# How to integrate thermal camera using ISAPI

Please note that for how to configure device parameters, please contact local technical support personnel for support. Before integration, confirm that the relevant configurations on the device are configured and function normally on the device.

Test camera model: DS-2TD4137-25/WY

## RTSP preview stream

RTSP url format：

rtsp://admin:abcd1234@10.43.126.55/Streaming/Channels/201/

admin:abcd1234 is the camera’s user name and password; 10.43.126.55 is the camera’s IP address;

201: The first number represents the thermal/visible channel, the second and third number represent the code stream.

2 is thermal channel, 01 is code stream. (so 101 is visible channel).

### Get thermal channel stream by RTSP

rtsp://admin:abcd1234@10.43.126.55/Streaming/Channels/201/



### Get visible channel stream by RTSP

rtsp://admin:abcd1234@10.43.126.55/Streaming/Channels/101/



## Obtain real-time temperature measurement data

Protocol：

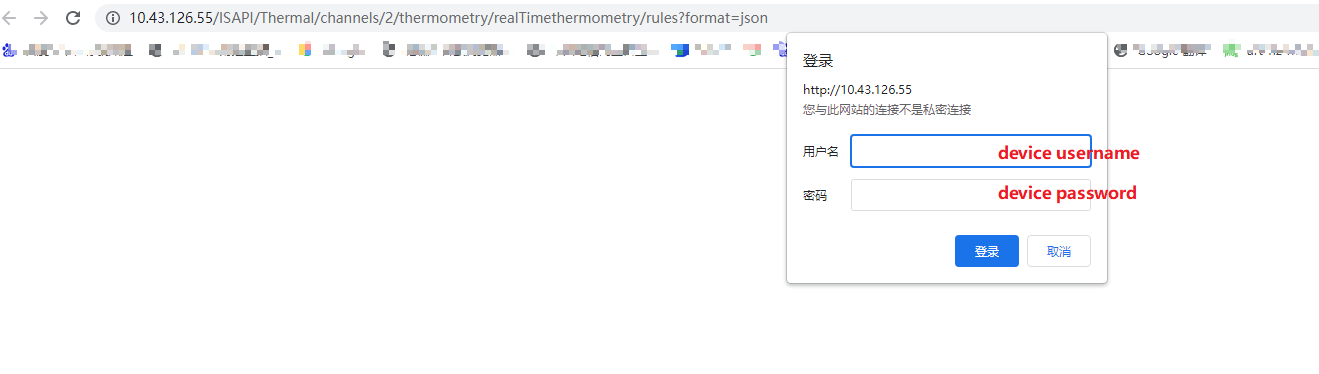
GET /ISAPI/Thermal/channels/<channelID>/thermometry/realTimethermometry/rules?format=json

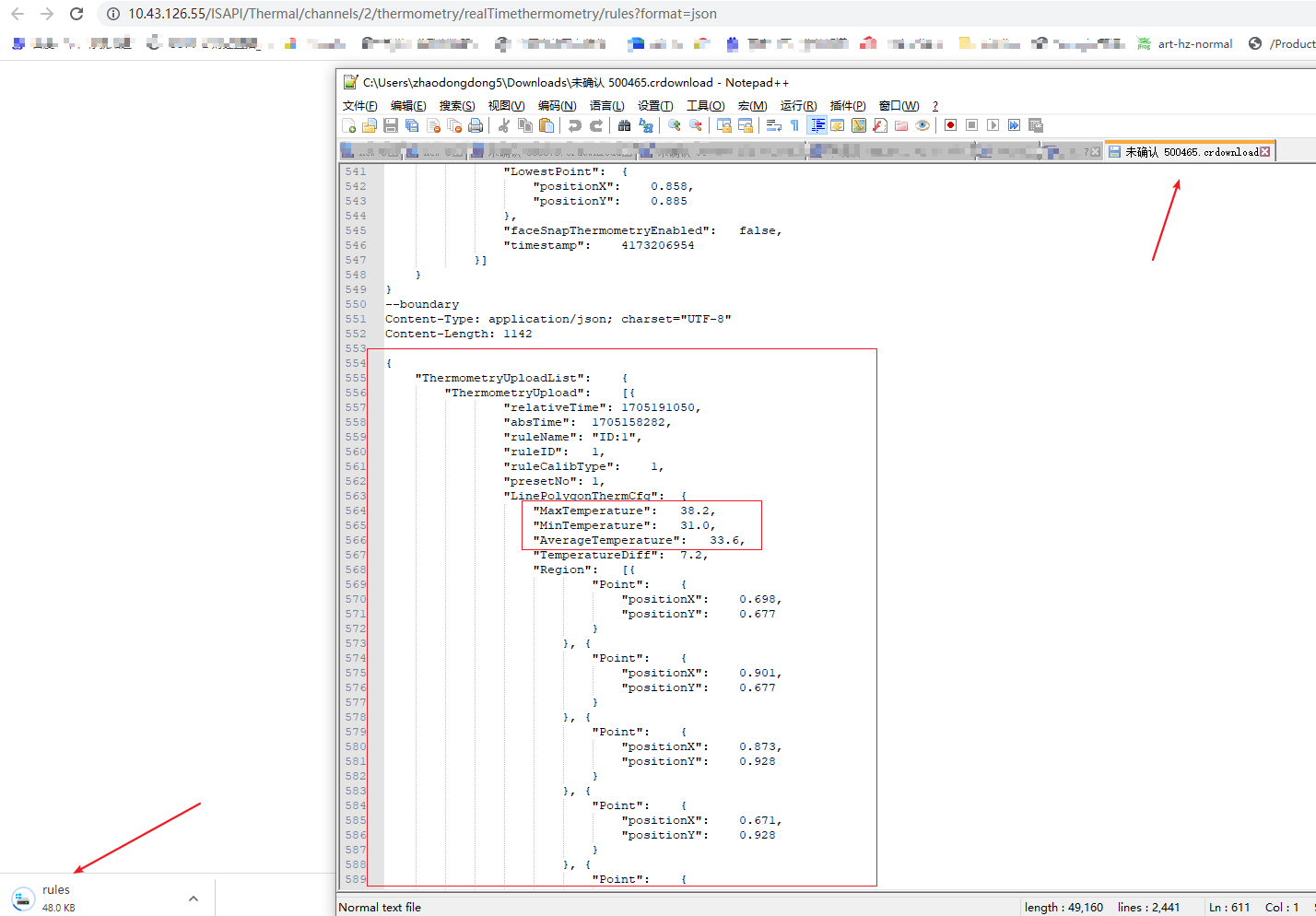
Receive data sample：

{  
    "ThermometryUploadList":    {  
        "ThermometryUpload":    [{  
                "relativeTime":    1705179702,  
                "absTime":    1705146934,  
                "presetNo":    0,  
                "LinePolygonThermCfg":    {  
                    "MaxTemperature":    55.0,  
                    "MinTemperature":    25.4,  
                    "AverageTemperature":    39.2,  
                    "TemperatureDiff":    29.6,  
                    "Region":    [{  
                            "Point":    {  
                                "positionX":    0.000,  
                                "positionY":    0.000  
                            }  
                        }, {  
                            "Point":    {  
                                "positionX":    0.000,  
                                "positionY":    1.000  
                            }  
                        }, {  
                            "Point":    {  
                                "positionX":    1.000,  
                                "positionY":    1.000  
                            }  
                        }, {  
                            "Point":    {  
                                "positionX":    1.000,  
                                "positionY":    0.000  
                            }  
                        }]  
                },  
                "thermometryUnit":    0,  
                "dataType":    2,  
                "isFreezedata":    false,  
                "HighestPoint":    {  
                    "positionX":    0.452,  
                    "positionY":    0.568  
                },  
                "LowestPoint":    {  
                    "positionX":    0.850,  
                    "positionY":    0.000  
                },  
                "faceSnapThermometryEnabled":    false,  
                "timestamp":    3280866134  
            }]  
    }  
}

Note that you need to establish a long HTTP connection with the device so that you can continue to receive test data pushed by the device. You can also use a browser to test directly.

<http://10.43.126.55/ISAPI/Thermal/channels/2/thermometry/realTimethermometry/rules?format=json>





## Receive temperature events

Protocol：GET [/ISAPI/Event/notification/alertStream](http://ip:port/ISAPI/Event/notification/alertStream)

### Temperature alarm：eventType:TMA

Temperature alarm message sample：

<EventNotificationAlert version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">  
<ipAddress>10.43.126.55</ipAddress>  
<portNo>80</portNo>  
<protocol>HTTP</protocol>  
<macAddress>58:50:ed:98:58:ca</macAddress>  
<dynChannelID>2</dynChannelID>  
<channelID>2</channelID>  
<dateTime>2025-06-17T15:30:55+08:00</dateTime>  
<activePostCount>185</activePostCount>  
<eventType>TMA</eventType>  
<eventState>active</eventState>  
<eventDescription>Temperature Measurement Alarm</eventDescription>  
<DetectionRegionList>  
<DetectionRegionEntry>  
<regionID>0</regionID>  
<RegionCoordinatesList>  
<RegionCoordinates>  
<positionX>0</positionX>  
<positionY>0</positionY>  
</RegionCoordinates>  
<RegionCoordinates>  
<positionX>0</positionX>  
<positionY>1000</positionY>  
</RegionCoordinates>  
<RegionCoordinates>  
<positionX>1000</positionX>  
<positionY>1000</positionY>  
</RegionCoordinates>  
<RegionCoordinates>  
<positionX>1000</positionX>  
<positionY>0</positionY>  
</RegionCoordinates>  
</RegionCoordinatesList>  
<TMA>  
<thermometryUnit>celsius</thermometryUnit>  
<ruleTemperature>56.0</ruleTemperature>  
<currTemperature>133.5</currTemperature>  
<ruleCalibType>region</ruleCalibType>  
<ruleType>highest temp is higher than</ruleType>  
<MaximumTemperaturePoint>  
<RegionCoordinates>  
<positionX>368</positionX>  
<positionY>900</positionY>  
</RegionCoordinates>  
</MaximumTemperaturePoint>  
<AbsoluteHigh>  
<elevation>-5.000</elevation>  
<azimuth>128.460</azimuth>  
<absoluteZoom>1.00</absoluteZoom>  
</AbsoluteHigh>  
<presetNo>0</presetNo>  
</TMA>  
</DetectionRegionEntry>  
</DetectionRegionList>  
<channelName>Camera 02</channelName>  
<detectionPicturesNumber>2</detectionPicturesNumber>  
<URLCertificationType>no</URLCertificationType>  
<thermalBackgroundImageResolution>  
<height>1080</height>  
<width>1920</width>  
</thermalBackgroundImageResolution>  
<visibleLightBackgroundImageResolution>  
<height>720</height>  
<width>1280</width>  
</visibleLightBackgroundImageResolution>  
</EventNotificationAlert>

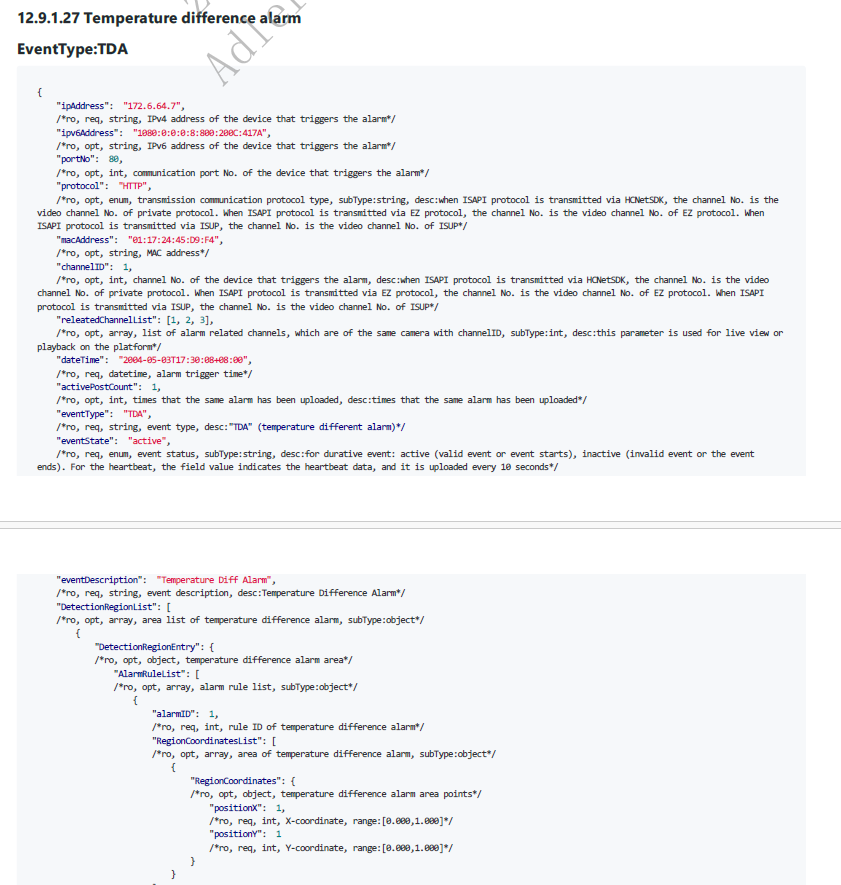
### Temperature pre-larm：eventType:TMPA

Temperature pre-alarm message sample：

<EventNotificationAlert version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">  
<ipAddress>10.43.126.55</ipAddress>  
<portNo>80</portNo>  
<protocol>HTTP</protocol>  
<macAddress>58:50:ed:98:58:ca</macAddress>  
<dynChannelID>2</dynChannelID>  
<channelID>2</channelID>  
<dateTime>2025-06-17T15:30:18+08:00</dateTime>  
<activePostCount>3</activePostCount>  
<eventType>TMPA</eventType>  
<eventState>active</eventState>  
<eventDescription>Temperature Measurement Precautionary Alarm</eventDescription>  
<DetectionRegionList>  
<DetectionRegionEntry>  
<regionID>1</regionID>  
<RegionCoordinatesList>  
<RegionCoordinates>  
<positionX>0</positionX>  
<positionY>0</positionY>  
</RegionCoordinates>  
<RegionCoordinates>  
<positionX>0</positionX>  
<positionY>1000</positionY>  
</RegionCoordinates>  
<RegionCoordinates>  
<positionX>1000</positionX>  
<positionY>1000</positionY>  
</RegionCoordinates>  
<RegionCoordinates>  
<positionX>1000</positionX>  
<positionY>0</positionY>  
</RegionCoordinates>  
</RegionCoordinatesList>  
<TMPA>  
<thermometryUnit>celsius</thermometryUnit>  
<ruleTemperature>45.0</ruleTemperature>  
<currTemperature>53.3</currTemperature>  
<ruleCalibType>region</ruleCalibType>  
<ruleType>highest temp is higher than</ruleType>  
<MaximumTemperaturePoint>  
<RegionCoordinates>  
<positionX>495</positionX>  
<positionY>955</positionY>  
</RegionCoordinates>  
</MaximumTemperaturePoint>  
<AbsoluteHigh>  
<elevation>-5.000</elevation>  
<azimuth>128.460</azimuth>  
<absoluteZoom>1.00</absoluteZoom>  
</AbsoluteHigh>  
<presetNo>0</presetNo>  
<alarmRuleTemperature>56.0</alarmRuleTemperature>  
</TMPA>  
</DetectionRegionEntry>  
</DetectionRegionList>  
<channelName>Camera 02</channelName>  
<detectionPicturesNumber>2</detectionPicturesNumber>  
<thermalBackgroundImageResolution>  
<height>1080</height>  
<width>1920</width>  
</thermalBackgroundImageResolution>  
<visibleLightBackgroundImageResolution>  
<height>720</height>  
<width>1280</width>  
</visibleLightBackgroundImageResolution>  
</EventNotificationAlert>

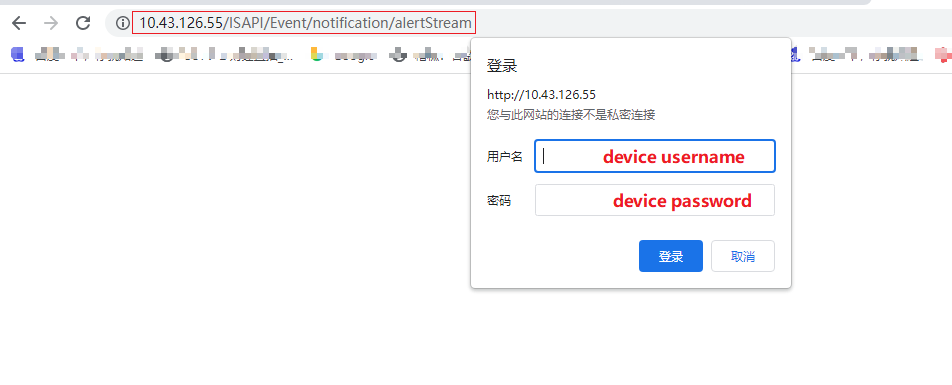
### Temperature difference alarm：eventType:TDA

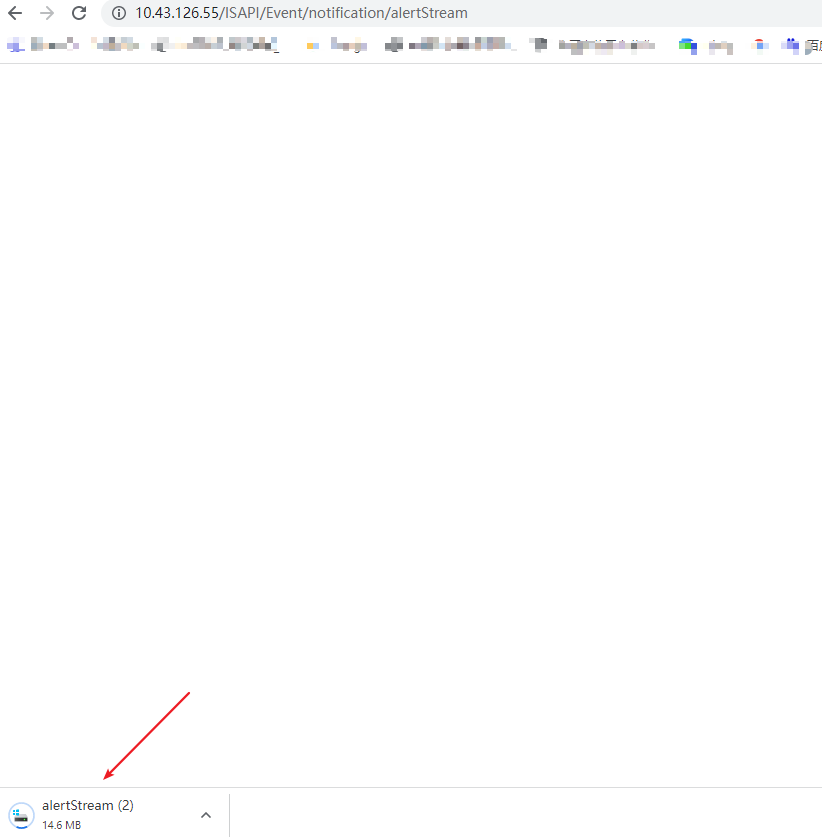
Temperature difference alarm message sample：

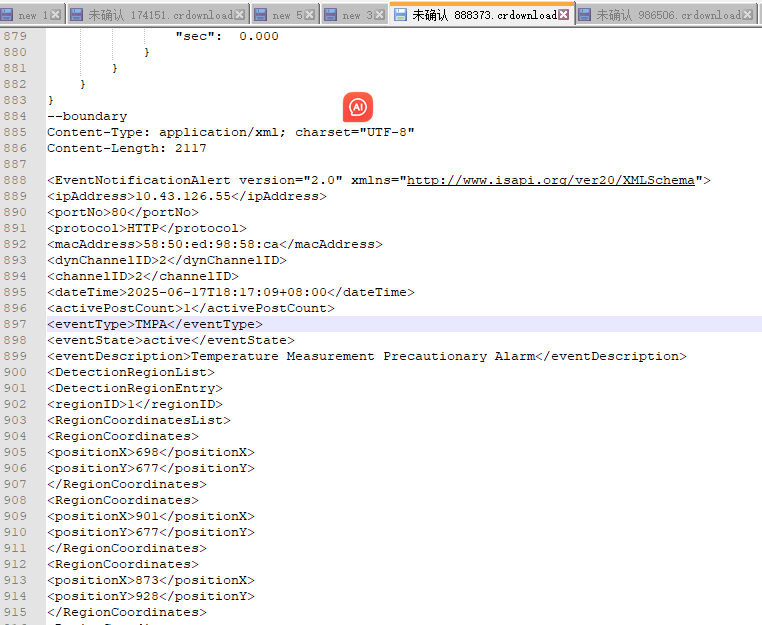


Note that you need to establish a long HTTP connection with the device so that you can continue to receive test data pushed by the device. You can also use a browser to test directly.

http://10.43.126.55/ISAPI/Event/notification/alertStream







## Temperature threshold configuration

### Normal mode

#### Method 1: You can configure the temperature threshold in the device web interface



#### Method 2: Call ISAPI protocol to configure temperature threshold

First, call the protocol GET /ISAPI/Thermal/channels/2/thermometry/basicParam to obtain the parameters, and use the returned message as the request parameter of the protocol PUT /ISAPI/Thermal/channels/2/thermometry/basicParam. At the same time, modify the fields alert

and alarm, where alert indicates the pre-alarm temperature threshold and alarm is the alarm temperature.

Request parameter example:

<?xml version="1.0" encoding="UTF-8"?>

<ThermometryBasicParam version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">

<id>2</id>

<enabled>true</enabled>

<streamOverlay>true</streamOverlay>

<pictureOverlay>true</pictureOverlay>

<temperatureRange>-20~150</temperatureRange>

<temperatureUnit>degreeCentigrade</temperatureUnit>

<emissivity>0.96</emissivity>

<distanceUnit>centimeter</distanceUnit>

<specialPointThermType>centerPoint</specialPointThermType>

<distance>2000</distance>

<reflectiveEnable>false</reflectiveEnable>

<alert>45.0</alert>

<alarm>56.0</alarm>

<showTempStripEnable>true</showTempStripEnable>

<AlertOutputIOPortList>

<OutputIOPort>

<portID>1</portID>

<enabled>false</enabled>

</OutputIOPort>

<OutputIOPort>

<portID>2</portID>

<enabled>false</enabled>

</OutputIOPort>

</AlertOutputIOPortList>

<AlarmOutputIOPortList>

<OutputIOPort>

<portID>1</portID>

<enabled>false</enabled>

</OutputIOPort>

<OutputIOPort>

<portID>2</portID>

<enabled>false</enabled>

</OutputIOPort>

</AlarmOutputIOPortList>

<alertFilteringTime>0</alertFilteringTime>

<alarmFilteringTime>0</alarmFilteringTime>

<displayMaxTemperatureEnabled>true</displayMaxTemperatureEnabled>

<displayMinTemperatureEnabled>true</displayMinTemperatureEnabled>

<displayAverageTemperatureEnabled>true</displayAverageTemperatureEnabled>

<thermometryInfoDisplayposition>rules\_around</thermometryInfoDisplayposition>

<emissivityMode>customsettings</emissivityMode>

<alarmInterval>3</alarmInterval>

<SunReflectionBlur>

<enabled>false</enabled>

<sensitivity>50</sensitivity>

<filterEnabled>false</filterEnabled>

<fireFilterEnabled>true</fireFilterEnabled>

<fireFluctuationThreshold>1</fireFluctuationThreshold>

<fireFluctuationPercentage>25</fireFluctuationPercentage>

</SunReflectionBlur>

<VehicleBlur>

<enabled>false</enabled>

<sensitiveLevel>2</sensitiveLevel>

<filterEnabled>false</filterEnabled>

<filteringTemperature>300.0</filteringTemperature>

</VehicleBlur>

<displayRuleNameEnabled >true</displayRuleNameEnabled >

<pixelToPixelOverlay>false</pixelToPixelOverlay>

<refreshPixelToPixeDataIntervalTime>3</refreshPixelToPixeDataIntervalTime>

<smokingFilter>

<enabled>false</enabled>

<sensitivity>50</sensitivity>

<filterEnabled>false</filterEnabled>

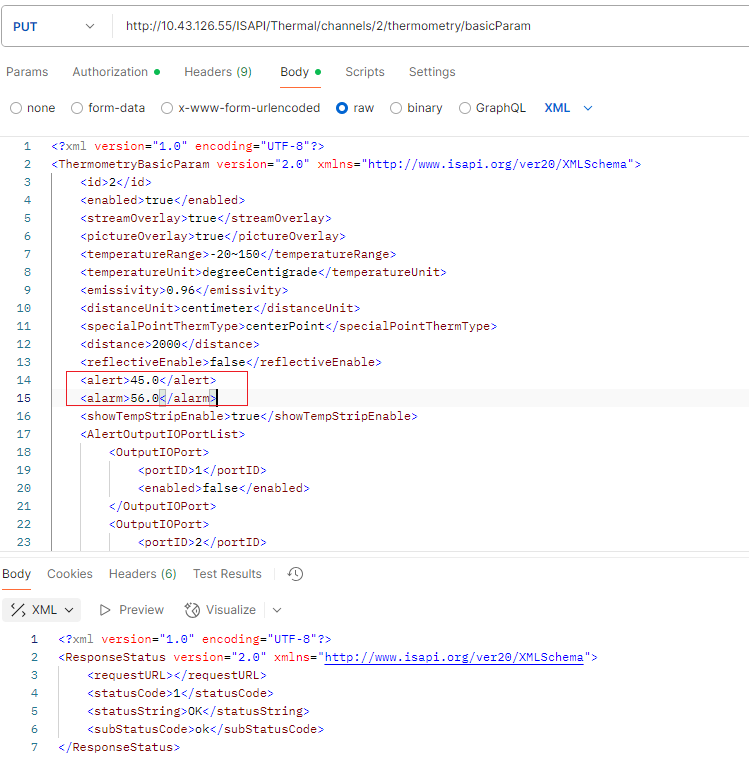
<smokingDetectionThreshold>1000</smokingDetectionThreshold>

<smokingAreaThreshold>5</smokingAreaThreshold>

</smokingFilter>

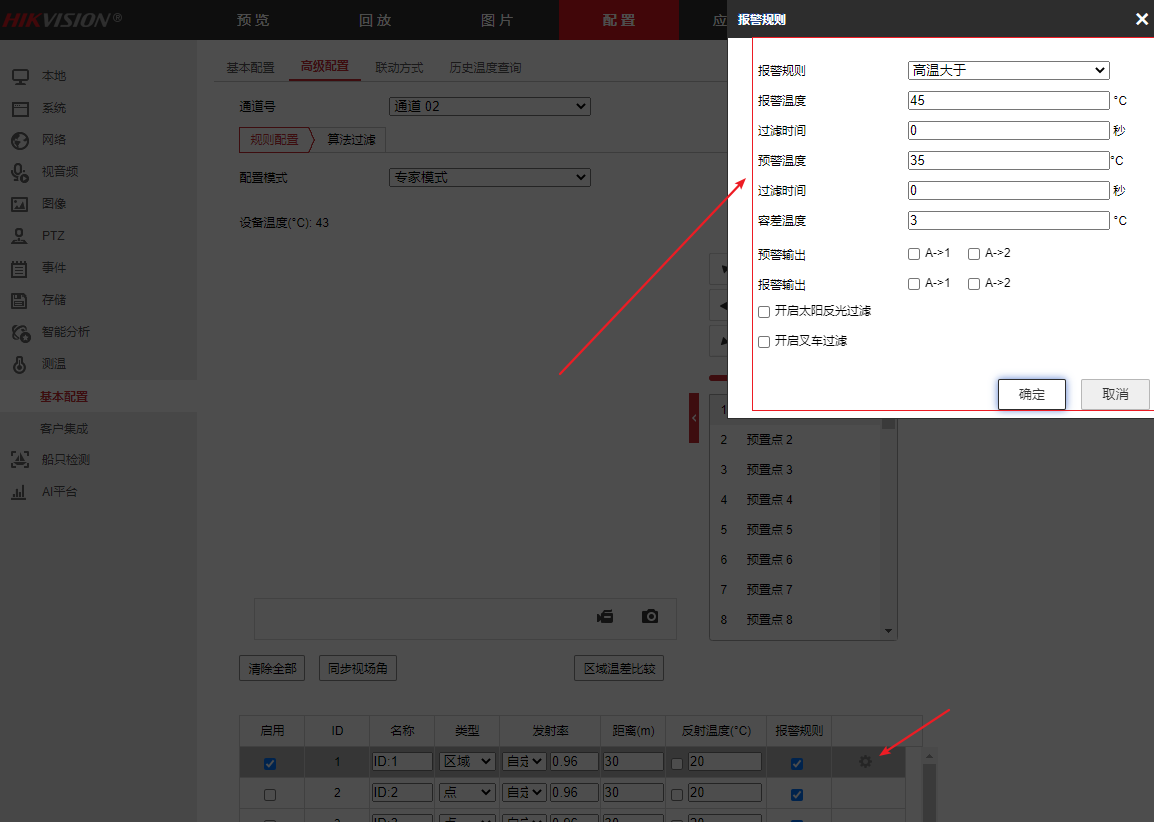
</ThermometryBasicParam>

Postman test example:



### Expert Mode

#### Method 1: You can configure the temperature threshold in the device web interface



#### Method 2: Call ISAPI protocol to configure temperature threshold

Protocol：PUT /ISAPI/Thermal/channels/2/thermometry/1/alarmRules

Request parameters:

<?xml version="1.0" encoding="UTF-8"?>

<ThermometryAlarmRule version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">

<ThermometryAlarmModeList size="21">

<ThermometryAlarmMode>

<id>1</id>

<enabled>true</enabled>

<name>ID:1</name>

<rule>highestGreater</rule>

<sunReflectionBlurEnabled>false</sunReflectionBlurEnabled>

<vehicleBlurEnabled>false</vehicleBlurEnabled>

<alert>35</alert>

<alarm>45</alarm>

<threshold>3</threshold>

<alertFilteringTime>0</alertFilteringTime>

<alarmFilteringTime>0</alarmFilteringTime>

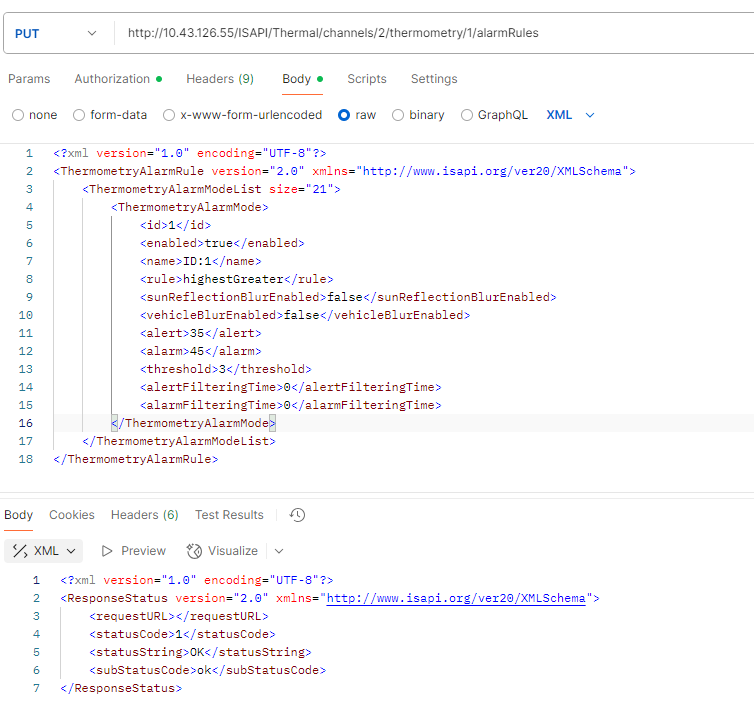
</ThermometryAlarmMode>

</ThermometryAlarmModeList>

</ThermometryAlarmRule>

Among them, alert indicates the warning temperature threshold, and alarm is the alarm temperature.

Postman test example:



## PTZ

Protocol：PUT /ISAPI/PTZCtrl/channels/<channelID>/continuous

Request parameters:

<?xml version="1.0" encoding="UTF-8"?>

<PTZData xmlns="http://www.isapi.org/ver20/XMLSchema" version="2.0">

<!--req, object, attr:version{req, string, protocolVersion}-->

<pan>

<!--opt, int, panning positive direction, range:[-100,100], desc:panning positive direction-->60

</pan>

<tilt>

<!--opt, int, tilting positive direction, range:[-100,100], desc:tilting positive direction-->60

</tilt>

<zoom>

<!--opt, int, range:[-100,100]-->60

</zoom>

<rotate>

<!--opt, int, range:[-100,100]-->60

</rotate>

</PTZData>

Move left request parameters Example:

<PTZData>

    <pan>-60</pan>

    <tilt>0</tilt>

</PTZData>

Move right request parameter example：

<PTZData>

    <pan>60</pan>

    <tilt>0</tilt>

</PTZData>

Stop Move Request Parameters Example：

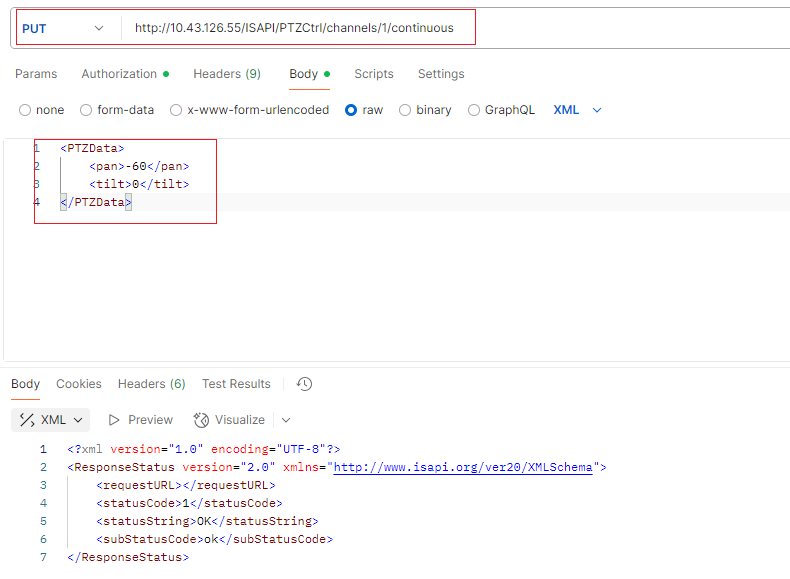
<PTZData>

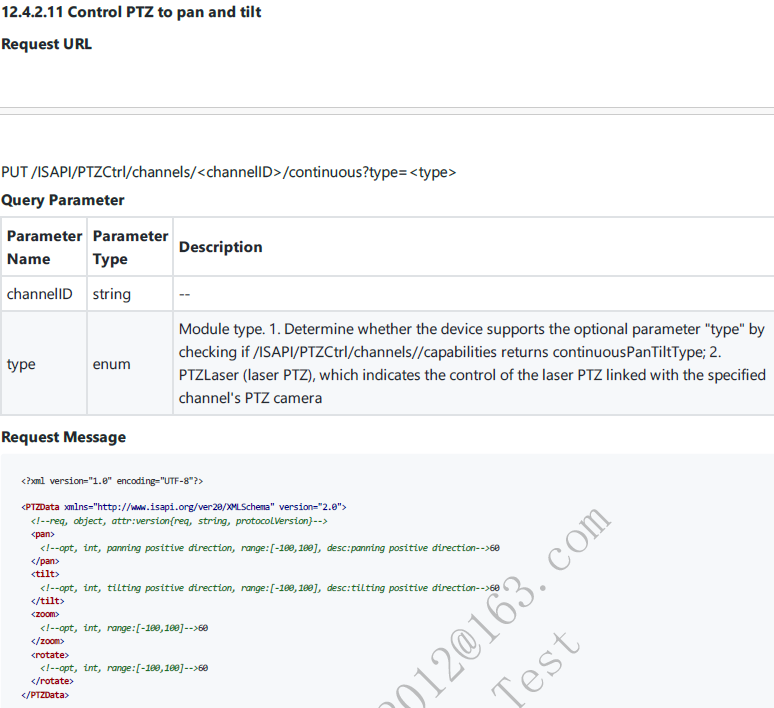
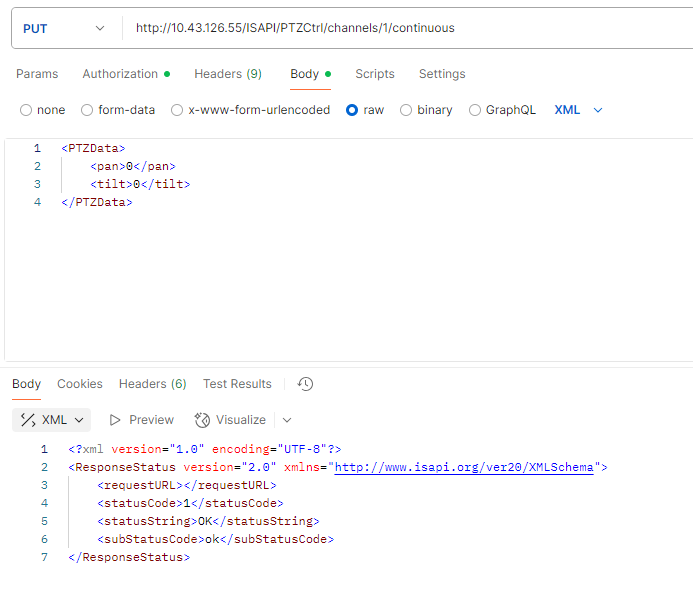
    <pan>0</pan>

    <tilt>0</tilt>

</PTZData>

Postman test example：





You can perform ptz operations on the device web interface, and you can see the ISPAI protocol called by the device. You can refer to the protocol sent by the device.

