



Performance Series Thermal

2CD-TDxx17-x/V1

Thermal Camera Configuration Guide

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FCC Compliance: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.


FCC Conditions


This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

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Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

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Introduction

This guide explains how to configure a Hikvision Performance Series thermal camera.

This configuration guide is for the following Hikvision Performance Series cameras:

- 2CD-TD1217-x/V1
- 2CD-TD2117-x/V1
- 2CD-TD2617-x/V1

VCA (Video Content Analysis)

1. Enter the camera's IP address in a Web browser to access the camera's interface.
2. Go to **Configuration > Maintenance > VCA Resource Type**.
3. Check the **Temperature Measurement + Behavior Analysis** radio button (default).
4. Click the **Save** button.

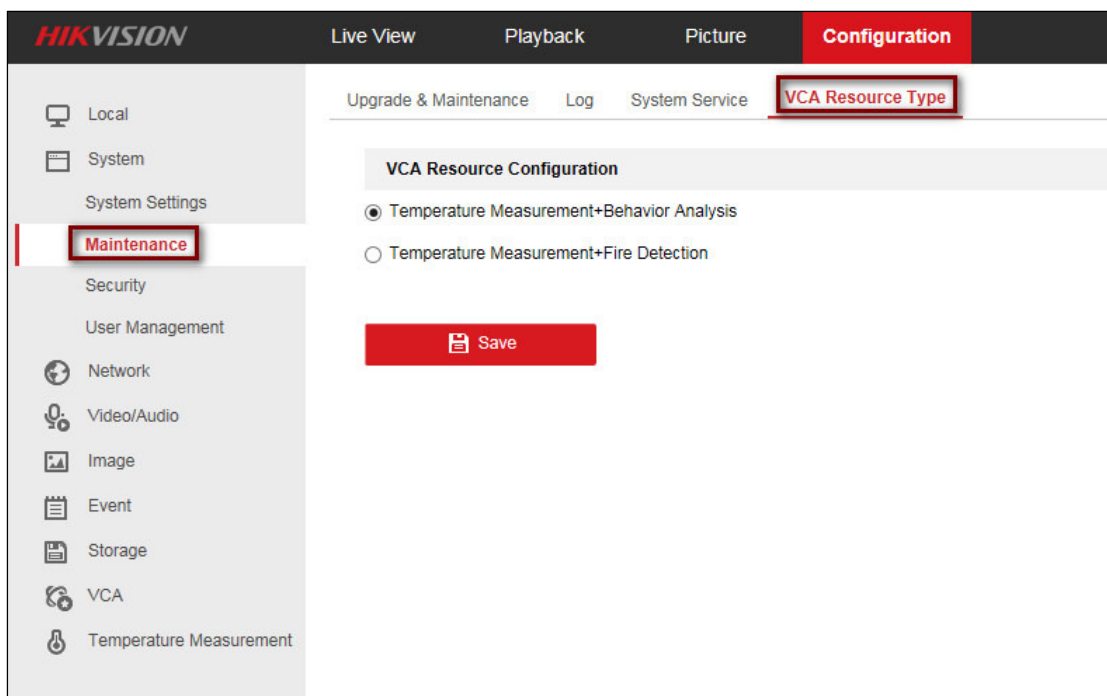


Figure 1, VCA Resource Configuration

5. Go to **Configuration > Local** to view the **Live View** parameters.
6. Check the **Rules – Enable** radio button.

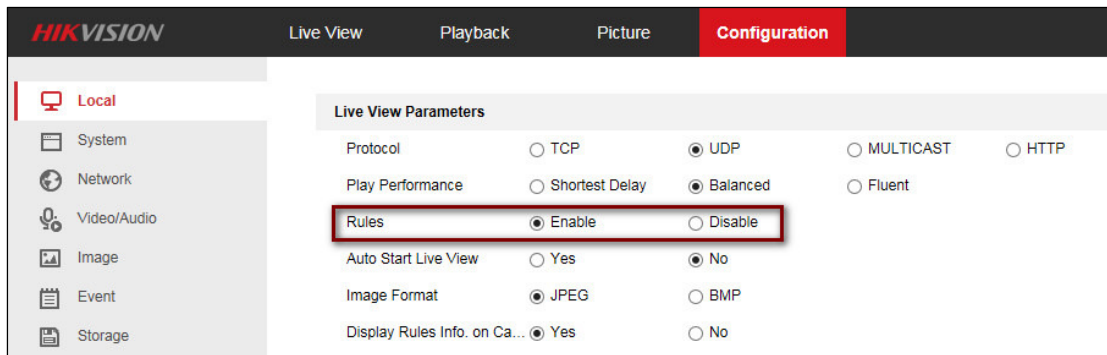


Figure 2, Live View Parameters

7. Go to **Configuration > Basic Settings**.
8. Check the **Intelligent Analysis** checkbox.
9. Click the **Save** button.

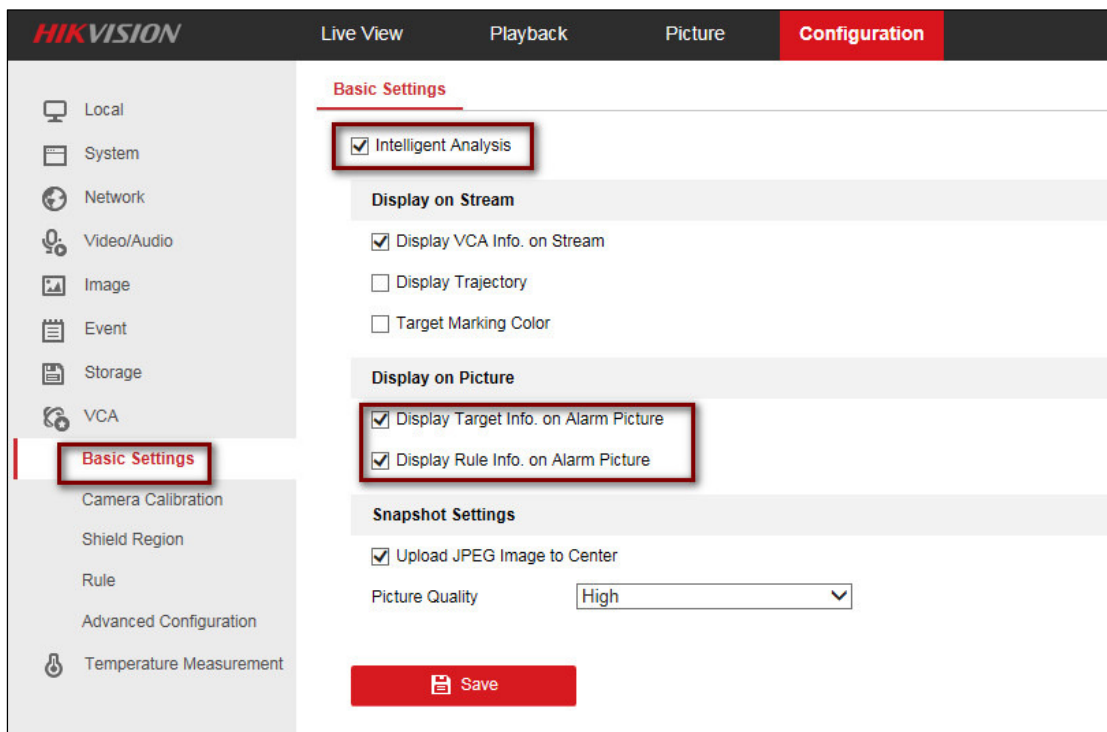


Figure 3, Display on Picture

10. Go to **Configuration > VCA > Rule**.
11. Create one or more rules.

NOTE: A **Line Crossing** rule will be used as an example here. Other VCA functions will have different choices.

12. Click the  button to define a rule.

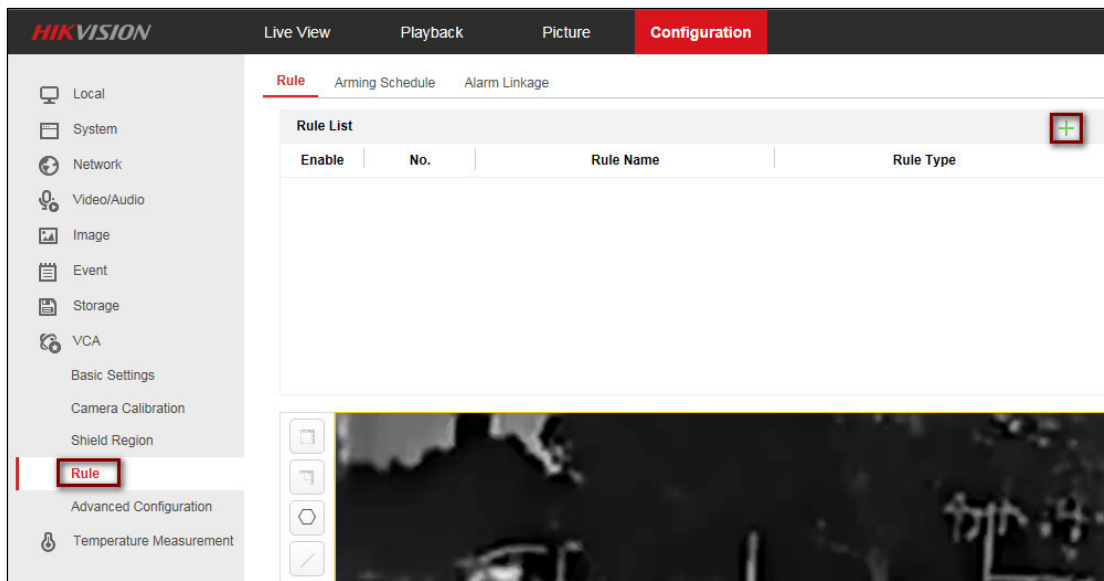


Figure 4, Rule List

13. Configure the rule using the following as an example (actual choices will vary by VCA function).


- **Enable:** Click this checkbox to enable this rule.
- **No. (Read Only):** Displays the rule number.
- **Rule Name:** Input a descriptive name for this rule.
- **Rule Type:** Use the pull-down menu to select which VCA feature this rule is for.
- **Delete Icon X:** Click to delete this rule.
- **Copy Icon** : Click to make a copy of this rule.
- **Filter by:** Use the pull-down menu to select how to filter the target. To detect the target more accurately, it is suggested to use **Filter by Pixel**.
- **Max. Size (Read Only):** The maximum target pixel size to detect.
- **Min. Size (Read Only):** The minimum pixel size to detect.
- **Sensitivity:** Enter the sensitivity to determine how intrusive a breach has to be to trigger an alarm.
- **Line Crossing:** Use the pull-down menu to select the line crossing direction that will trigger an alarm.
- **Detection Target:** Use the pull-down menu to select target type: **Human**, **Vehicle**, or **Both**.
- **Background Interference:** Use the pull-down menu to turn the **Background Interference** filter **ON** or **OFF**. The **Background Interference** filter eliminates background noise such as rustling leaves.



Figure 5, Rule List Settings

14. Go to **Live View** to set the following:




- **Maximum Size Icon** : Click to drag and place a box to define the maximum size target to detect.
- **Minimum Size Icon** : Click to drag and place a box to define the minimum size target to detect.
- **Line Icon** : Click to drag and draw a line over which a target crosses to be detected.



Figure 6, Setting Rules in Live View

15. Repeat Steps 12 and 13 to set additional rules.

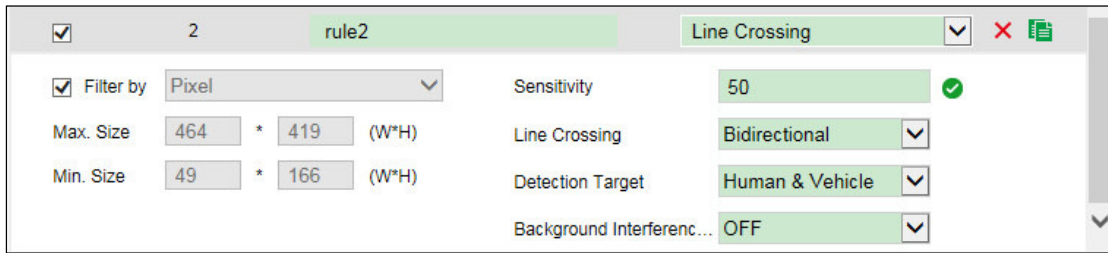


Figure 7, Rule Settings



Figure 8, Rule Settings Example

16. Verify the **VCA** effect rules in Live View.



Figure 9, Live View

Temperature Measurement

1. Go to **Configuration > Maintenance > VCA Resource Type**.
2. Check the **VCA Resource Configuration: Temperature Measurement + Behavior Analysis** radio button.

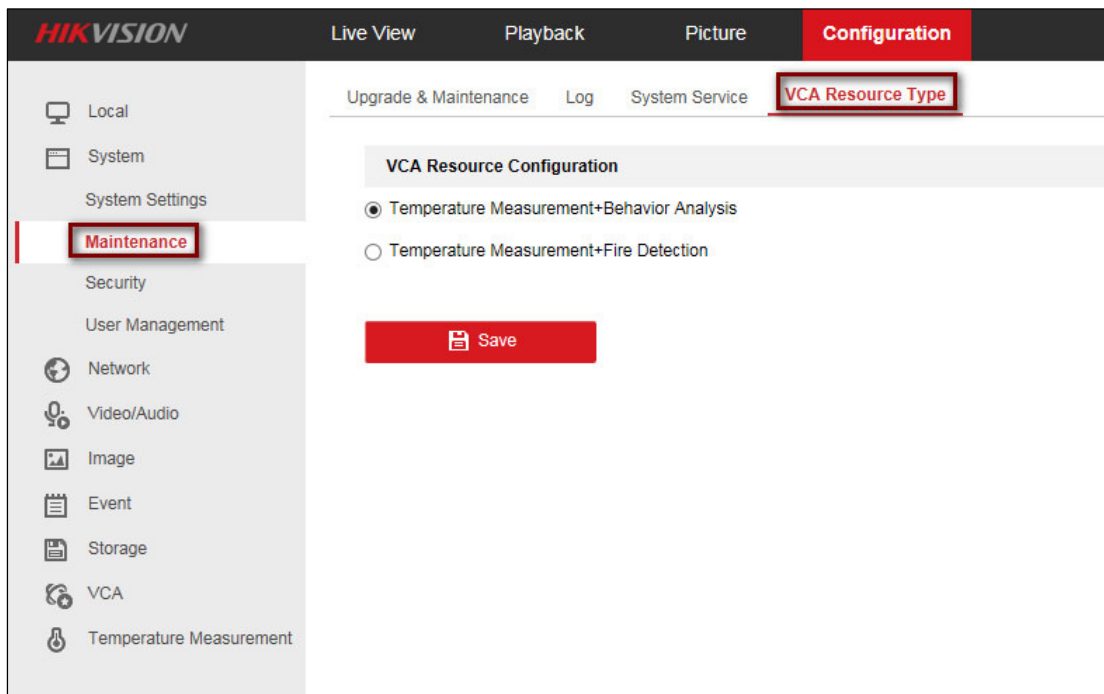


Figure 10, VCA Resource Configuration

3. Go to **Configuration > Local**.
4. Check the **Live View Parameters: Display Temperature Info, Yes** radio buttons.

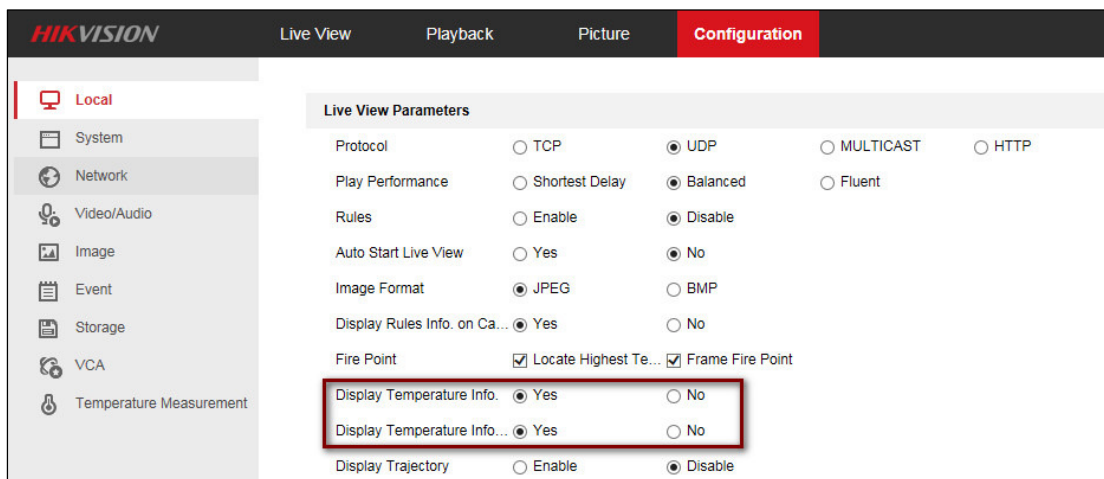


Figure 11, Live View Parameters

5. Go to **Configuration > Temperature Measurement > Basic Settings**.
6. Set the following items:
 - **Channel No.:** Use the pull-down menu to select the camera you want to configure.
 - **Enable Temperature Measurement:** Check the checkbox.
 - **Display Min. Temperature:** Check the checkbox.
 - **Display Average Temperature:** Check the checkbox.

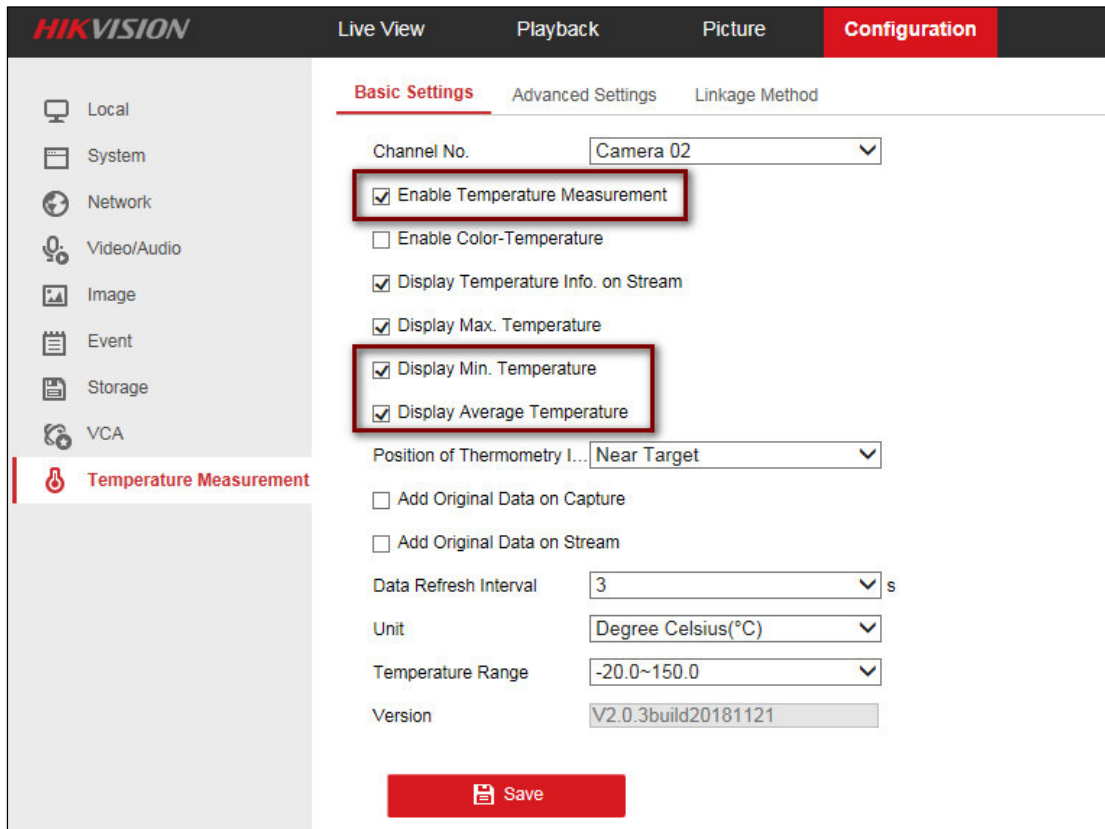


Figure 12 Temperature Measurement, Basic Settings

7. Go to **Configuration > Temperature Measurement > Advanced Settings**.

8. Set the following items:

- **(Temperature Measurement) Configuration Mode:** Use the pull-down menu to select a mode.
 - **Normal.** This mode will display the highest temperature and lowest temperature.
 - **Expert.** This mode will let you create points, lines, and areas as temperature rules according to a specific scene. It supports 10 points, 10 areas, and one line.
- a) **Alarm Rule:** Check the checkbox to enable the alarm rule.


Enable	ID	Name	Type	Emissivity	Distance(...	Reflective Temp...	Alarm Rule	
<input checked="" type="checkbox"/>	1	Point1	Point	Cus 0.96	30	<input type="checkbox"/> 20	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	2	Area1	Area	Cus 0.96	30	<input type="checkbox"/> 20	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	3	Line1	Line	Cus 0.96	30	<input type="checkbox"/> 20	<input checked="" type="checkbox"/>	

Figure 13, Alarm Rules

b) Click  to enter the **Alarm Rule** interface.

Alarm Rule

Alarm Rule: Above (Average Temperature) ▾

Alarm Temperature: 40 °C ✓

Filtering Time: 0 s

Pre-Alarm Temperature: 0 °C

Filtering Time: 0 s

Tolerance Temperature: 3 °C

Pre-Alarm Output: A->1

Alarm Output: A->1

OK Cancel

Figure 14, Alarm Rule

- c) **Alarm Rule:** Use pull-down menu to select choice (e.g., the above example is set to **Above (Average Temperature)**).
 - d) **Alarm Temperature:** Input the temperature that will cause the alarm to trigger (e.g., the above example is set at 40° C, so the device will alarm when its average temperature is above 40° C).
 - e) **Tolerance Temperature:** Input the number of degrees that the **Alarm Temperature** needs to vary (above or below, depending on the **Alarm Rule**) to cancel the alarm (e.g., in the above example, when the temperature falls below 37° C, the alarm be canceled).
- **Emissivity:** This measurement is the target material's effectiveness in emitting energy as thermal radiation. Set the emissivity of your target. 0.96 is suitable for most targets.
 - **Distance:** Input the number of meters for a straight line between the target and the device.
 - **Reflective Temperature:** If there is any object reflecting to the target, e.g., a mirror, enter the reflecting object's temperature value. If not, skip this step.

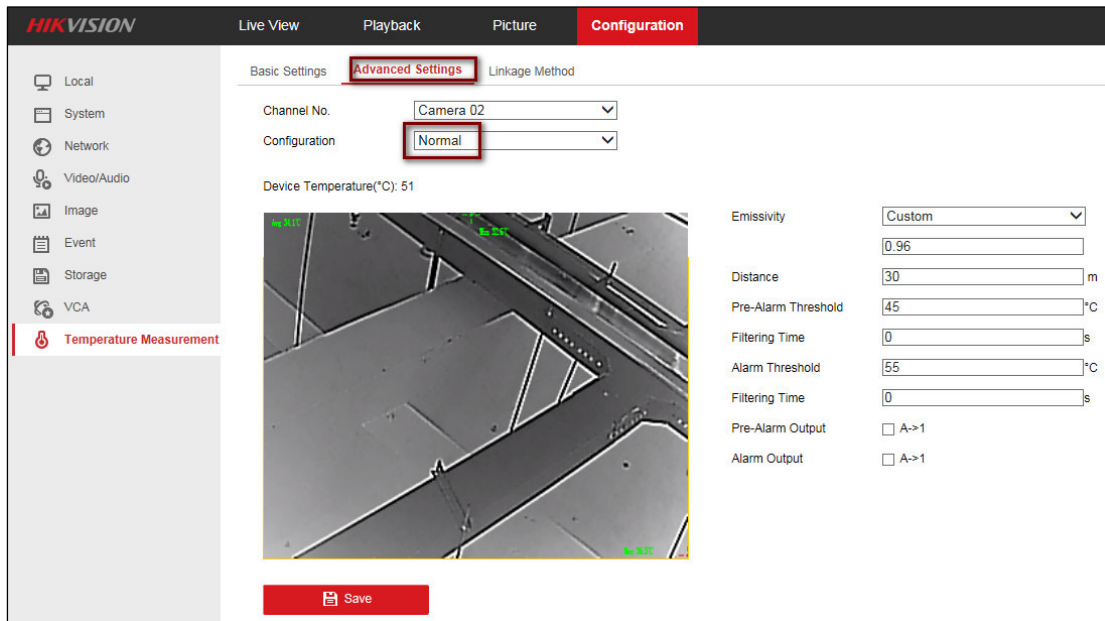


Figure 15, Configuration (Normal)

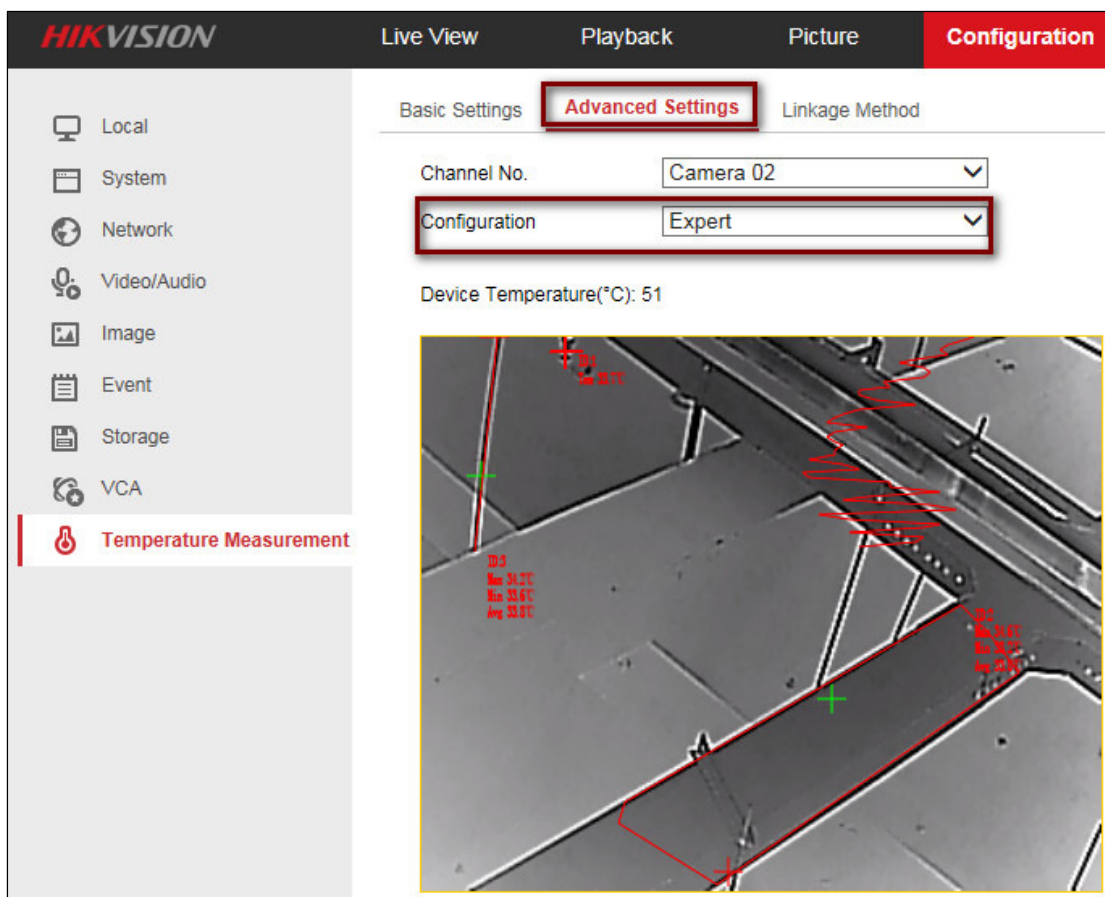


Figure 16, Configuration (Expert)

Enable	ID	Name	Type	Emissivity	Distance(...)	Reflective Temp...	Alarm Rule
<input checked="" type="checkbox"/>	1	Point1	Point ▾	Cu: ▾ 0.96	30	<input type="checkbox"/> 20	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	2	Area1	Area ▾	Cu: ▾ 0.96	30	<input type="checkbox"/> 20	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	3	Line1	Line ▾	Cu: ▾ 0.96	30	<input type="checkbox"/> 20	<input checked="" type="checkbox"/>

Figure 17, Point, Area, Line

Fire Source Detection

1. Make sure VCA Resource Type has been selected with the Fire Detection option.

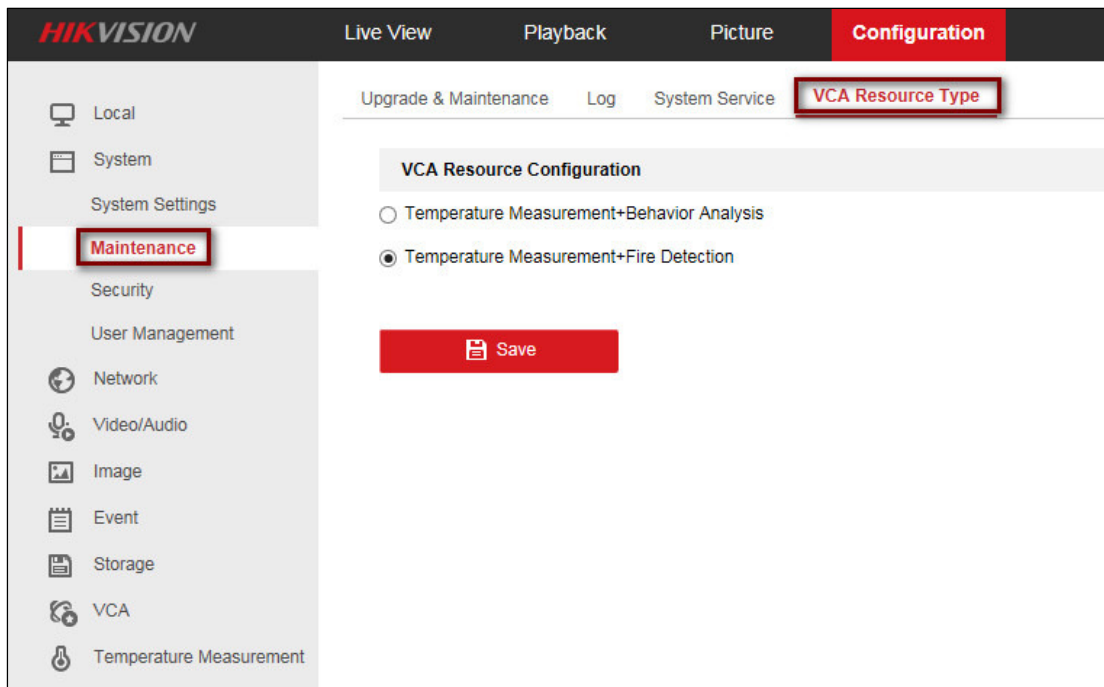


Figure 18, VCA Resource Configuration

2. Make sure the Fire Point checkboxes are checked.

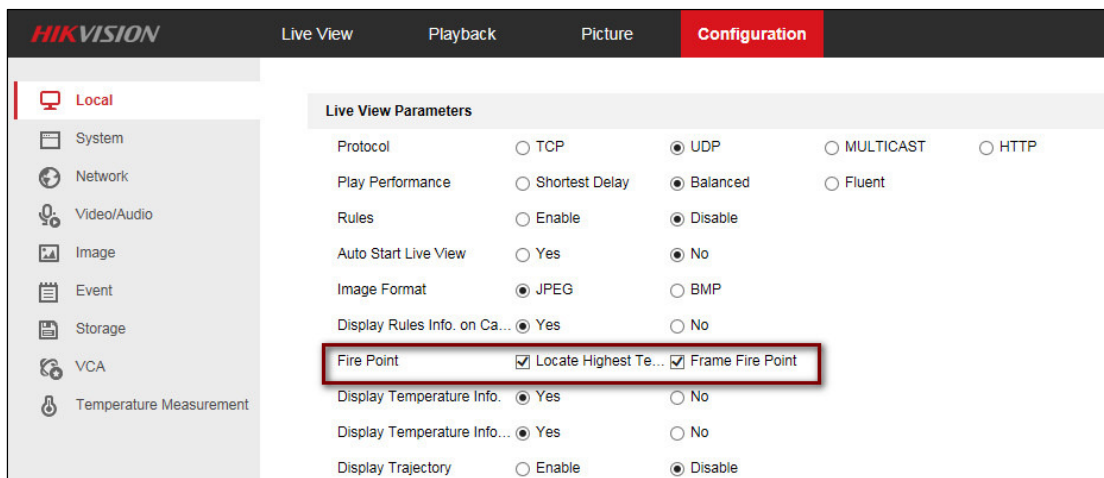


Figure 19, Fire Point

3. In the **Fire Source Detection Basic** section, check the **Enable Dynamic Fire Source Detection** checkbox.

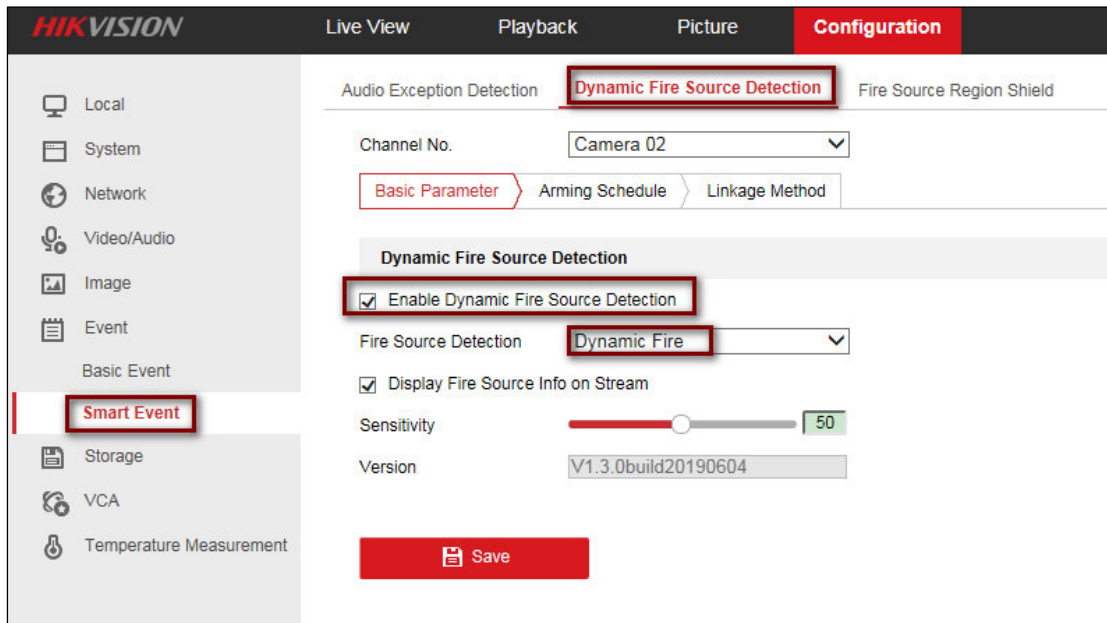


Figure 20, Enable Dynamic Fire Source Detection

4. Verify the **Fire Source** effect in live view.



Figure 21, Live View, Fire Source Effect

Display VCA Info by Video

Select **Display VCA Info by Video** to have the VCA info include **VCA info**, **temperature info**, and **fire source info** displayed together with the stream. VCA info will be displayed on a third-party platform.

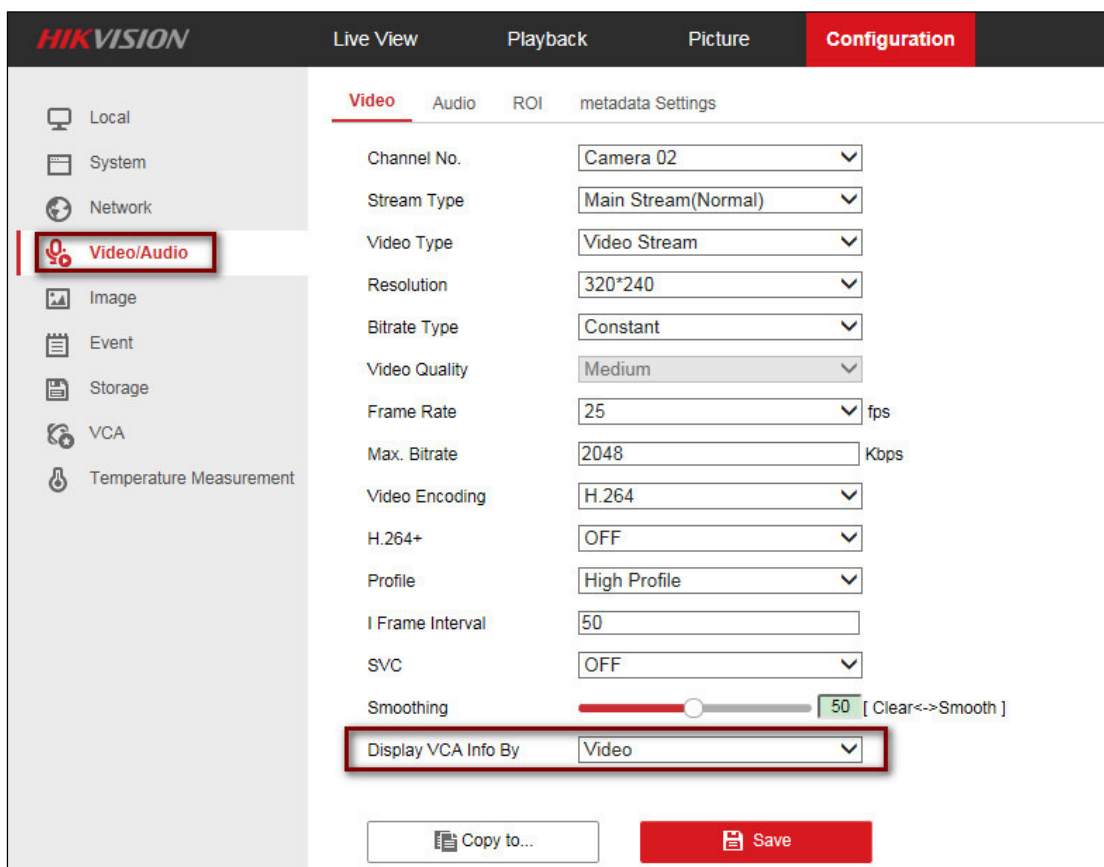


Figure 22, Display VCA Info By...

Image

1. Set **Palette**: Palettes let you select the desired colors: white hot, black hot, fusion 1, rainbow, fusion 2, ironbow1, ironbow2, sepia, color 1, color 2, ice fire, rain, red hot, green hot, and dark blue are selectable.

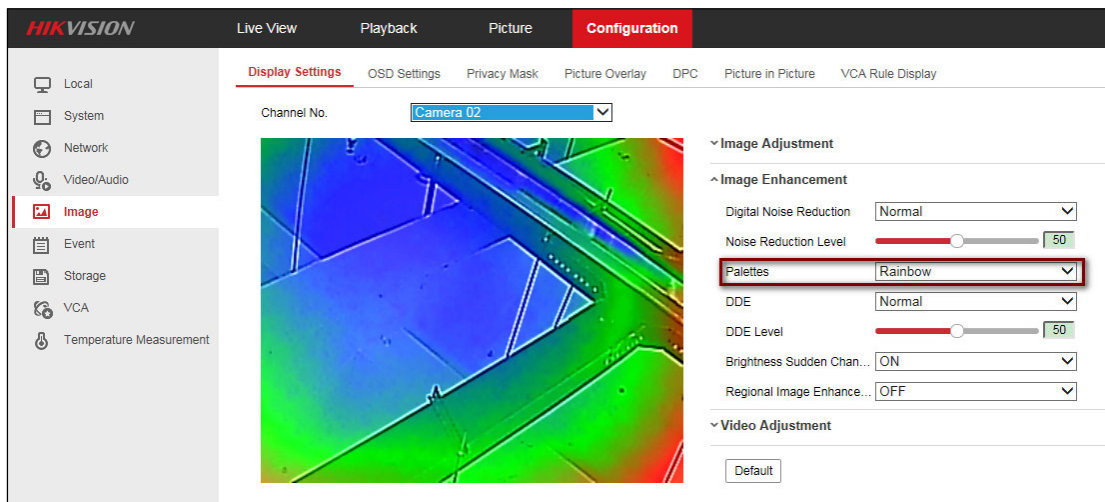


Figure 23, Palettes

2. Set **PIP Settings**: The system can display the thermal view overlapped on the optical view and display the thermal view with overlaid details.

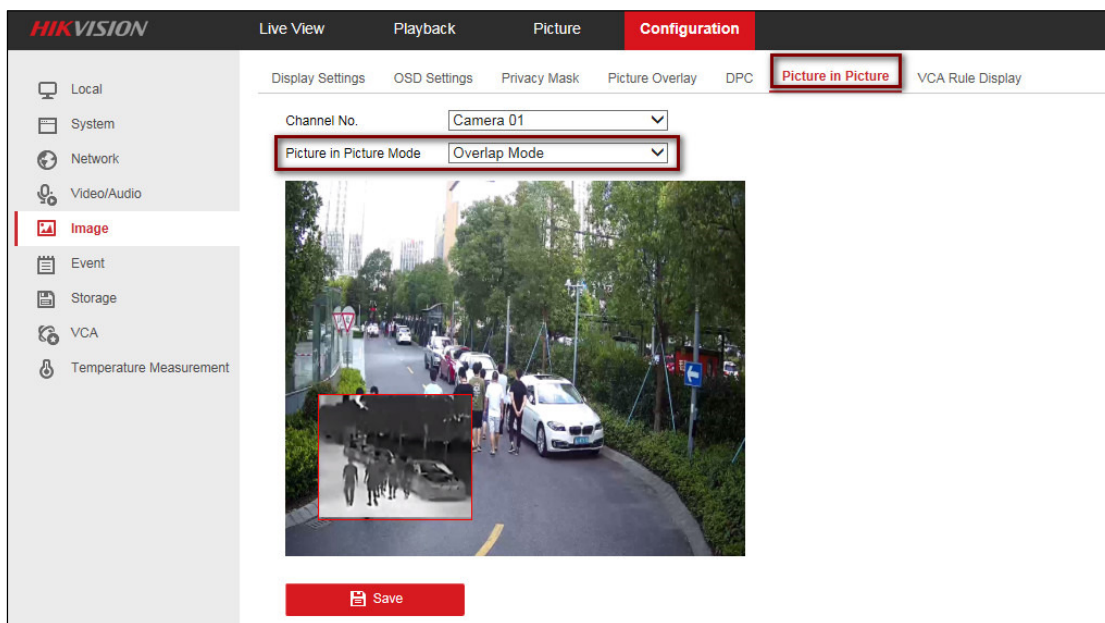


Figure 24, Overlap Mode Displays on Camera 01

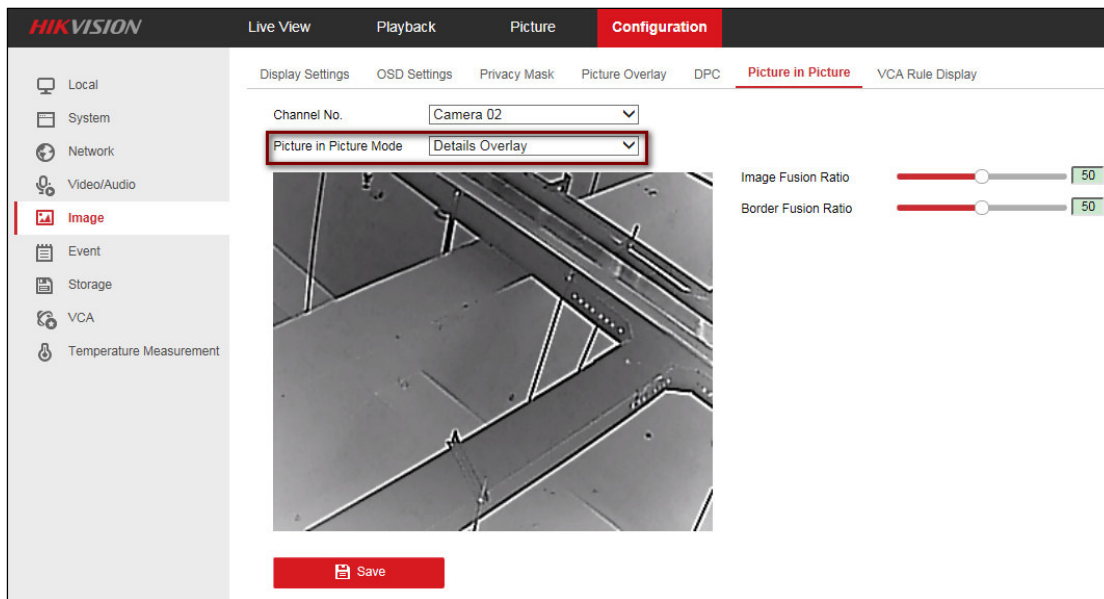


Figure 25, Details Overlay Mode Displays on Camera 02

NOTE: The two modes cannot be enabled at the same time.

3. Set the **Image Fusion Ratio (0–100, default = 75)**: Adjusts the blending ratio of the optical and thermal images' luminance components. 0 displays a fully optical image, 100 displays a fully thermal image. All color in the image is from the thermal image.
4. Set the **Border Fusion Ratio (0–100)**: The ratio of the optical edge information to the thermal image at the current **Image Fusion Ratio**. The larger the ratio, the sharper object edges will appear.

Temperature Highlight

In **White Hot** mode, you can customize different colors for objects with different temperatures.

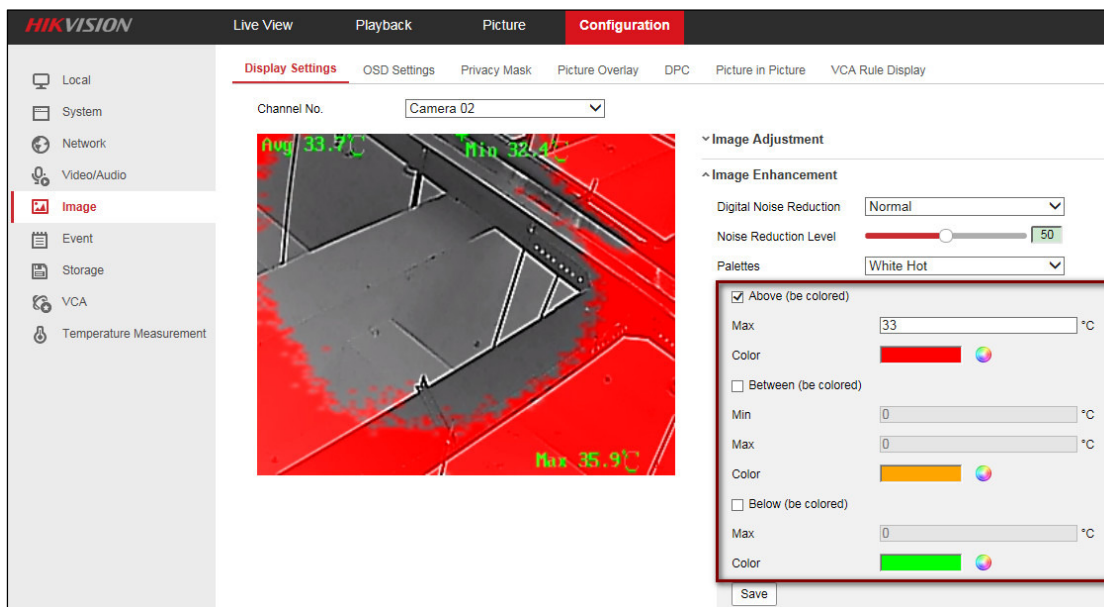


Figure 26, Display Colors