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How to set the thermal camera calibration and trigger the VCA by target's actual size

Purpose

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

Preparation

1. *Make sure that we have known the real length of the objects in the scene.*
2. *Choose the thermal camera which does not support PTZ function (Calibration only for this type).*
3. *Before using the VCA rules of the camera, you should select the VCA resource type first.*
4. *If the device has been upgraded, the previous calibration file will expire and need to be recalibrated.*

Steps:

1. *Enter the IP, User and Password, click the button of Login via web page.*
2. *Enter the Camera Calibration setting interface:*
   Configuration > VCA Configuration > Camera Calibration
3. *Check the checkbox of **Camera Calibration** to enable this function. It includes auto calibration and manual calibration.*
4. *Auto Calibration setting.*
   - ***Auto Calibration:***
   Make sure only one person appears in the live view, input the real height of target, then click the start button. Once auto calibration has run, this person should start to walk follow S route from device's minimum range which can see the whole person. Make sure this person's walking route covers the left, middle, right of image. The longest distance for person will need to walk is 4 times of focal lens. Take 2TD2136-7 for example, the recommended endpoint is 28m (lens*4). Finally click the stop button to finish this operation.
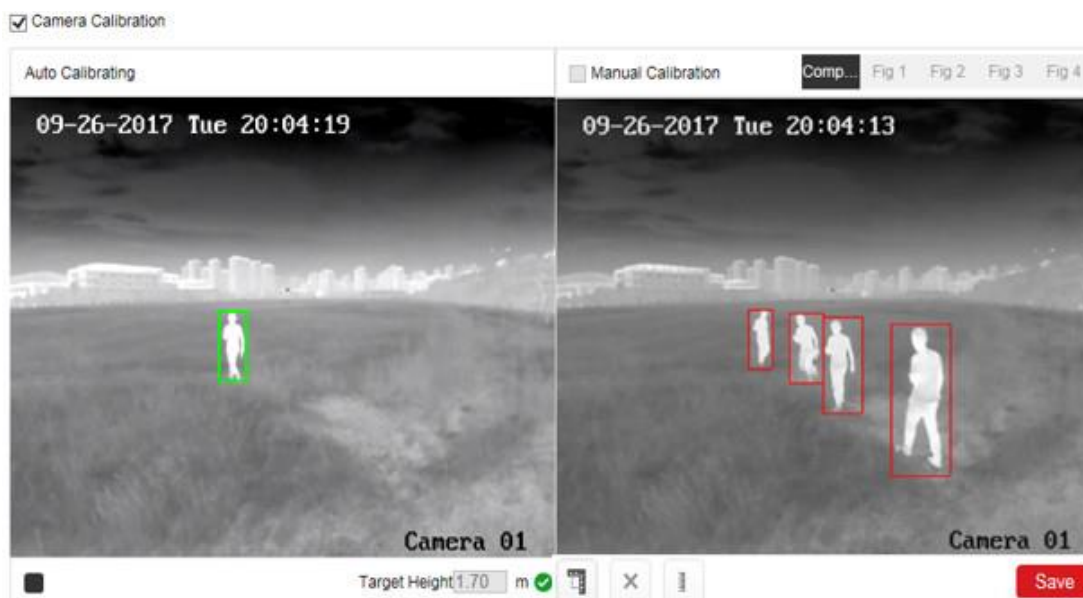
Figure 1

Note:

1. Keep only one people walk in the live view, no other moving objects (animals or persons).
2. Auto calibration time should between 10 seconds to 10 minutes. Walking with two groups of S route is enough theoretically.
3. If there is the leaves or trees interference appears in the live view, we suggest to use shield region settings to solve this issue.

● **Verification for Auto Calibration**

There will be automatically generate one composite figure after auto calibration succeeded. We can verify the calibration accuracy by testing person has walked in four different positions one by one in this picture or form Fig1 to Fig4.

Click the **Enable Verification of Camera Calibration** button 🔲 to enter the verification interface. Click the **Vertical Verify** button 🔲 to draw a vertical line on the live video, and then click the **Calibration** button 🔲 to calculate the line length. Compare the calculated line length to the actual length to verify the calibration you set. With the drawn reference lines and their real length, the camera can conclude other objects appear in the live view.

Note:

1. Not only verify person, but also verify any target appears in picture. Such as car, lamp pole.
2. Only support Vertical verification not include horizontal verification.

5. Manual Calibration setting.

● **Manual Calibration:**

If the auto calibration result is not correct, we can select manual calibration to recalibrate. It needs 4 lines in total and draw each one vertical line from Fig1 to Fig4. Take Fig1 for example, click Draw Verification Line (Vertical) to draw a vertical line to one person in Fig1, and input the actual length in Real length field. If there is no persons appears in Fig1 or has not marked the target with frame completely, we can select other vertical objects to calibrate, like as the lamp pole.

Finally click save button until you have drawn one calibration line in each figures.

● **Verification for Manual Calibration**

Please verify the calibration result after complete the manual calibration. The verification method can refer to **Verification for Auto Calibration***.*

Note:

1. *It would be better to separate 4* **vertical lines** *at the left, middle and right of the image respectively. From the vertical, lines need to be separated from front to back evenly.*
2. *If manual calibration's result is not correct, please reselect target to recalibrate. Make sure input the height value of target accurately.*

6. *Rule Configuration*

If auto calibration's verification result or manual calibration's verification result is similar as the real height of target, go to rule configuration for next settings.

Steps:

1. *Click* **Rule** *tab to enter the rule configuration interface and add a new rule. Check the checkbox of the desired rule to enable the rule for behavior analysis.*

   Take **Line Crossing** *for an example.*

Select the rule type of **Line Crossing***, set the filter type to* **Actual Size** *when the camera calibration is configured. Then input the width and height of the Max. Size and Min. Size. Only the target whose size is between the Max. Size and Min. Size value will trigger the alarm. We can also set the* **Detection Target** *like as Human, Vehicle, Human & Vehicle. The device will output the alarm information according to the target you have selected.*

Note

If you want to detect human whose size is 0.5 meters wide, 1.8 meters high probably, the recommend settings can refer to the following example.

Min. Size: 0.4*0.8(m)

Max. Size: 1.5*2.5(m)

Detection Target: Human

2. *Draw the line on the live video and select the crossing direction, click* **Save** *to save the settings.*

When the alarm happened, you can find only human not other moving objects and their size are all in this range triggered the alarms. This ensure VCA detection more precisely.

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