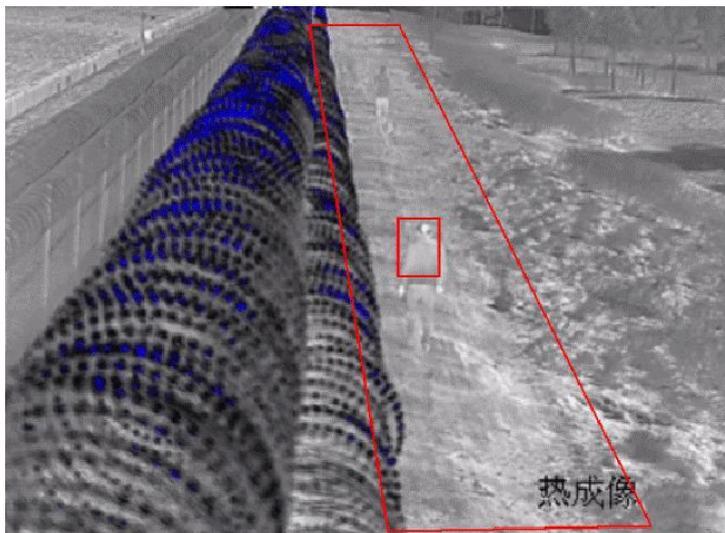

Figure 13

As the scene shown above. When the target moves in the direction of camera's optical-axis.

So it is better to set the value lower, make the target be generated fast and trigger the alarm in time.

Single Alarm: When the same target appears in the same detection area, checking the checkbox means it will only generate one alarm. If not, it will generate continuous alarm.

Scene Mode: The device according to the application of different scenarios, it provides three scene modes, which corresponding to different algorithm processing strategies.

General:

It's suitable for the uncrowded scene which has less target, leaves interfered. Focus on the target of the full range. Minimum size of monitoring target is more than 20*20 pixels (it based on 640*512).

Leaves Interfered View:

It's suitable for the scene which has more leaves interfered. The scope of monitoring is small and the target is generally large.

Distant View:

It's suitable for the scene which has less leaves interfered. The scope of monitoring is wide. Minimum size of monitoring target is smaller than 20*20 pixels (it based on 640*512).
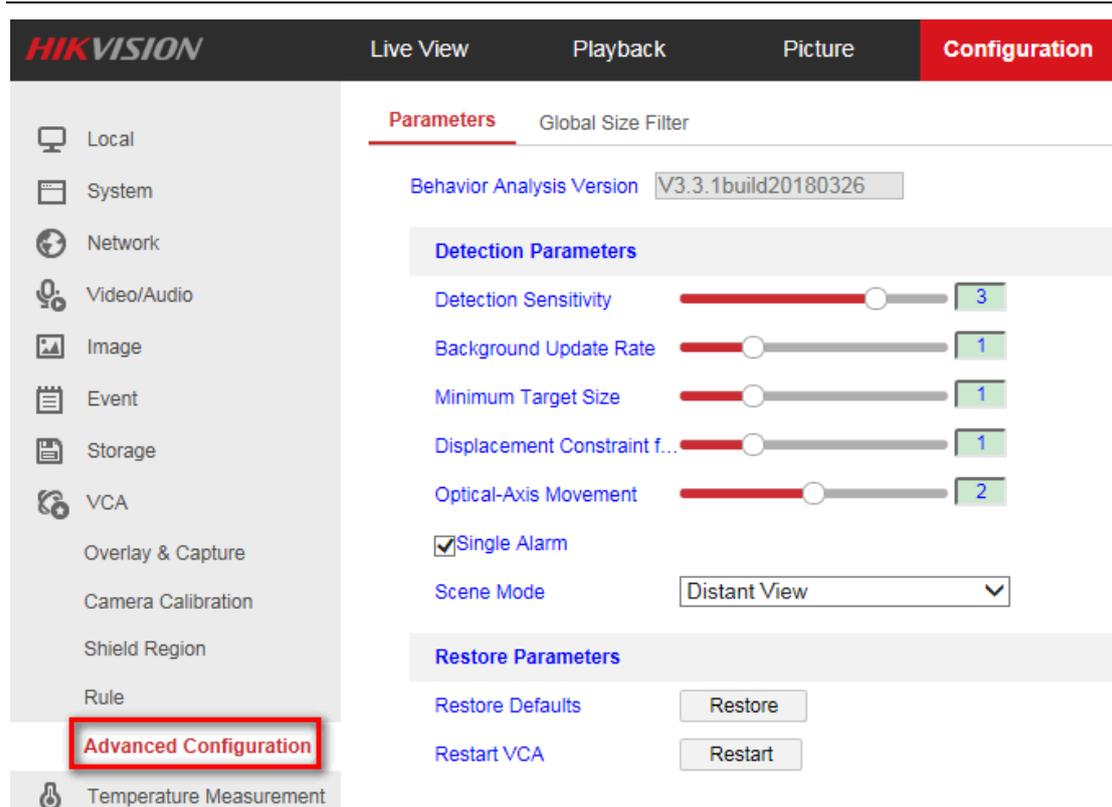
Figure 14

Step 8: Global Size Filter (*optional*)

If enable Global Size Filter, Only the target between the Max.Size and Min.Size will be generated. Otherwise the target will not display the green box in live view. The priority is higher than rule configuration. When the scene has many disturbing moving small objects, these unconcerned object can be eliminated in advance.
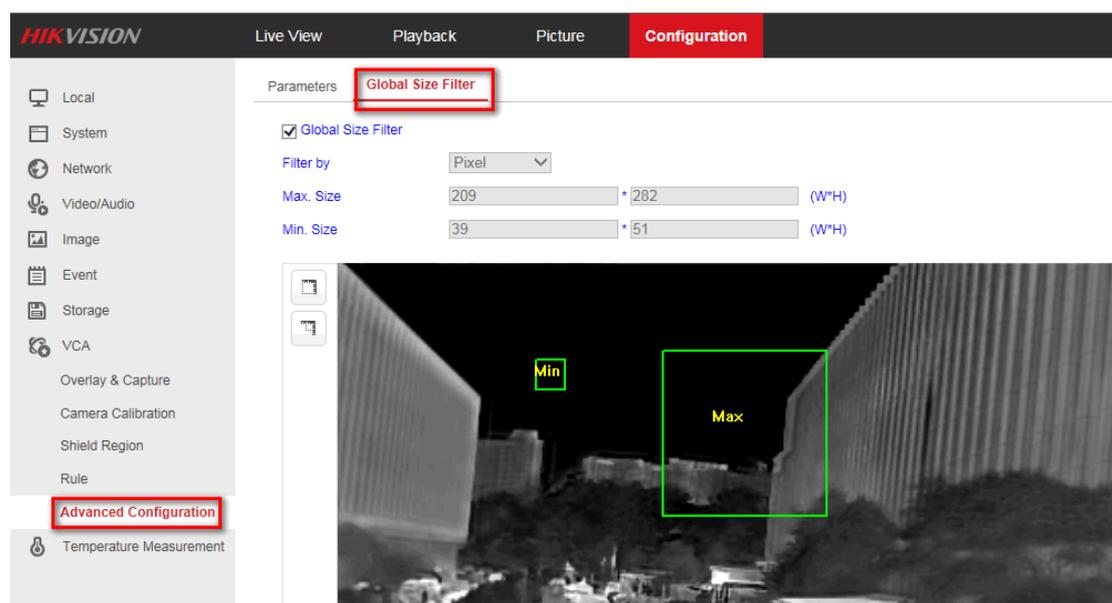
Figure 15

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