# HIKVISION

# HD Video/Audio Decoder

# User Manual

**User Manual**©2015 Hangzhou Hikvision Digital Technology Co., Ltd.

This user manual is intended for users of Decoder ("Product"). It includes instructions on how to use the Product. The software embodied in the Product is governed by the user license agreement covering that Product.

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**Privacy Notice**

Surveillance laws vary by jurisdiction. Check all relevant laws in your jurisdiction before using this product for surveillance purposes to ensure that your use of this product conforms.

**Support**

Should you have any questions, please do not hesitate to contact your local dealer.

# Regulatory information
# FCC information

**FCC compliance:** This equipment has been tested and found to comply with the limits for 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:

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation.

# EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

# Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the device in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.



## *CHANGE THE DEFAULT PASSWORD*

*The default password (12345) for the Admin account is for first-time log-in purposes only. You **must** change this default password to better protect against security risks, such as the unauthorized access by others to the product that may prevent the product from functioning properly and/or lead to other undesirable consequences.*

*For your privacy, we strongly recommend changing the password to something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product.*

*Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.*

# Table of Contents

# CHAPTER 1

# Introduction

# 1.1 Description

Designed for the high-definition video monitoring system, DS-6400HDI-T Series HD Video/Audio Decoder is developed on the basis of TI platform, Linux operating system and Netra processor, ensuring high reliability and stability of system running.

DS-6400HDI-T Series HD Video/Audio Decoder is capable of decoding video at 8MP resolution and outputting decoded video via BNC, VGA, DVI or HDMI interfaces, and it also supports multiple network protocols and multiple stream transmission mode. The decoded video can be displayed on video wall or large screen.

# 1.2 Features

**Decoding Video and Audio**

Private H.264, standard H.264, MPEG2 and MPEG4 video stream formats are supported.

Support PS, RTP and private customized data encapsulation formats.

PAL and NTSC image standards supported.

DS-6401HDI-T provides the HDMI/VGA/BNC video output, and other models provide DVI/VGA/BNC video output.

Decode video stream at resolution of 8MP, 5MP, 3MP, 1080P, 720P, SVGA, VGA, 4CIF, DCIF, 2CIF, CIF and QCIF.

G.722, G.711A, G.711U, MPEG2-L2 and ACC audio stream formats are supported.

Support of getting stream and decoding by channel zero, stream ID, HiDDNS and VGA/DVI local channel (not supported by DS-6401HDI-T only).

Support of getting stream and decoding by URL method.

High-definition video output via DVI/VGA/HDMI connector and standard-definition video output via BNC connector.

Window jointing for video wall display.

**Decoding Capacity**

Refer to the following table for the decoding capacity and display modes of different models in normal decoding mode:

| Resolution Model | Resolution | | | | | Window-division Mode | Multi-display Mode |
|---|---|---|---|---|---|---|---|
| | 8MP | 5MP | 1080P | 720P | 4CIF | | |
| DS-6401HDI-T | 1-ch | 2-ch | 4-ch | 8-ch | 16-ch | 1/4/6/8/9/12/16 | -- |
| DS-6404HDI-T | 2-ch | 4-ch | 8-ch | 16-ch | 32-ch | 1/4/6/8/9/12/16 | 1×2, 1×3, 1×4, 2×1, 2×2 |
| DS-6408HDI-T | 4-ch | 8-ch | 16-ch | 32-ch | 64-ch | 1/4/6/8/9/12/16 | 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 3×2, 2×4, 4×2 |
| DS-6410HDI-T | 5-ch | 10-ch | 20-ch | 40-ch | 80-ch | 1/4/6/8/9/12/16 | 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 2×4, 2×5, 3×2, 3×3, 4×2, 5×2 |
| DS-6412HDI-T | 6-ch | 12-ch | 24-ch | 48-ch | 90-ch | 1/4/6/8/9/12/16 | 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 2×4, 2×5, 3×2, 3×3, 4×2, 5×2, 3×4, 4×3 |
| DS-6416HDI-T | 8-ch | 16-ch | 32-ch | 64-ch | 100-ch | 1/4/6/8/9/12/16 | 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 2×4, 2×5, 3×2, 3×3, 4×2, 5×2, 3×4, 4×3, 5×3, 3×5, 4×4 |

**Decoding Mode**

**Dynamic decoding**: Log on the remote encoder or remote stream media server to select a channel of video source to acquire video stream, and then decode and output the video for local display.

**Cycle decoding**: Set multiple remote monitoring channels on a decoding channel, and the decoder is capable of performing cycle decoding according to the configured sequence and time. The stream sources can be obtained via remote access to the encoder or stream media server and decoded for local output. A maximum of 64 channels are allowed for cycle decoding.

**Obtain stream from stream media server**: The decoder can receive real-time data by access to stream media server, and then decode the video stream and output them on the video wall. The private RTSP is adopted as the control protocol, and the TCP/UDP is used for receiving the data stream.

**Remote playback of record files**: By remote access to the encoding devices with storage capability, and directly obtain the record files from the encoder, and finally decode for local output.

**Network**

One 10/100/1000Mbps self-adaptive Ethernet interface.

Support TCP, UDP and Multicast network protocols.

Multiple DDNS settings: Peanut Hull, Dyndns, IPServer, NO-IP and HiDDNS.

Support SADP software to automatically search and discover the online devices in local network area.

Automatically get IP address by DHCP protocol.

Remote upgrading and maintenance can be done via web browser or client software.

**User Administration**

A maximum of 32 user accounts can be created by the system, including 1 administrator and 31 normal users. The user name of the administrator is admin, which cannot be modified, and the password is allowable to be modified by the administrator only; no deletion of the administrator is allowed, and the administrator is authorized to set the operation permissions for other users.

**Transparent Channel**

The decoder adopts the RS-232/RS-485 serial interface to realize transparent transmission, and the transparent channel of the decoder supports multicast transparent transmission as well. Multiple transparent channels can be established simultaneously.

**Two-way Audio**

The decoder is capable of realizing two-way audio with the remote client.

# CHAPTER 2

# Panels and Connections

## 2.1 Front Panel
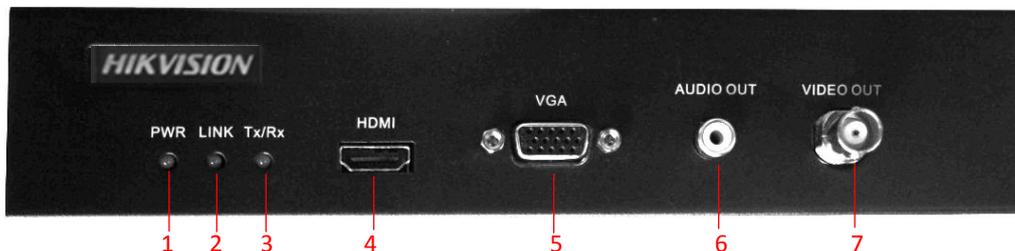


Figure 2.1 Front Panel of DS-6401HDI-T

Table 2.1 Description of Front Panel

|   | LED Indicator & Interface | Connections |
|---|---|---|
| 1 | POWER | Power LED indicator |
| 2 | LINK | Network connection LED indicator |
| 3 | Tx/Rx | Data transmitting/receiving status LED indicator |
| 4 | HDMI Video Output | HDMI output of decoded video |
| 5 | VGA Video Output | VGA output of decoded video |
| 6 | Audio Output | Audio output, 3.5mm connector |
| 7 | Video Output | Video output, BNC connector |
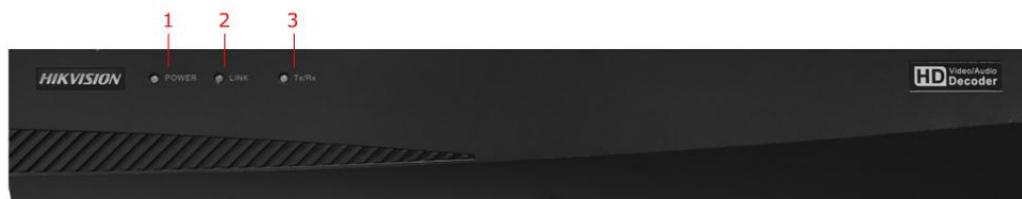


Figure 2.2 Front Panel of DS-6404/6408/6410/6412/6416HDI-T

Table 2.2 Description of Front Panel

|   | LED Indicator & Interface | Connections |
|---|---|---|
| 1 | POWER | Power LED indicator |
| 2 | LINK | Network connection LED indicator |
| 3 | Tx/Rx | Data transmitting/receiving status LED indicator |

## 2.2 Rear Panel
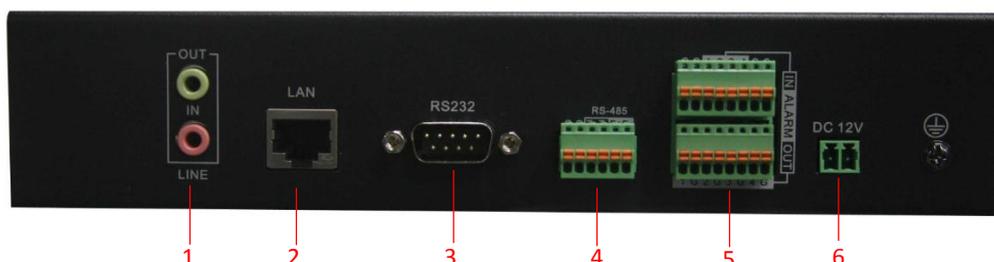


Figure 2.3 Rear Panel of DS-6401HDI-T

Table 2.3 Description of DS-6401HDI-T Rear Panel

| | Interface | Connections |
|---|---|---|
| 1 | LINE IN/OUT | Two-way audio input/output, 3.5mm connector. |
| 2 | LAN | 10/100/1000 Mbps Ethernet interface |
| 3 | RS-232 Serial Interface | Connect to RS-232 devices, e.g., PC, etc. |
| 4 | RS-485 Serial Interface | Connect to RS-485 devices, e.g., keyboard, etc. |
| 5 | Alarm In | 4 alarm inputs |
| 5 | Alarm Out | 4 alarm outputs |
| 6 | Power Supply | 12 VDC power input |

**Rear Panel of DS-6416HDI-T**
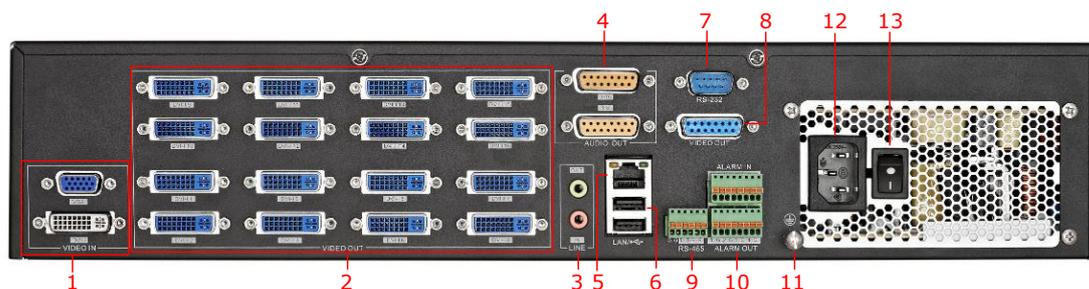


Figure 2.4 Rear Panel of DS-6416HDI-T

*Note:* For DS-6404/6408/6410/6412HDI-T models, 4/8/10/12 DVI-I video output connectors are provides on the rear panel.

Table 2.4 Description of DS-6416HDI-T Rear Panel

| | Interface | Connections |
|---|---|---|
| 1 | VGA Video Input | VGA video input |
| 1 | DVI-I Video Input | DVI-I video input ( support DVI-to-VGA adapter) |
| 2 | DVI-I Video Output | DVI output of decoded video |
| 3 | LINE IN/OUT | Two-way audio input/output, 3.5mm connector. |
| 4 | AUDIO OUT | DB15 connector for audio out, connecting to audio output device with the DB15-to-BNC adapter. |
| 5 | LAN | 10/100/1000 Mbps Ethernet interface |
| 6 | USB Interface | Reserved |
| 7 | RS-232 Serial Interface | Connect to RS-232 devices, e.g., PC, etc. |
| 8 | VIDEO OUT | DB15 connector for video output, connecting to video output device (e.g., monitor) with the DB15-to-BNC adapter. |
| 9 | RS-485 Serial Interface | Connect to RS-485 devices, e.g., keyboard, etc. |
| 10 | Alarm In | 4 alarm inputs |
| 10 | Alarm Out | 4 alarm outputs |
| 11 | GND | Grounding |
| 12 | Power Supply | Power input interface |
| 13 | Power Switch | Power On/Off Switch |

# CHAPTER 3

# Initial Network Parameters

# Configuration

***Purpose:***

If you don't know the IP address of the decoder and this is not the first time you use the decoder, you can use SADP (IP finder) software or the Serial port tools to find out the IP address of the decoder and to configure the IP address or other network parameters of it. It is recommended to change the default IP address for the first time to use it.

This chapter aims to tell the procedures of using the SADP software to find and configure the IP address and other parameters of the device.

*Note:*

For the first-time user, the default user name of DS-6400HDI-T is *admin*, and the default IP address is 192.0.0.64. It is highly recommended to change the default user name and password after initial use.

# 3.1 Searching Active Devices Online

- **Search online devices automatically**
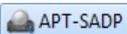
Click [APT-SADP] to run the SADP software and it will automatically search the online devices every 15 seconds from the subnet where your computer locates. It displays the total number and information of the searched devices in the **Online Devices** interface. Device information including the device type, IP address, port number, gateway, etc. will be displayed.
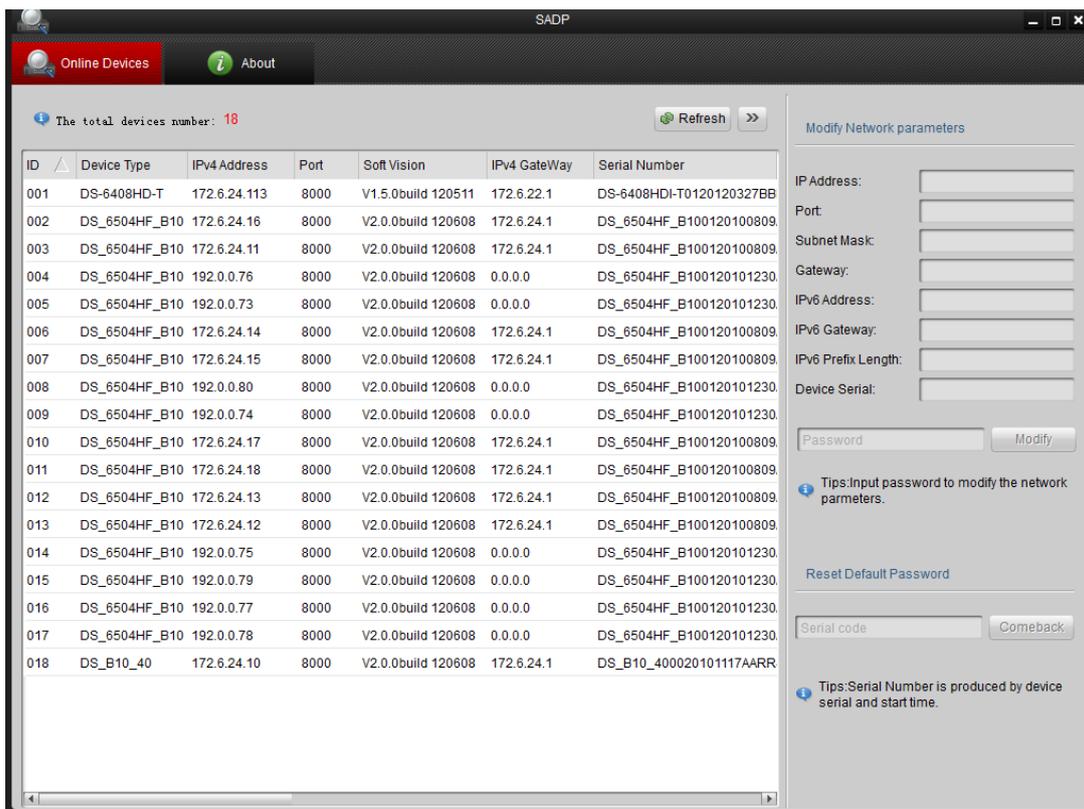


Figure 3.1 Search Online Device by SADP

*Note:* Device can be searched and displayed in the list in 15 seconds after it went online; it will be removed from the list in 45 seconds after it went offline.

- **Search online devices manually**

You can also click Refresh to refresh the online device list manually. The newly searched devices will be added to the list.

*Note:* You can click △ or ▽ on each column heading to order the information; you can click » to expand the device table and hide the network parameter panel on the right side, or click « to show the network parameter panel.

## 3.2 Modifying Network Parameters

*Steps:*

1. Select the device to be modified in the device list and the network parameters of the device will be displayed in the **Modify Network Parameters** panel on the right side.
2. Edit the modifiable network parameters, e.g., IP address, port number and gateway.
3. Enter the password of the admin account of the device in the **Password** field and click Modify to save the changes.
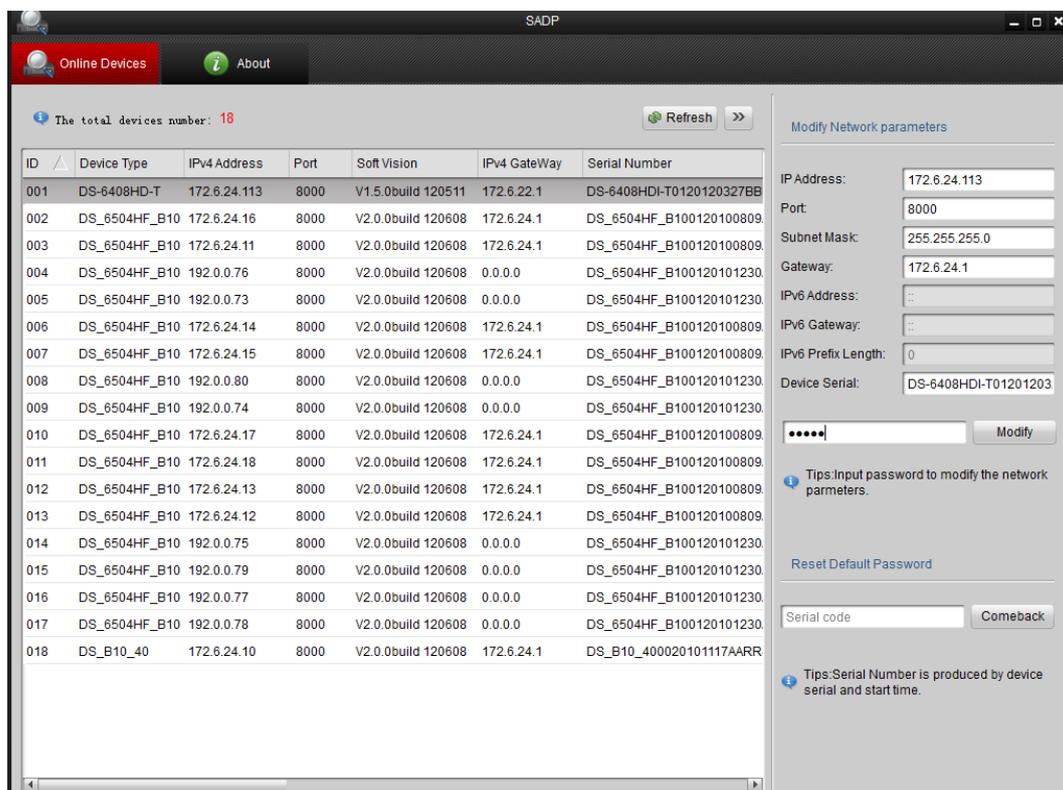


Figure 3.2 Add Searched Online Device

# CHAPTER 4

# Decoder Configuration and Operation by

# Web Browser

***Purpose:***

Since there is no local operation GUI provided for the decoder, you can manage and configure it by web browser or the iVMS-4200 client software. In this chapter, the operation and management of the decoder by the web browser is provided.

*Note:* The tested Web browsers include: IE7 and IE8, chrome, safari and firefox4.

Open the Web browser and input the IP address of Decoder (e.g., http://192.168.0.0) to enter the login page:
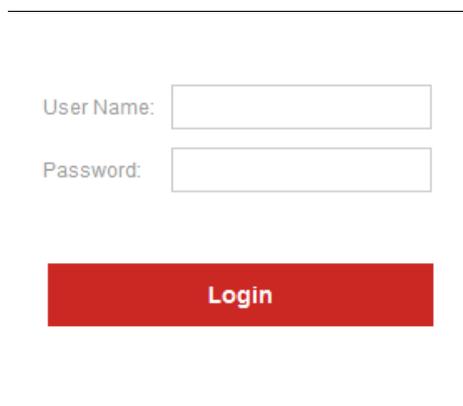


Figure 4.1 Login Interface

Enter the user name and password of the device in the dialog box and then click **Login** to log into the system. By default, the user name for login is *admin* and the password is *12345*.

The default password (12345) for the Admin account is for first-time log-in purposes only. You must change this default password to better protect against security risks, such as the unauthorized access by others to the product that may prevent the product from functioning properly and/or lead to other undesirable consequences.

The main interface of the control panel of the decoder is showed after successful login.



Figure 4.2 Enter WEB Page of Decoder

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# 4.1 Decoding Operation

## 4.1.1 Configuring Decoded Video Display

*Purpose:*

To realize the display of the decoded video on the video wall, you must set the decoding operation parameters.

*Before you start:*

Check the cabling of the decoder, and ensure that the decoder is connected to the video wall or monitor via the video output interfaces.

To set the video output of the decoder, the first step is to choose the video output interfaces.

*Steps:*

1.  Click **Decode Operation** > **Decode Mode** > **Display Control** to enter the display control interface:

    For the DS-6401HDI-T models, the VGA, BNC and HDMI video output interfaces are provided; and for DS-6404/6408/6410/6412/6416HDI-T, the DVI-I, VGA and BNC video output interfaces are provided.
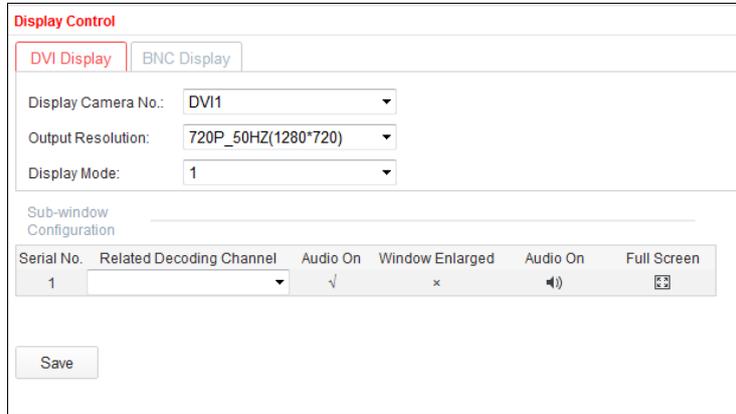


Figure 4.3 Display Configuration

2.  In the display control interface, you can configure the Display Channel, Video Format (BNC), BNC Output Scaling (BNC), Output Resolution (VGA, HDMI, DVI) and Display Mode.
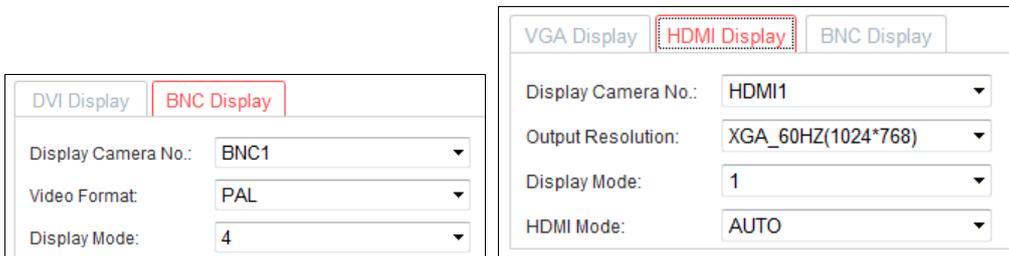


Figure 4.4 Configure Display Parameters

3.  Select the window-division display mode. The DS-6400HDI-T series supports 1/4/6/8/9/12/16-division display mode.

4.  Select the decoding channel from the drop-down list for each sub-window.

5.  Click **Save** to save the settings.

After having configured the window-division display, the sub-window information can be viewed on the interface.

*Note:* You can click the [ ] button to enlarge the selected sub-window in full screen mode.

# 4.1.2 Configuring Dynamic Decoding

After you have configured the decoded video display mode, you can enable the dynamic decoding now.

Dynamic decoding means that you decode one channel for one decoding window.

*Steps:*

1.  Click **Decode Operation** > **Decode Mode** > **Dynamic Decoding** to enter the dynamic decode settings interface.
2.  Select a decoding channel from the drop-down list which has been configured for the sub-window in Display Control Configuration interface.
3.  Configure the dynamic decoding mode for the selected channel.

Three decoding modes are selectable: **IP Mode, URL Mode** and **DDNS Mode**.

**Task1: Set Encoding Device by IP Mode**



Figure 4.5 Set Encoding Device by IP Mode

Configure the following settings:

- **Manufacturer:** Select the Manufacturer of encoding device connected to be decoded. Encoding devices from the following manufactures are supported: PRIVATE, PANASONIC, SONY, AXIS, SANYO, BOSCH, ZAVIO, ARECONT, PELCO, SAMSUNG and ONVIF.
- **Remote Host Address:** Enter the IP address of the encoding device to be decoded.
- **Remote Host Port:** Enter the port of the encoding device to be decoded.
- **Channel Type**: Select the channel type of the encoding device for decoding. Four types are selectable: normal, channel-zero, stream ID and local channel.

  **Normal**: Get the stream from the encoding device by IP address.

  **Channel-zero**: Get the stream from encoding device (DVR) by channel-zero.

  **Stream ID**: Get the stream from the device (transcoder) which supports access by stream ID.

  **Local Channel**: Get the stream by local video input (DVI and VGA) for DS-6410/6412/6416HDI-T series.

Figure 4.6 Set Channel Type

- **Remote Host Channel No.:** Enter the channel No. of the encoding device for decoding.
- **User Name/Password:** Enter the user name and password used for login to the encoding device.
- **Transmission Protocol:** Select the network transmission protocol to TCP, UDP or Mcast. The default protocol is TCP.
- **Stream Type:** Set the stream type to be decoded and the default type is main stream. The sub-stream is supported for decoding when the encoding device supports dual-stream.
- **Enable Stream Media Server (optional):** Enable the stream media server if required.
  - **Stream Media Server IP Address:** Enter the IP address of the server.
  - **Stream Media Server Port:** Enter the port No. of the server and the default port is 554.
  - **Stream Media Server Protocol:** Select the protocol of the server and the default protocol is TCP.

**Task 2: Set Encoding Device by URL Mode**



Figure 4.7 Set Encoding Device by URL Mode

**URL format:**

*rtsp://{normal rtsp url}{? username=xxxxx?password=xxxxx? linkmode=xxx},*

- **normal rtsp url:** enter the normal RTSP URL format, e.g., *172.6.24.66:554/h264/ch1/main/av_stream*.
- **?username:** Enter the user name of the encoding device. Max. length: 32 bytes.
- **?password:** Enter the password used for login to the encoding device. Max. length: 16 bytes.
- **?linkmode**: Set the protocol to TCP or UDP which is case-insensitive.

*Example:*

*rtsp://172.6.24.66:554/h264/ch1/main/av_stream?username=admin?password=12345?linkmode=udp*

*Notes:*

*1)* When the stream media server is used, the stream media information must be added, e.g., rtsp://*172.6.22.125:554/hikvision://172.6.22.144:8000:2:0?username=admin?password=12345?linkmode=TCP.*

*2)* The length of URL should be less than 240 bytes.

*3)* The URL mode can only be activated when using with the SMS 4.0 or above version of iVMS-4200 client software.

**Task 3: Set Encoding Device by DDNS Mode**
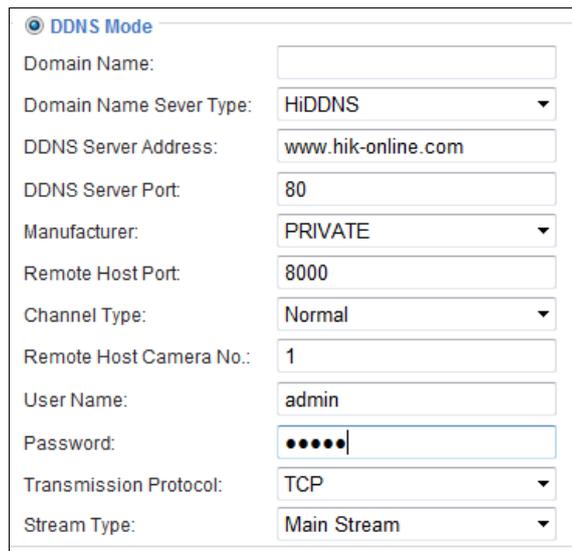
Figure 4.8 Set Encoding Device by DDNS

Configure the following settings:

**Domain Name:** Input the registered domain name of the DDNS server for the encoding device for decoding.

**Domain Name Server Type**: Select the DDNS server type. Currently only the HiDDNS is available.

**DDNS Server Address**: Input the address of the DDNS server (www.hik-online.com).

**DDNS Server Port**: Input the port number of the DDNS server (e.g., 80).

**Manufacturer**: Select the Manufacturer of encoding device connected to be decoded. Encoding devices from the following manufactures are supported: PRIVATE, PANASONIC, SONY, AXIS, SANYO, BOSCH, ZAVIO, ARECONT, PELCO, SAMSUNG and ONVIF.

**Remote Host Port**: Enter the port No. of the encoding device for decoding (e.g., 8000).

**Channel Type**: Select the channel type of the encoding device for decoding. Four types are selectable: normal, channel-zero, stream ID and local channel.

**Remote Host Channel No**.: Input the channel No. of the encoding device for decoding. The value 0 represents channel 1, 1 represents channel 2, and so forth.

**User Name/Password:** Enter the user name and password used for login to the encoding device.

**Transmission Protocol**: Select the network transmission protocol to TCP, UDP or Mcast. The default protocol is TCP.

*Note:* In order to ensure the normal login and operation of the decoder, the bandwidth should not exceed 128Mbps when the UDP protocol is selected for getting stream and not exceed 160Mbps when the TCP is adopted.

**Stream Type**: Set the stream type to be decoded and the default type is main stream. The sub-stream is supported for decoding when the encoding device supports dual-stream.

4. Click **Start Decoding** to start decoding, and the decoding status can be viewed in the **Connection Status** or the **Decoding Channel** status interface. And you can view the image from the remote encoding device that is decoded and displayed on the screen.

# 4.1.3 Configuring Cycle Decoding

*Purpose:*

Comparing with the dynamic decoding, the cycle decoding means that you can configure multiple input streams

(the remote encoding devices) to one output (the channel displayed on the screen).

***Steps:***

1. Click **Decode Operation** > **Decode Mode** > **Cycle Decoding** to enter the Cycle Decoding interface.
2. Select a decoding channel from the drop-down list which has been configured for the sub-window in Display Control Configuration interface.
3. Enter the **Cycle Time** (1~1000 sec).

   The cycle time refers to the time duration for decoding each input signal to the defined channel and displaying on the screen.



Figure 4.9 Configure Cycle Decoding

4. In the list of IP Mode/URL Mode/DDNS Mode, select an item and click **Edit** to enter the following interface to add a new input stream for decoding or edit the existed input stream by IP mode, URL mode or DDNS mode.

   *Note:* Refer to *Chapter 4.1.2* for configuring the input stream assigned to the cycle decoding channel by IP mode, URL mode or DDNS mode.



Figure 4.10 Edit Cycle Decoding of a Channel

5.   Click **OK** to save the settings and back to the Cycle Decoding interface, or click **Back** to back to the Cycle Decoding interface without saving.

6.   Repeat Step4 and Step5 to edit other input streams for cycle decoding.

You can also click **Delete** to remove the configured input stream from the list.

*Note:* Up to 64 input streams can be configured for each cycle decoding channel.



Figure 4.11 Configure Input Streams for Decoding

7.   Click **Save** to save the configuration of input streams for the cycle decoding.

*Example:*

**Configuration**: Decoding Channel: Channel 1, Cycle Time: 10 seconds, input streams configured for decoding: 10.

**Result**: the video streams from these 10 input channels will be decoded by decoding channel 1 and displayed on the screen in sequence with the duration of 10 seconds for each.

# 4.1.4 Configuring Video Wall Display

The DS-6404/6408/6410/6412/6416HDI-T supports the configuration for the multi-screen video wall display of the decoded video.

*Steps:*

1.   Click **Decode Operation** > **Video Wall** to enter the following interface:



Figure 4.12 Configure Video Wall

2.   Select the Screen No.  from the drop-down list.

3.   Select the Screen Jointing Mode. Different modes are selectable based on models:

DS-6404HDI-T: 1×2, 1×3, 1×4,  2×1, 2×2.

DS-6408HDI-T: 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 3×2, 2×4, 4×2.

DS-6410HDI-T: 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 2×4, 2×5, 3×2, 3×3, 4×2, 5×2.

DS-6412HDI-T: 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 2×4, 2×5, 3×2, 3×3, 4×2, 5×2, 3×4, 4×3.

DS-6416HDI-T: 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 2×4, 2×5, 3×2, 3×3, 4×2, 5×2, 3×4, 4×3, 5×3, 3×5, 4×4.

4. Select the Related Decoding Channel for the selected video wall.

5. Set the Output Resolution.

   *Note:* You can select the *NOT_AVAILABLE* option in the Output Resolution to clear the current video wall configuration.

6. In the Video Output Configuration area, select the Display Channel for each screen.

7. Click **Save t**o save the settings.

   *Notes:*

   ● The BNC video output does not support large screen display currently.

   ● It is recommended to configure the display channels with the same video output type for each large screen, e.g., VGA1, VGA2, VGA3…; or HDMI1, HDMI2, HDMI3….

   The display sequence of sub-screens in different screen modes (with DS-6404/6408HDI-T for example) is shown below:
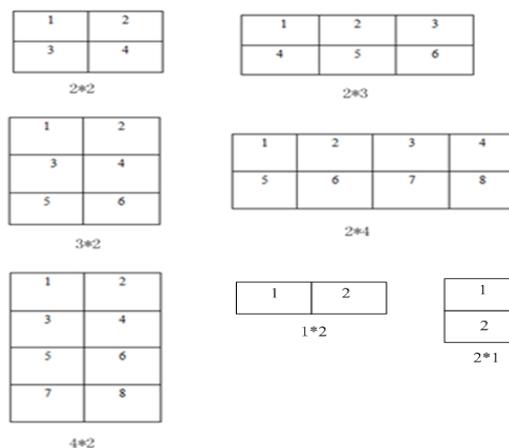


Figure 4.13 Multi-screen Video Wall Display

# 4.1.5 Enabling/Disabling the Decoding Channel

*Purpose:*

The Channel On/Off function enables you to start or stop the decoding and displaying for certain channels.

*Steps:*

1. Click **Decode Operation** > **Decode Control** > **Channel On/Off** to enter the following interface:
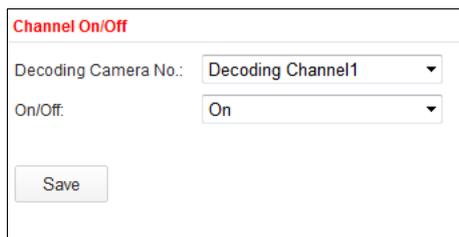


Figure 4.14 Configure Channel On/Off

2.  Select a decode channel in the drop-down list in the **Decode Channel** field.
3.  Set the decoding channel to On or Off.
4.   Click **Save** to save the settings.

# 4.1.6 Configuring Picture Overlay

***Purpose:***

The Picture Overlay function can overlay a picture on the screen for the selected decode channel, and the position of the picture overlaid on the screen can also be set here.

***Steps:***

1.  Click **Decode Operation** > **Decode Control** > **Picture Overlay** to enter the following interface:



Figure 4.15 Configure Picture Overlay

2.  Select the decode channel in the drop-down list in the **Decoding Channel No.** field.
3.  Click **Browse** to choose a picture from the local directory, and then upload it by clicking the **Upload** button.
4.  Set the X coordinate and the Y coordinate of the picture displayed on the screen to move the picture up and down and left and right.

*Note:* The picture must be in 24-bit BMP format and its width and height must be 32X pixel, with up to 128×128 resolution and 24 bits depth.

5.  You can check the checkbox of **Flash** to set the display style of the picture.
6.  Set the picture to show or hide.
7.  Click **Save** to save the settings.

# 4.1.7 Checking the Connection Status

***Purpose:***

The connection status shows the status of the decoding status and the network connection status of the decoding channel.

Click **Decode Operation** > **Decoding Status** > **Connection Status** to view the connection status of the current decoding channel in IP mode, URL mode or DDNS mode.

You can view the status of the network connection displayed on the interface.

*Note:* The connection status of device will be refreshed regularly.

# 4.1.8 Checking the Decoding Channel Status

Click **Decode Operation** > **Decoding Status** > **Decoding Channel** to view the status information of the current decoding channel, including the channel No., decoding status, encoding  type, etc. Refer to the following interface:



**Decoding Channel**

| Camera No. | Decoding Status | Encoding Type | Package Format | CPU Usage | Image Width | Image Height | Video Format | Video Frame Rate | Audio Frame Rate | Decoded Video Frame Rate | Decoded Audio Frame Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Decoded | HIK 264 | PS | 25 | 704 | 240 | NTSC | 30 | 0 | 2606270 | 0 |
| 2 | Not decoded | UNKNOWN | UNKNOWN | 0 | 0 | 0 | UNKNOWN | 0 | 0 | 0 | 0 |
| 3 | Not decoded | UNKNOWN | UNKNOWN | 0 | 0 | 0 | UNKNOWN | 0 | 0 | 0 | 0 |
| 4 | Not decoded | UNKNOWN | UNKNOWN | 0 | 0 | 0 | UNKNOWN | 0 | 0 | 0 | 0 |

Figure 4.16 Check Decoding Channel Status

# 4.1.9 Checking the Display Channel Status

*Purpose:*

The display channel status interface shows the video output status of the decoder, including the status for the VGA output, BNC output, HDMI output, and the sub-window information.

Click **Decode Operation** > **Decoding Status** > **Display Channel** to view the working status of the display channel.



**Display Channel**

| DVI Display | BNC Display | | |
|---|---|---|---|
| Display Camera No. | Display Status | Display Mode | Screen Mode |
| DVI1 | Displayed | 1 | Normal |
| DVI2 | Not Displayed | 0 | Normal |
| DVI3 | Not Displayed | 0 | Normal |
| DVI4 | Not Displayed | 0 | Normal |
| DVI5 | Not Displayed | 0 | Normal |
| DVI6 | Not Displayed | 0 | Normal |
| DVI7 | Not Displayed | 0 | Normal |
| DVI8 | Not Displayed | 0 | Normal |
| DVI9 | Not Displayed | 0 | Normal |
| DVI10 | Not Displayed | 0 | Normal |
| DVI11 | Not Displayed | 0 | Normal |
| DVI12 | Not Displayed | 0 | Normal |

Sub-window Information

| Sub-window No. | Related Decoding Channel | Video Frame Rate |
|---|---|---|
| 1 | 1 | 30 |

Figure 4.17 Check Display Channel Status

*Note:* The Display Channel Status of device will be refreshed regularly.

# 4.1.10 Configuring Transparent Channel

The Transparent Channel refers to the transmission channel used for forwarding data between the Decoder and the Encoder without operating on the data transferred.

***Steps:***
1.  Click **Decode Operation** > **Transparent Channel** to enter the Transparent Channel settings interface.
2.  Click to select a transparent channel from the list to configure.
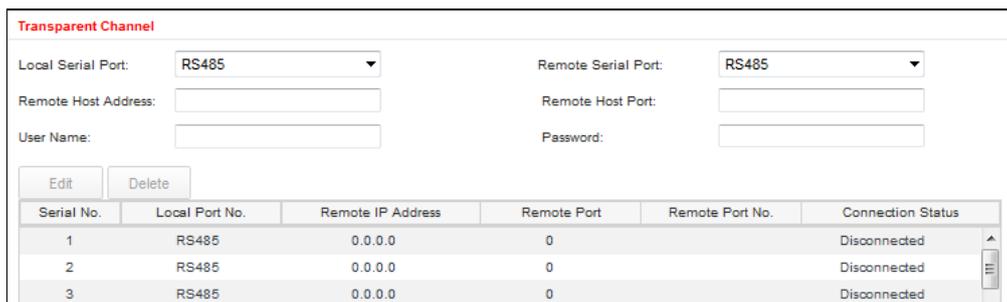


Figure 4.18 Configure Transparent Channel

3.  Select the **Local Serial Port** and the **Remote Serial Port** to RS-485 or RS-232.

    **Local Serial Port:** the serial port used as the transparent channel by the decoder.

    **Remote Serial Port:** the serial port used as the transparent channel by the encoding device.

*Note:* When the RS-232 port is used as the Local Serial Port, you must select the operating mode to Transparent Channel by entering the Configuration > Serial Port Settings > RS-232 Port interface.

4.  Enter the device information in the Remote Host IP Address, Remote Host Port, and the login User Name and Password of the encoding device.
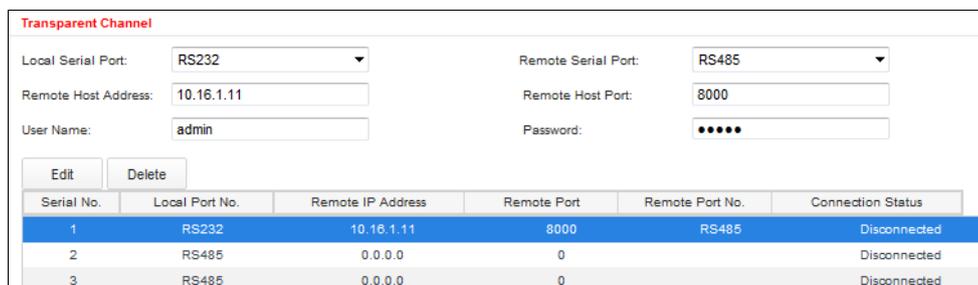


Figure 4.19 Check Connecting Status of Transparent Channel

*Note:* Up to 64 encoding devices are allowed to establish transparent channel transmission with a decoder.
5.  Click **Edit** to finish the settings.
6.  Click **Refresh** and the status in the Connection Status will be displayed if the connection is successful.

# 4.2 Decoder Configuration

## 4.2.1 Checking Device Information

*Purpose:*

You can check the information of the device in the device information interface, such as the Device Type, Device Serial No., Firmware Version, etc.

*Steps:*

Click **Configuration** > **Device Information** to view the device information, including the Device Type, Device Serial No., Firmware Version, DSP Version, etc.

*Note:* The device name can be edited.
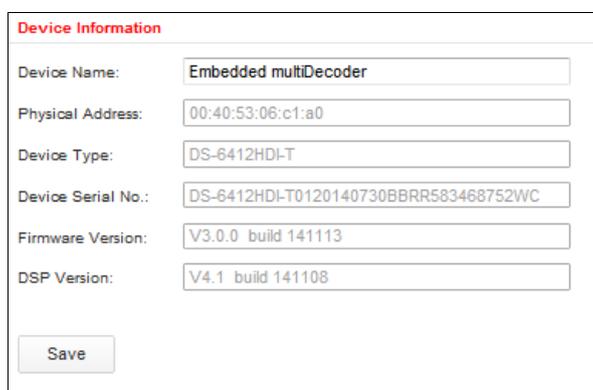


Figure 4.20 Check Device Information

## 4.2.2 Configuring Time Settings

You can set the time for the decoder in the **Time Settings** interface.

*Steps:*

1. Click **Configuration** > **Time Settings** to enter the following interface:
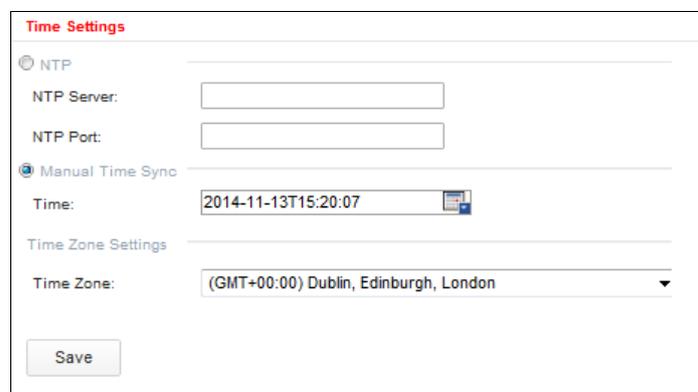


Figure 4.21 Configure Time Settings

2. Configure the time synchronization by NTP server or by manually.

● **Configuring Time Sync by NTP Server**

A Network Time Protocol (NTP) Server can be configured on your device to ensure the accuracy of system date/time.

If the device is connected to a Dynamic Host Configuration Protocol (DHCP) network that has time server properties configured, the camera will synchronize automatically with the time server.

Enable the **NTP** function by checking the checkbox, and configure the following settings:

**NTP Server:** IP address of NTP server.

**NTP Port:** Port of NTP server.
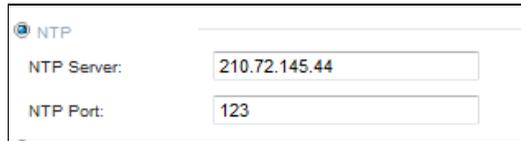


Figure 4.22 Configure Time by NTP

*Note*: If the device is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the device is set up in a more customized network, NTP software can be used to establish a NTP server used for time synchronization.

● **Configuring Time Synchronization by Manually**

Enable the **Manual Correction** function and then click the [icon] icon to set the system time from the pop-up calendar.
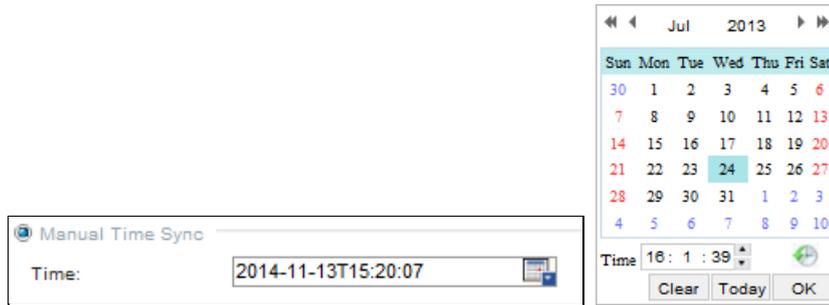


Figure 4.23 Configure Time by Manually

3. Select the time zone that is closest to the device's location from the drop-down list.
4. Click **Save** to save the settings.

# 4.2.3 Configuring Basic Network Settings

*Purpose:*

You can set the network parameters for the decoder in the parameter configure interface.

*Steps:*

1. Click **Configuration** > **Network Settings** > **General** to enter the general network settings interface.

Figure 4.24 Configure Basic Network Settings

2. Set the network parameters, including the IP Address, Subnet Mask, Gateway and DNS Server.
3. Click **Save** to save the settings.

# 4.2.4 Configuring DDNS Settings

*Purpose:*

If your device is set to use PPPoE as its default network connection, you may set Dynamic DNS (DDNS) to be used for network access.

Prior registration with your DDNS Provider is required before configuring the system to use DDNS.

*Steps:*

1. Click **Configuration** > **Network Settings** > **DDNS** to enter the DDNS Settings interface:
2. Check the **Enable DDNS** checkbox to enable this feature.
3. Select **DDNS Type**. Four different DDNS types are selectable: IPServer, DynDNS, PeanutHull and HiDDNS.

- **DynDNS:**
(1) Enter **Server Address** for DynDNS (e.g., members.dyndns.org).
(2) Enter the **User Name** and **Password** registered in the DynDNS website.
(3) In the **Device Domain Name** text field, enter the domain obtained from the DynDNS website.
(4) Click **Save** to save the settings.



Figure 4.25 DynDNS Settings

- **IPServer:**
(1) Enter Server Address for IPServer.
(2) Click **Save** to save the settings.

*Note:* For the IP Server, You have to apply a static IP, subnet mask, gateway and primary DNS from the ISP. The **Server Address** should be entered with the static IP address of the PC that runs IPServer software.



Figure 4.26 IPServer Settings

- **PeanutHull:**
  (1) Enter User Name and Password obtained from the PeanutHull website.
  (2) Click **Save** to save the settings.



Figure 4.27 PeanutHull Settings

- **HiDDNS:**
  (1) Enter the **Server Address** of the HiDDNS server: www.hik-online.com.
  (2) Enter the **Domain** Name of the device. You can register the alias of the device domain name in the HiDDNS server first and then enter the alias to the domain name in the decoder; you can also enter the domain name directly on the decoder to create a new one.
  *Note:* If a new alias of the device domain name is defined in the decoder, it will replace the old one registered on the server.
  (3) Click **Save** to save the settings.
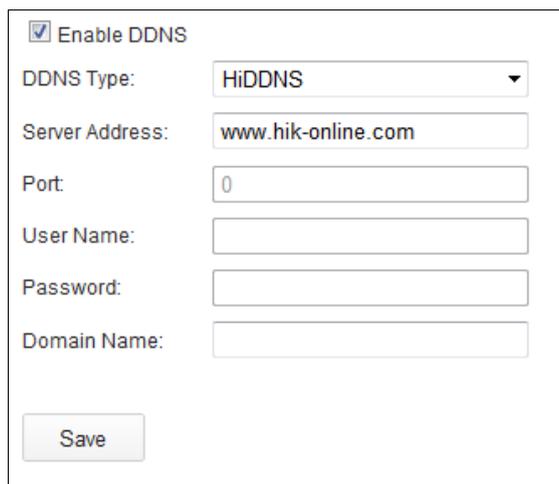
Figure 4.28 HiDDNS Settings

*Note:* After having successfully registered the device on the HiDDNS server, you can access your device via web browser or Client Software with the Device Domain Name (Device Name).

# 4.2.5 Configuring RS-485/RS-232 Serial Port

## Configuring RS-232 Parameters

*Steps:*

1. Click **Configuration** > **Serial Port Settings** > **RS-232 Port** to enter the following interface:
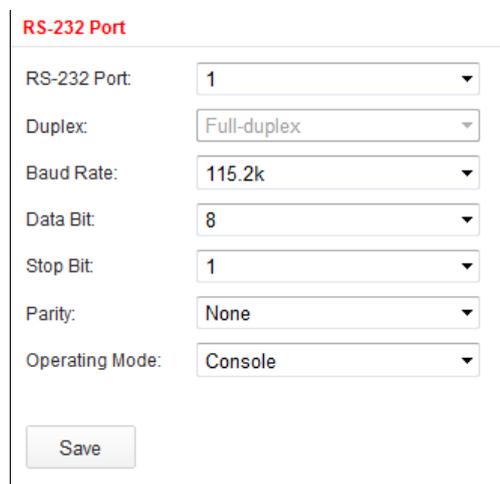


Figure 4.29 Configure RS-232 Settings

2. Configure the RS-232 parameters, including the baud rate, data bit, stop bit and parity type.
3. Select the Operating Mode of RS-232 to Console or Transparent Channel.

   **Console**: use the RS-232 serial port for debugging the decoder.

   **Transparent Channel**: use the RS-232 serial port as the transparent channel.
4. Click **Save** to save the settings.

## Configuring RS-485 Parameters

*Steps:*

1. Click **Configuration** > **Serial Port Settings** > **RS-485 Port** to enter the following interface:



Figure 4.30 Configure RS-485 Settings

2. Configure the RS-485 parameters, including the baud rate, data bit, stop bit and parity type.

3. Click **Save** to save the settings.

# 4.2.6 Configuring Alarm Input / Output Settings

*Purpose:*

As the Decoder is unable to obtain the alarm signal over network, it must be connected with external alarm input/output.

*Steps:*

**Alarm Input Settings**

1. Click **Configuration** > **Alarm Settings** > **Alarm Input** to enter the alarm setting interface.

2. Set the **Alarm Sensor Type** for the selected alarm input and configure the Alarm Input Handling actions. By default, the Alarm Mode is in NO (Normally Open).



Figure 4.31 Configure Alarm Input Settings

3. Click **Save** to save the settings.

**Alarm Output Settings**

1. Click **Configuration** > **Alarm Settings** > **Alarm Output** to enter the alarm setting interface.

2. Select the alarm output, you can also customize the output delay time. Output delay time refers to the duration of the alarm after the alarm output, for example, when you set the alarm output delay time as 10

seconds, when an alarm occurs the alarming time lasts 10 seconds later than the time of the alarm stopped.

3.  Click **Save** to save your settings.



Figure 4.32 Configure Alarm Output Settings

# 4.2.7 Configuring Arming Time

*Purpose:*

Set the time schedule for alarm input and alarm output.

*Steps:*

1.  Click **Configuration** > **Arming Time** to enter the following interface.



Figure 4.33 Configure Arming Time

2.  Choose the Start Time and the End Time.

3.  Click **Save** to save the schedule.

# 4.2.8 Managing User Account

The user accounts can be managed in this interface.

*Steps:*

1. Click **Configuration** > **User Management** to enter the account management interface.
2. You can add, modify or delete the user account, as well as configure operating permissions for each user account.
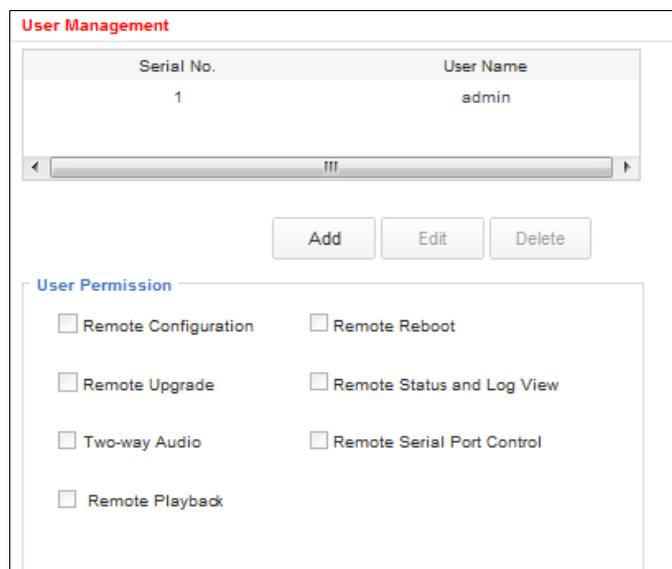


Figure 4.34 Configure User Account

*Note:* For the admin user, only the password can be modified.

The default password (12345) for the Admin account is for first-time log-in purposes only. You must change this default password to better protect against security risks, such as the unauthorized access by others to the product that may prevent the product from functioning properly and/or lead to other undesirable consequences.

For your privacy, we strongly recommend changing the password to something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product.

# 4.2.9 Importing/Exporting Parameters

The configuration files of the device can be imported from or exported to local device for backup, which maintains convenient and easy parameters configuration.

*Steps:*
1. Click **Configuration** > **Config File Import/Export** to enter the parameters import/export interface:

Figure 4.35 Import/Export Config File

2. Click **Browse** to select the file from the local directory and then click the **Import** button to import a configuration file.
   Or click the **Export** button to export configuration files to the local backup device.

# 4.3 Configuring Remote Playback

*Purpose:*

You can play back the record files stored in the remote encoding devices.

## 4.3.1 Normal Playback

*Steps:*

1. Click **Decode Operation** >**Remote Playback** to enter the remote playback interface:



Figure 4.36 Configure Remote Playback

2. Select a Decoding Channel from the drop-down list for playback.
3. You can playback the video files of the encoding device by IP Mode or DDNS mode.

   **Task 1: Playback Video Files of the Encoding Device by IP Mode**

   1) Check the checkbox of **IP Mode**.

   2) Enter the device information in the **Remote Host Address**, **Remote Host Port**, **Channel Type** (Normal), **Remote Host Channel No.**, and login **User Name** and **Password** of the encoding device.



Figure 4.37 Playback Video Files of the Encoding Device by IP Mode

**Task 2: Playback Video Files of the Encoding Device by DDNS Mode**

1) Check the checkbox of **DDNS Mode**.

2) Enter the **Domain Name** of the device. You can register the alias of the device domain name in the HiDDNS server first and then enter the alias to the domain name in the decoder; you can also enter the domain name directly on the decoder to create a new one.

   *Note:* If a new alias of the device domain name is defined in the decoder, it will replace the old one registered on the server.

3) Configure the following settings:

   **Domain Name Server Type**: select the domain name server type. Currently only the HiDDNS is available.

   **DDNS Server Address**: input the address of the DDNS server (www.hik-online.com).

   **DDNS Server Port**: Input the port number of the DDNS server (e.g., 80).

   **Remote Host Por**t: Enter the port No. of the encoding device for decoding (e.g., 8000).

   **Channel Type:** Select the channel type of the encoding device for decoding. By default, the channel type is Normal.

   **Remote Host Channel No**.: Input the channel No. of the encoding device for decoding. The value 0 represents channel 1, 1 represents channel 2, and so forth.

   **User Name/Password:** Enter the user name and password used for login to the encoding device.



Figure 4.38 Playback Video Files of the Encoding Device by DDNS Mode

4. Select the playback mode to Playback by File or Playback by Time.

   - Playback by file: enter the file name searched on the encoding device.
   - Playback by time: click [icon] to enter the start time and end time of the record file.



Figure 4.39 Playback by Time

5. Click **Save** to finish the settings.

6. You can click [icon] to start playback.

During the playback, use the ⏸ ⏹ ◀◀ ▶▶ 🔊⊘ buttons to start playing, stop playing, slow forward, fast forward, and turn on audio respectively.

Figure 4.40 Playback Control

*Notes:*

● The speed of slow forward can be set to 1/2X, 1/4X and 1/8X; and the speed of fast forward can be set to 2X, 4X and 8X.

● The speed of fast forward and slow forward is not supported in the VCA playback mode.

● During decoding the playback on the screen, if you change the resolution of the video output, the decoding stops.

# 4.3.2 VCA Playback

The decoder is able to play back the video files from the Smart DVR/NVR, and the event video file is played at normal speed while the video file with no event is played at 8X speed.

*Steps:*

1) Click **Device Management** >**Switch Mode** to enter the switch mode interface.

2) Select the working mode to VCA Mode.

3) Restart the device to activate the new settings.

4) Enter the Remote Playback interface. Follow the same the steps described in *Section 4.3.1 Normal Playback*.

*Note:* The VCA video files can be played by time only.

# 4.4 Switching Working Mode

*Steps:*

1.  Click **Device Management** to enter the device management interface.

2.  Click the ⬚ to enter the Switch Mode interface. Two working modes are selectable: **Channel Mode** and **VCA Mode**. When the VCA Mode is selected, the VCA decoding is enabled.



Figure 4.41 Switch Display Mode

3.  Click **OK** to save the settings.

    *Note:* The device will automatically restart after mode switch.
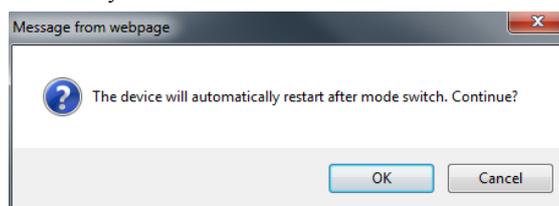


Figure 4.42 Pop-up Message Box

# 4.5 Rebooting, Upgrading and Restoring the Default Settings for the Decoder

*Steps:*
1. To reboot, upgrade or restore the default settings of the decoder, go to the **Device Management** interface.
2. Choose the configuration items in the left part of the page.

**To upgrade the decoder**:
1) Click the icon to enter the interface, see the following figure.
2) Click **Browse** to search the upgrading files.
3) Click **Upgrade** to upgrade it.



Figure 4.43 Device Management

*Notes:*
1. When logging in to the device for the first time, please install the plug-in according to the prompt on the screen.
2. The device will restart after the upgrade is complete.

**To restore the default settings of the decoder**:
1) Click icon to enter the Restore Default interface.
2) Click **Complete** to restore the completed factory settings of the decoder.
   *Or*
   Click **Simple** to restore just a part of the factory settings of the decoder.
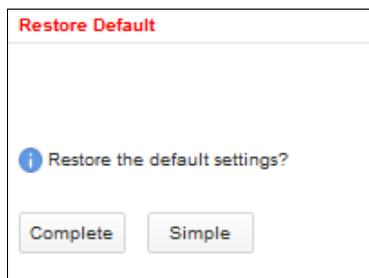


Figure 4.44 Restore Default Settings

**To reboot the decoder**:

1) Click [Reboot] icon to enter the rebooting interface.

2) Click **OK** if you are sure to reboot the device.
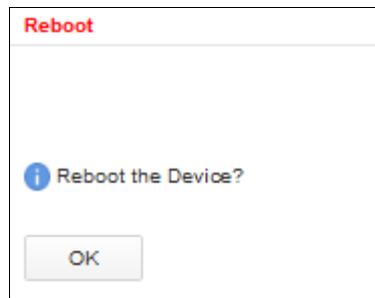


Figure 4.45 Reboot the Device

# CHAPTER 5

# Decoder Configuration and Operation by

# Client Software

Run the disk of iVMS-4200 software, and double click the icon to install it in your PC. In this chapter, the basic procedure of operating the decoder by the software is described.

Please refer to the user manual of iVMS-4200 for more detailed information.

The following figure shows the main interface after accessing to the software:
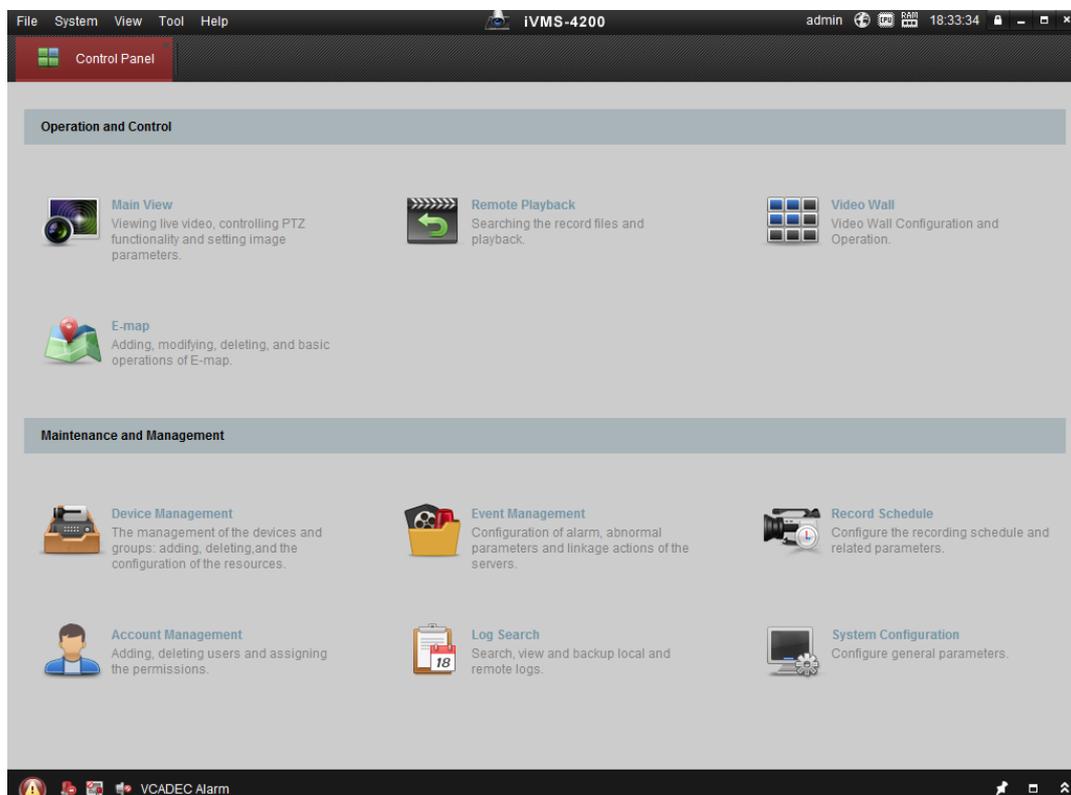


Figure 5.1  Control Panel

*Note:* The software is capable of many functions as the controlling and managing for many devices, such as the DVR, NVR, etc. In this manual, only the operation related to the decoder is introduced.

# 5.1 Adding an Encoding/Decoding Device

*Steps:*

1. Click ![icon] on the control panel, or click Tools->Device Management to enter the Device Management page.

2. Click the **Server** tab.

3. Click **Encoding Device** or **Decoding Device** to enter device adding interface.
   *Note:* You can click the Add New Device Type to add new device type.

4. You can add the device by detecting the online devices, or by manually (IP address/domain, IP segment, IP server or HiDDNS).
   *Note:* The decoding device can be added by IP address/domain and IP segment only.

Figure 5.2 Add Device by IP Address

*Note:* Please refer to the *User Manual of iVMS-4200* for detailed instructions of adding encoding/decoding device.

The successfully added decoder device can be viewed in the list.



Figure 5.3  List of Added Decoders

# 5.2 Setting Video Wall Layout

*Steps:*

1. In the control panel, click [icon] to enter the Video Wall setting interface.

2. Click the **Enter Video Wall Config** to enter the video wall layout configuration.
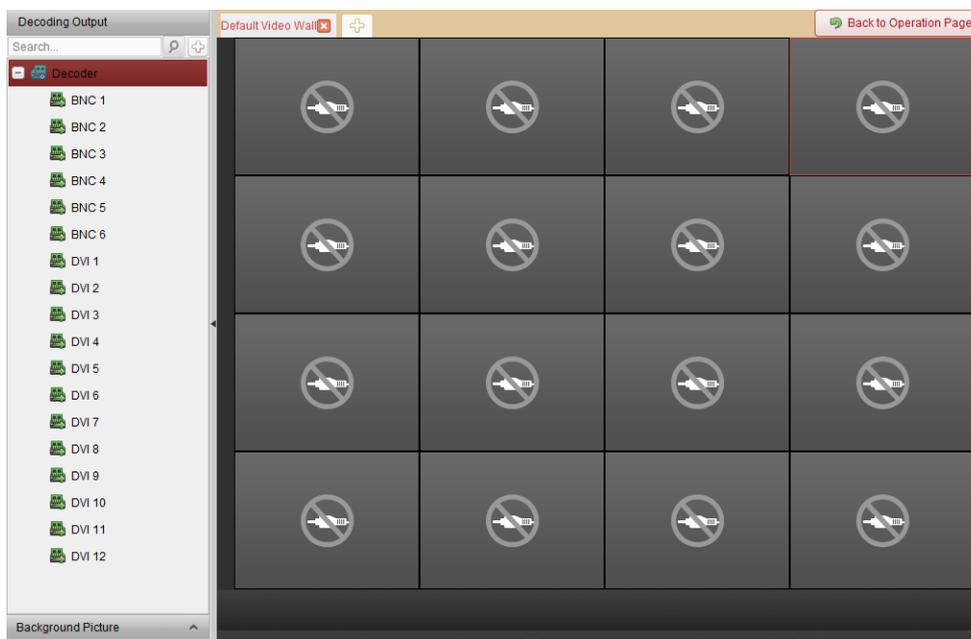


Figure 5.4 Video Wall Layout Settings

3. You can use the default video wall layout or click [icon] to add new layout.
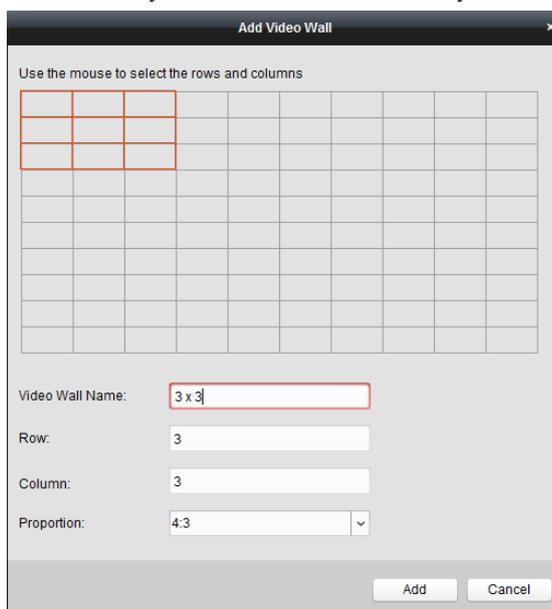


Figure 5.5 Add Screen Information

4. Edit the video wall name, and enter the number of screens in row and column.

5. Click **Add** to finish the adding of the video wall information.

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*Notes:*

● Up to 4 video walls can be added to the client software.

● The total number of the display windows of the video wall should be no more than 100.

● The ranges of the row number and column number are both between 1 and 10.

6. Click and drag the output channels on the list of the decoding devices to the display screens.
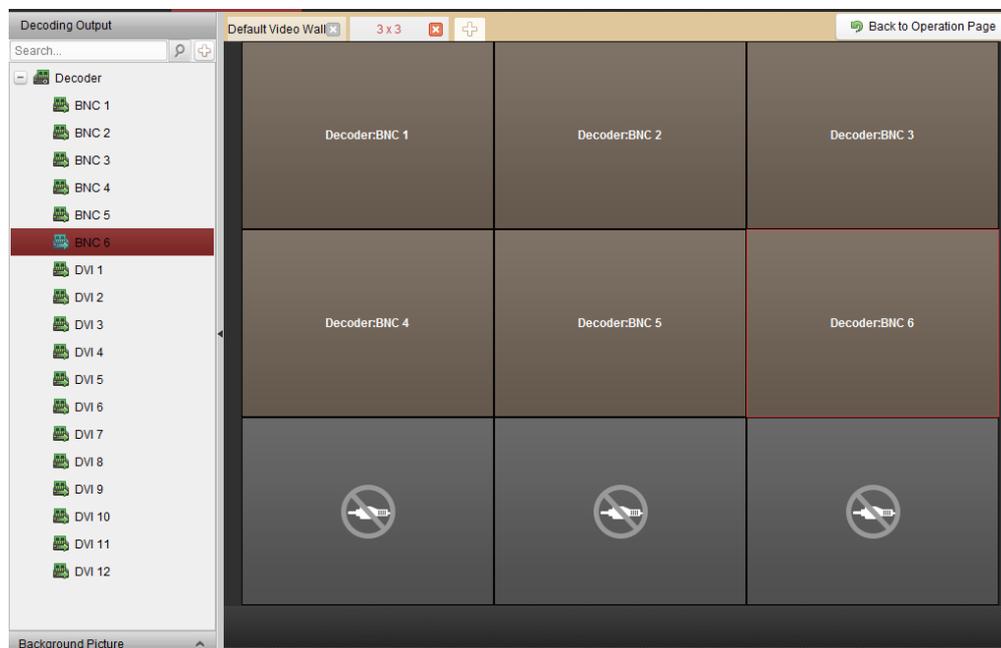


Figure 5.6 Video Wall Layout

*Note:* For the DS-6401HDI-T models, the VGA, BNC and HDMI video output interfaces are provided; and for DS-6404/6408/6410/6412/6416HDI-T, the VGA, DVI-I and BNC video output interfaces are provided.

# 5.3 Multi-screen Display

*Purpose:*

For DS-6400HDI-T series decoder, you can joint multiple screens as a whole window. In this way, the decoded video of one camera can be shown on the jointed window.

*Note:* The DS-6401HDI-T does not support the multi-screen display.

*Steps:*

1. Perform the step 6 of Section 5.3 to configure the linkage between the decoder and video wall.

2. Click-and-drag you mouse to select the adjacent display windows for jointing.

*Notes:*

1. You can only joint the same output interfaces as a whole window. E.g., you can only joint 4 VGA interfaces or HDMI interfaces.

2. BNC interface does not support jointing.
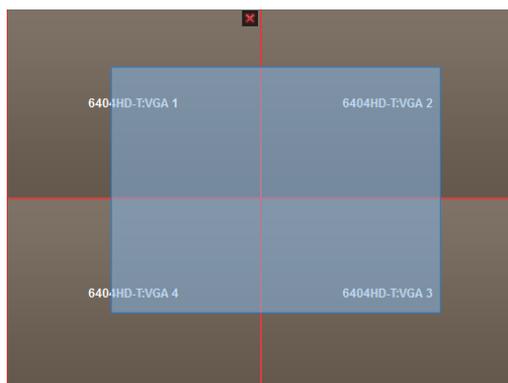
Figure 5.7 Multi-screen Display (1)

3. Click [icon] to confirm jointing the screens.
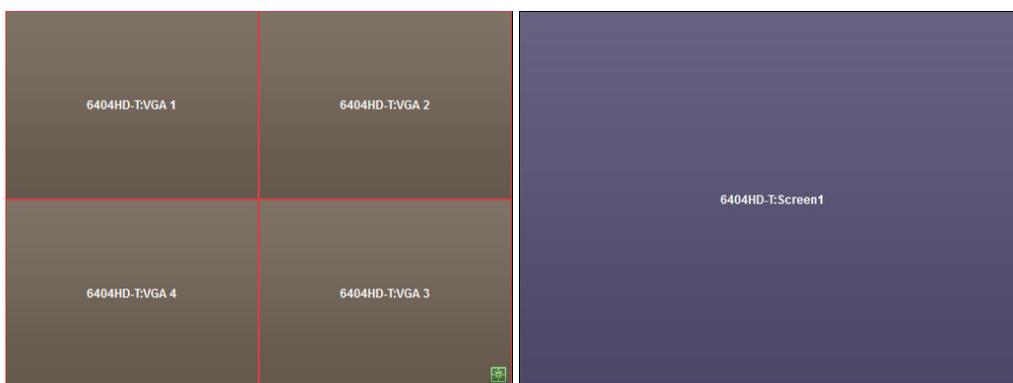


Figure 5.8  Multi-screen Display (2)

4. (Optional) You can set the resolution for the jointed window by right-clicking on it and select **Decoding Output Configuration**.

To cancel the multi-screen display, click [icon] in the upper-right corner of the display window.
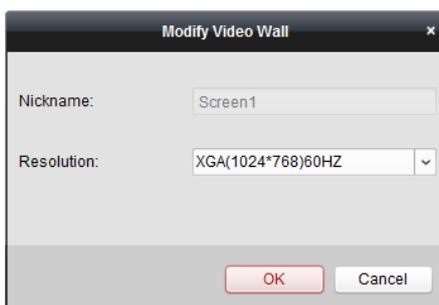


Figure 5.9 Modify Output Parameters

# 5.4 Displaying Video on Video Wall

*Purpose:*

After the settings of the encoding device, decoding device and video wall, the video stream from the encoding devices can be decoded and displayed on the Video Wall.

*Note:* After enable decoding and displaying, the captured picture of the video from the encoding device displays on the Video Wall interface. And the real-time live view is shown on the physical video wall.

# 5.4.1 Decoding and Displaying Video

*Steps:*

1. Click **Back to Operation Page** to go back to the Video Wall Operation interface.
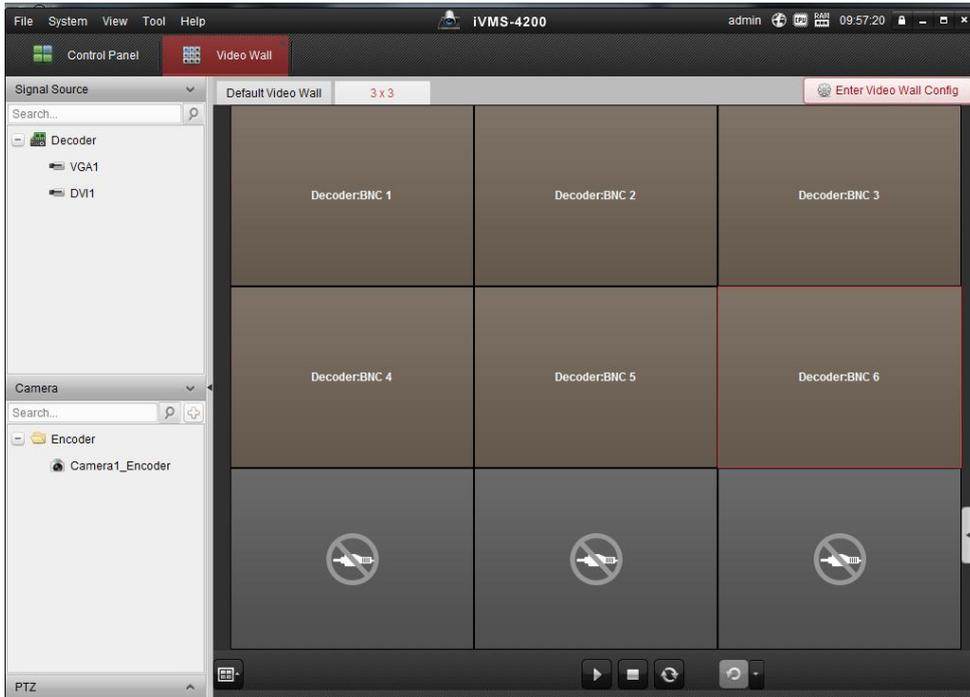


Figure 5.10 Video Wall Operation Page

2. Click-and-drag the camera on the left-side list to the display window of video wall. The video stream from the camera will be decoded and displayed on the Video Wall. You can also select a decoding window and then double-click a camera to decode and display the video. You can also click and hold the *Ctrl* or *Shift* key to select multiple cameras and then drag them to the video wall.

3. Select a playing window and click the icon ◄ to get a preview of the video in the lower-right corner of the screen. Or you can directly drag a camera to the preview window for live view. You can also double-click the preview window to get a full-screen view.

   *Note:* You can move the mouse to the window and click ▭ in the lower-right corner to stop decoding.

4. (Optional) Select a decoding window and click ⊞ to set the window division for it.

5. If the decoded camera supports PTZ control, you can click ⌃ beside **PTZ** to activate the PTZ control panel. Right-click on a playing window to activate the decoding management menu, as shown below:

   *Note:* The menu differs depending on the devices.
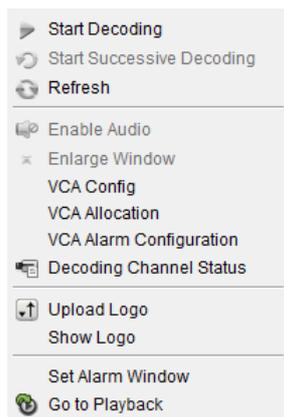
Figure 5.11 Right-click Menu

**Stop / Start Decoding:** Stop / Start the decoding.

**Start / Pause Successive Decoding:** Start / Pause the cycle decoding. This function is only supported by decoder.

**Refresh:** Refresh the decoding.

**Open / Close Digital Zoom:** Enable / Disable digital zoom.

**Enable Audio:** Turn on / off the audio of the decoding video.

**Enlarge Window:** Display the window in full-screen mode.

**Decoding Channel Status:** View the status of the decoding channel, such as decoding status, stream type.

**Upload Logo:** Upload a picture as the logo to the video window and set the display parameters for it. After setting, the logo shows in the defined position of the window on physical video wall.

**Show / Hide Logo:** Show / Hide the logo.

**Set Alarm Window:** Display the video triggered by event or alarm input on Video Wall.

**Go to Playback:** Enter the playback mode. This function is only supported by decoder.
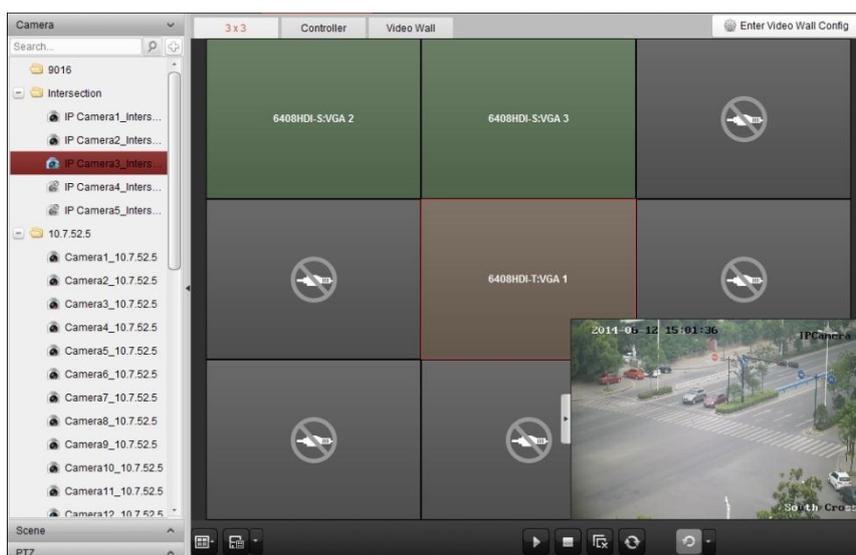


Figure 5.12 Video Wall Display

| Icon | Description |
| --- | --- |
| ▶ | Start all the decoding |

| | Stop all the decoding |
| | Stop all the roaming windows |
| | Refresh all the decoding windows |
| | Set cycle decoding and switching interval |

## 5.4.3 Configuring Playback

*Purpose:*

The record file is supported to be played back on the video wall.

*Note:* playback function is only supported by decoder.

*Steps:*

1. Click-and-drag the camera on the left-side list to the display window of video wall, or you can open a window if supported.

2. Move the mouse to the window and click  in the upper-right corner. Or you can right-click on the window and select **Go to Playback** in the right-click menu.

3. If there is record file of current day, the record file will be played back automatically. If not, you can set the search condition on the search panel which shows in the left area of the interface, and click **Search** to find the record file. For detailed configuration about searching record files, please refer to *Section 3.2.1 Normal Playback*.

4. Right-click on the playback window and you can control the playback through the right-click menu, such as pause, stop, fast forward, slow forward, capture, start recording and full-screen playback.

   *Note:* The saving path for the captured pictures and recorded files can be configured on System Configuration page.

When you move the mouse to the screen, the icons will display as shown below.



Figure 5.13 Playback the Video File

| Icon | Description |
| --- | --- |
| | Pause the playback |
| | Stop the playback |
| | Capture the playback video |
| | Record the playback video |
| | Back to live view mode |
| | Playback speed. |

## 5.5 Configuring VCA

*Purpose:*

The VCA (Video Content Analysis) devices can be added to the client for management, including VCA resource allocation, shield region settings, rule settings, VCA alarm settings, etc.

# 5.5.1 Allocating VCA Resource

***Before you start:***

Before you set the VCA configuration for the added device, you need to configure the VCA resource of the device to enable the VCA function of the corresponding cameras.

***Steps:***

1.  In the Video Wall interface, right click on a playing window and select **VCA Allocation** to enter the VCA Resource Allocation interface, or you can select the VCA device and click **VCA Allocation** to activate the VCA Resource Allocation window in the Device Management Configuration interface.
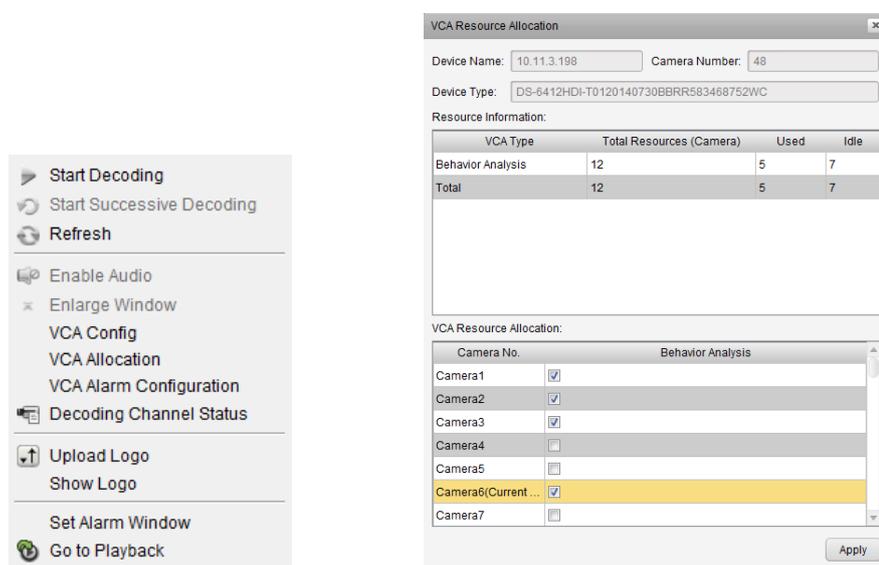


Figure 5.14 VCA Allocation

***Example:*** In the figure shown above, the VCA type of the device is Behavior Analysis and 12 cameras are available for configuring VCA settings. And among the 12 cameras, the VCA functions of 5 cameras have been enabled and the others are disabled.

2.  In the VCA Resource Allocation panel, check ☑ checkbox to enable the VCA function of the camera. Or you can uncheck ☐ checkbox to disable the VCA function.

# 5.5.2 Shield Region Configuration

***Purpose:***

You can set the shield region in which all the VCA rules are invalid.

***Steps:***

1.  In the Video Wall interface, right click on a playing window and select **VCA Configuration** to enter the VCA Config interface.
2.  Click the **Shield Region** tab in the VCA Config interface to enter the shield region interface. Up to 4 shield regions can be set.

3. Click the ☐ icon, then click and drag the mouse to draw the region, and right-click to finish drawing.

4. (Optional) Click to select an added shield region, and click ✖ to delete it.

5. Click **Save** to save the settings.
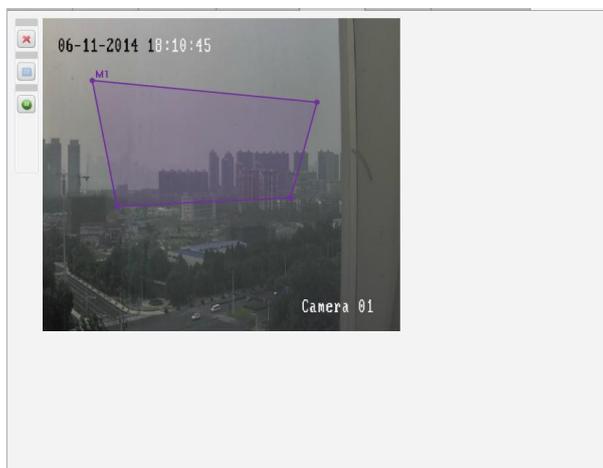


Figure 5.15 Set Shield Region

# 5.5.3 VCA Rule Configuration

*Steps:*

1. In the VCA Config interface, click the **Rule** tab to set the VCA rules.

2. Check the corresponding checkbox to enable the rule.

   *Notes:*

   1) The related operation only takes effect after the rule is enabled.

   2) Up to 8 pieces of rules can be added.

3. To set the rule name, double-click the corresponding rule name area, and input the rule name on your demand.

4. Click the event type and select the type in the drop-down list.

   The selectable event type depends on the configured VCA type.

**Rule and Attribute**

Click the Rule and Attribute tab.

*Note:* The rule should be enabled if you want to modify the rule.

| Icon | Description |
|---|---|
| ✖ | Delete the selected rule. |
| ☐ | Draw the rectangle arming area. |
| ☐ | Draw the polygon arming area. |
| ⛶ | Set the full-screen arming area. <br> *Note:* The event type is intrusion. |
| ↗ | Draw the virtual line. <br> *Note:* The event type is line crossing. |
| ☐ | Draw the maximum size filter. <br> *Note:* The rule and the size filter should be enabled. |

| | |
|---|---|
| | Draw the minimum size filter.<br>*Note:* The rule and the size filter should be enabled. |
| | Start/Pause the live view of the camera. |

**Set the rule**

**Task1: Draw the virtual line (only for Line Crossing)**
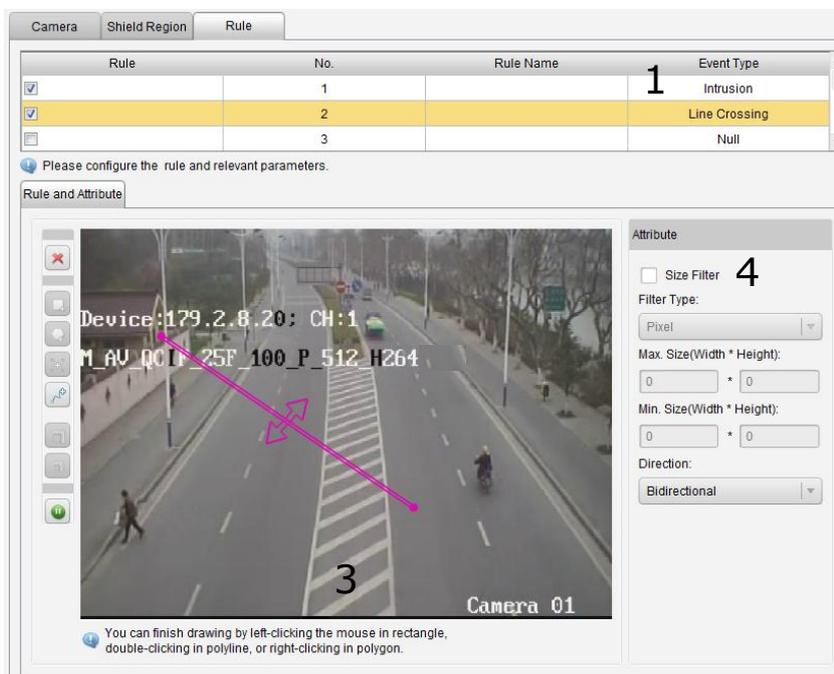


Figure 5.16 Draw the Virtual Line

*Steps:*

1. Please make sure the rule is enabled and the Rule Type is set as the "Line Crossing" in the area 1 in the above figure.

2. Click the [icon] icon in the area 2 and click to set the beginning point in the area 3 and move the mouse to the end of the line and click again to set another line. Right-click to finish setting the virtual line.

   *Note:* You can click the [icon] icon to draw again.

**Task2: Draw the arming region**
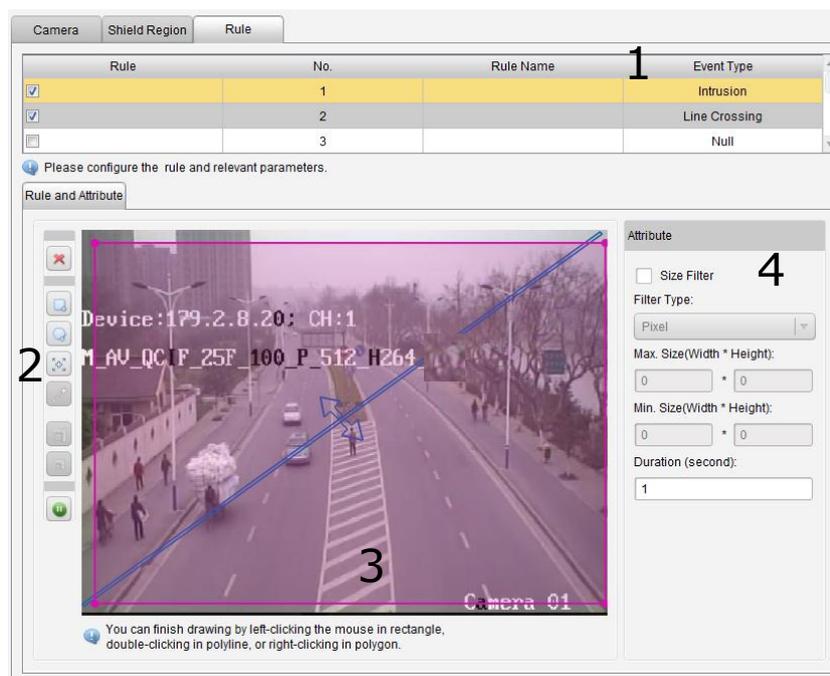
Figure 5.17 Draw the Arming Region

***Steps:***

1. Please make sure the rule is enabled in the area 1 in the above figure.

2. To draw a rectangle, click the ⬛ icon in the area 2 and click to set the top left corner (bottom right corner) of the region in the area 3 and move the mouse to the bottom right corner (top left corner) and click again.

   To draw a polygon, click the ⬤ icon and click to select the first corner of the region in the area 3 and move mouse to one after another corner and click, right-click to finish drawing.

   *Note:* The decagonal region can be supported, and once the tenth point is located, the system will connect it to the first one with a line automatically.

**Attribute**

Line Crossing: The detection direction can be modified as "Bidirectional", "From A to B", and "From B to A", and the detection sensitivity can set.

Intrusion: The detection sensitivity and duration can be modified according to the actual demand.

# 5.5.4 VCA Alarm Configuration

***Steps:***

1. In the VCA Config interface, click the **VCA Alarm Config** tab to set the VCA alarm.
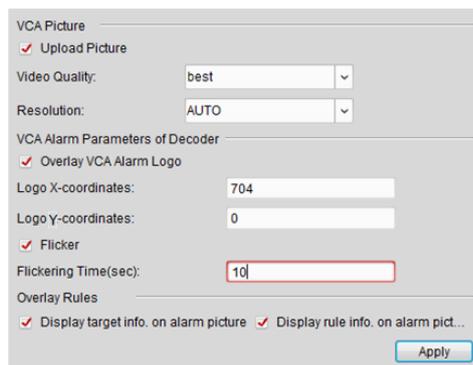
Figure 5.18 Set the VCA Alarm

2. **Upload Picture**: enable Upload Picture by checking the checkbox, and you can set the quality and resolution of the VCA picture uploaded to the client software.

**Overlay VCA Alarm Logo**: enable Overlay VCA Alarm Logo by checking the checkbox, and set the value of the X-coordinates and Y-coordinates for displaying the VCA alarm logo.

**Flicker:** enable the VCA logo in flickering mode as demand, and set the flickering time.

**Overlay Rules**: set the overlay rule if you want to display the target information or rule information on the alarm picture.

# 5.5.6 Viewing VCA Alarm Pictures

When you enable the **Upload Picture** in the VCA alarm configuration interface, the alarm picture of the alarm armed decoder can be uploaded to the client and viewed in the log information.

***Steps:***

1. In the Control Panel, click  to enter the log search and view interface.
2. Set the start time and end time to search the matched log files.
3. In the Client Log Lists area, select the log type and the Description Information to VCADEC Alarm.
4. Set the start time and end time and click **Search** to search the matched VCA alarm log files and picture files.
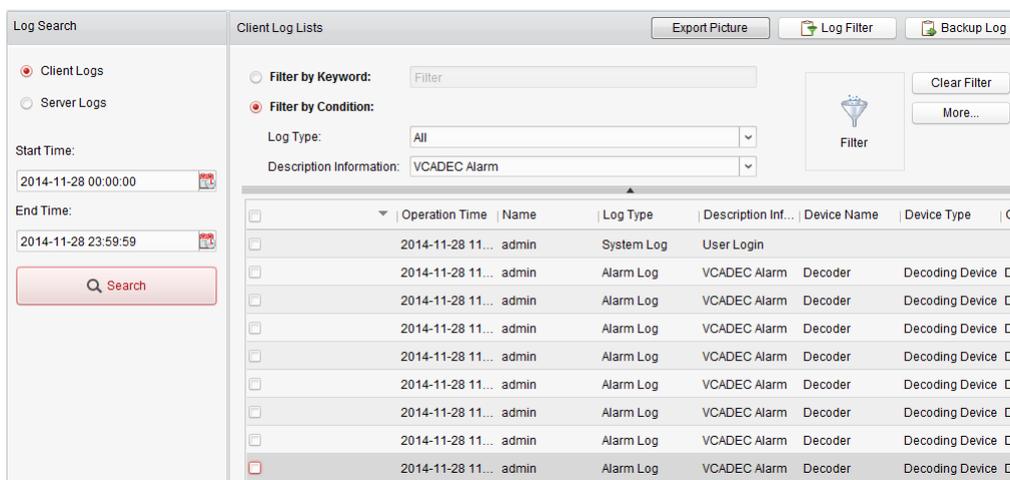


Figure 5.19 View the Alarm Picture

# CHAPTER 6

# Appendix

# Appendix A. Specifications

| Model | DS-6401HDI-T |
|---|---|
| **Audio/ Video Output** | **VGA Output** — 1-ch |
| | **VGA Output** — 1920×1080@60Hz, 1600×1200@60Hz, 1280×1024@60Hz, 1280×720@50/60Hz, 1024×768@60Hz |
| | **HDMI Output** — 1-ch |
| | **HDMI Output** — 1920×1080@60/50HZ, 1600×1200@60Hz, 1280×1024@60Hz, 1280×720@50/60Hz, 1024×768@60Hz |
| | **CVBS Output (without audio)** — 1-ch |
| | **Audio Output** — 1-ch, RCA connector |
| **Audio/ Video Decoding** | **Video Stream Format Supported** — H.264 /MPEG4/MPEG2/Private |
| | **Audio Stream Format Supported** — G.722/G.711A/G.711U/MPEG2-L2/AAC |
| | **Decoding Capability** — 8MP: 1-ch; 5MP: 2-ch; 1080P: 4-ch; 720P: 8-ch; 4CIF: 16-ch |
| | **Multi-division Display** — 1/4/6/8/9/12/16 |
| **VCA Decoding** | **Decoding Capability** — 5MP: 1-ch; 1080P: 2-ch; 720P: 4-ch; 4CIF: 8-ch |
| | **VCA Channel** — 2-ch |
| **External Interface** | **Network Interface** — 1; 10/100/1000 Mbps self-adaptive Ethernet interface |
| | **Serial Interface** — 1 RS-232 (DB9), 1 RS-485 |
| | **Two-way Audio In** — 1-ch, 3.5 mm connector (2.0 Vp-p, 1 kΩ) |
| | **Two-way Audio Out** — 1-ch, 3.5 mm connector (2.0 Vp-p, 1 kΩ) |
| | **Alarm In** — 4 |
| | **Alarm Out** — 4 |
| **General** | **Power Supply** — 12 VDC |
| | **Power Consumption** — Max. 15W |
| | **Working Temperature** — -10°C ~ 55°C |
| | **Working Humidity** — 10% ~ 90% |
| | **Dimensions (W×D×H)** — 220×180×45 mm |
| | **Weight** — ≤1.2 kg |

| Model | DS-6404HDI-T | DS-6408HDI-T |
|---|---|---|
| **Audio/ Video Input/Output** | **DVI Output** | 4-ch | 8-ch |
| | | 1920×1080@60/50Hz, 1600×1200@60Hz, 1280×1024@60Hz, 1280×720@50/60Hz, 1024×768@60Hz | |
| | **CVBS Output (without audio)** | 1-ch | |
| | | DB15 connector (used with the DB15-to-BNC adapter) | |
| | **Video Input** | 1-ch, VGA connector; 1-ch, DVI-I connector | |
| | | 1920×1080@60/50Hz, 1600×1200@60Hz, 1280×1024@60Hz, 1280×720@50/60Hz, 1024×768@60Hz, 1280*800@60Hz, 1680*1050@60Hz | |
| | **Audio Output** | 8-ch, DB15 connector | |
| **Audio/ Video Decoding** | **Video Stream Format Supported** | H.264 /MPEG4/MPEG2/Private | |
| | **Audio Stream Format Supported** | G.722/G.711A/G.711U/MPEG2-L2/AAC | |
| | **Decoding Capability** | 8MP: 2-ch 5MP: 4-ch; 1080P: 8-ch; 720P: 16-ch; 4CIF: 32-ch | 8MP: 4-ch 5MP: 8-ch; 1080P: 16-ch; 720P: 32-ch; 4CIF: 64-ch |
| | **Multi-division Display** | 1/4/6/8/9/12/16 | 1/4/6/8/9/12/16 |
| | **Screen Jointing Mode** | 1×2, 1×3, 1×4, 2×1, 2×2 | 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 3×2, 2×4, 4×2 |
| **VCA Decoding** | **Decoding Capability** | 5MP: 2-ch; 1080P: 4-ch; 720P: 8-ch; 4CIF: 16-ch | 5MP:4-ch; 1080P: 8-ch; 720P: 16-ch; 4CIF:32-ch |
| | **VCA Channel** | 10-ch | 12-ch |
| **External Interface** | **Network Interface** | 1; 10/100/1000 Mbps self-adaptive Ethernet interface | |
| | **Serial Interface** | 1 RS-232 (DB9), 1 RS-485 | |
| | **USB Interface (reserved)** | 2, USB 2.0 | |
| | **Two-way Audio In** | 1-ch, 3.5 mm connector (2.0 Vp-p, 1 kΩ) | |
| | **Two-way Audio Out** | 1-ch, 3.5 mm connector (2.0 Vp-p, 1 kΩ) | |
| | **Alarm In** | 4 | |
| | **Alarm Out** | 4 | |
| **General** | **Power Supply** | 100~240VAC | |
| | **Power Consumption** | Max. 108W | |
| | **Working Temperature** | -10°C ~ 55°C | |
| | **Working Humidity** | 10% ~ 90% | |
| | **Dimensions (W×D×H)** | 440×340×70 mm | 440×340×70 mm |
| | **Weight** | ≤5.2 kg | ≤5.2 kg |

| Model | DS-6410HDI-T | DS-6412HDI-T | DS-6416HDI-T |
|---|---|---|---|
| **Audio/ Video Input/ Output** – DVI Output | 10-ch | 12-ch | 16-ch |
| DVI Output | 1920×1080@60/50Hz, 1600×1200@60Hz, 1280×1024@60Hz, 1280×720@50/60Hz, 1024×768@60Hz | | |
| CVBS Output (without audio) | 5-ch | 6-ch | 8-ch |
| CVBS Output (without audio) | DB15 connector (used with the DB15-to-BNC adapter) | | |
| Video Input | 1-ch, VGA connector; 1-ch, DVI-I connector | | |
| Video Input | 1920×1080@60/50Hz, 1600×1200@60Hz, 1280×1024@60Hz, 1280×720@50/60Hz, 1024×768@60Hz, 1280*800@60Hz, 1680*1050@60Hz | | |
| Audio Output | 16-ch, DB15 connector | | |
| **Audio/ Video Decoding** – Video Stream Format Supported | H.264 /MPEG4/MPEG2/Private | | |
| Audio Stream Format Supported | G.722/G.711A/G.711U/MPEG2-L2/AAC | | |
| Decoding Capability | 8MP: 5-ch 5MP: 10-ch; 1080P: 20-ch; 720P: 40-ch; 4CIF: 80-ch | 8MP: 6-ch 5MP: 12-ch; 1080P: 24-ch; 720P: 48-ch; 4CIF: 90-ch | 8MP: 8-ch 5MP: 16-ch; 1080P: 32-ch; 720P: 64-ch; 4CIF: 100-ch |
| Multi-division Display | 1/4/6/8/9/12/16 | 1/4/6/8/9/12/16 | 1/4/6/8/9/12/16 |
| Screen Jointing Mode | 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 2×4, 2×5, 3×2, 3×3, 4×2, 5×2 | 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 2×4, 2×5, 3×2, 3×3, 4×2, 5×2, 3×4, 4×3 | 1×2, 1×3, 1×4, 2×1, 2×2, 2×3, 2×4, 2×5, 3×2, 3×3, 4×2, 5×2, 3×4, 4×3, 5×3, 3×5, 4×4 |
| **VCA Decoding** – Decoding Capability | 5MP: 5-ch; 1080P: 10-ch; 720P: 20-ch; 4CIF: 40-ch | 5MP: 6-ch; 1080P: 12-ch; 720P: 24-ch; 4CIF: 48-ch | 5MP: 8-ch; 1080P: 16-ch; 720P: 32-ch; 4CIF: 64-ch |
| VCA Channel | 10-ch | 12-ch | 16-ch |
| **External Interface** – Network Interface | 1; 10/100/1000 Mbps self-adaptive Ethernet interface | | |
| Serial Interface | 1 RS-232 (DB9), 1 RS-485 | | |
| USB Interface (reserved) | 2, USB 2.0 | | |
| Two-way Audio In | 1-ch, 3.5 mm connector (2.0 Vp-p, 1 kΩ) | | |
| Two-way Audio Out | 1-ch, 3.5 mm connector (2.0 Vp-p, 1 kΩ) | | |
| Alarm In | 4 | | |
| Alarm Out | 4 | | |
| **General** – Power Supply | 100~240VAC | | |
| Power Consumption | Max. 108W | | |
| Working Temperature | -10°C ~ 55°C | | |
| Working Humidity | 10% ~ 90% | | |
| Dimensions (W×D×H) | 440×340×88 mm | | |
| Weight | ≤6.4 kg | | |

# Appendix B. FAQ

- **Why cannot *ping* the decoder?**
    1. Check the cable and the switch.
    2. Please refer to *Chapter 3* to configure the IP address of the decoder.

- **Why cannot connect the decoder with client software?**
    1. Check the decoder IP address.
    2. Cable is connected.
    3. User name and password of decoder are correct.

- **Why cannot play back the record files in DVR with decoder?**
    1. Check the DVR network connection.
    2. Check the parameters of the playback file.
    3. Check if there are files existed in the selected time duration.

- **Why cannot decode the stream transported by stream media server?**
    1. Check the network connection between decoder and stream media server.
    2. Check if the stream media server port is connected with the port added on decoder.

# Appendix C. List of Third-party IP Cameras Access

| IP Camera Manufacturer | Model | Supported Video Format |
|---|---|---|
| Panasonic | SP306H | H.264, MPEG4 |
| | SP336H | |
| Sony | SNC-CH220 | |
| | SNC-RH124 | |
| Axis | P5532 | |
| | Q7404 | |
| Sanyo | VCC-HD2500P | |
| Bosch | NBC265P | |
| Zavio | D5110 | |
| Arecont | AC1305M | |
| Pelco | IX30DN-ACFZHB3 | |
| Onvif | Supported | |