DS-6401HDI Series Decoder Server

USER MANUAL

Version 2.0.0

Hikvision Network Digital Video Recorder User's Manual

Preventive and Cautionary Tips

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

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Keep all liquids away from the DVS.
- Please check the power supply to avoid the damage caused by voltage mismatch.
- Please make sure the DVS work in the allowed range of temperature and humidity.
- Please keep the device horizontal and avoid the installation under severe vibration environment.
- The dust board will cause a short circuit after damping; Please dedust regularly for the board, connector, chassis fan etc with brush.
- 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.

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CHAPTER 1
Introduction

1.1 Description

Developed on the basis of TI DaVinci platform, DS-6401HDI is a kind of multi-purpose video/audio decoder which is capable of allowing the coded images from DVR/DVS or other encoding devices to be decoded and displayed on the TV wall after transmission via IP network. Specially designed for the allocation and management of the video surveillance system, DS-6401HDI supports multiple network transmission protocols, and it applies the code downloaded in FLASH, ensuring high stability and reliability of system performance.

DS-6401HDI Video/Audio Decoder adopts higher integrated TI DaVinci processing chip which provides powerful decoding capability. It supports multiple bit rate transmission methods, and is capable of decoding /outputting the high-definition 1080P video stream and outputting decoded images via BNC or VGA, HDMI andDVI ports simultaneously. In addition, the Decoder also has the capabilities such as voice talk, alarm input/output, PTZ control, etc., providing powerful support for the large-scale TV wall decoding service.

1.2 Features

Decoding

- **Decoding images and audio**

Private H.264, standard H.264 and MPEG4 video compression methods;

Support PS, RTP and private customized encapsulation formats;

PAL and NTSC image formats;

Decoding at up to 1080P resolution;

G.722, G.711A and G.711U video compression methods.

- **Decoding Resources**

DS-6401HDI is capable of decoding 1-ch video stream at 1080P resolution, 2-ch video at 720P resolution and 4-ch video at 4CIF resolution.

- **Decoding Mode**

Multiple transmission methods: support TCP, UDP, MCAST and RTP transmission protocols.

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: receive real-time data by remote access to stream media server, and then decode stream for local output. 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 encoder with storage capability, and directly obtain the record files from the encoder, and finally decode for local output.

Passive decoding: the decoder passively receives stream sources, and then proceeds decoding and transmission. Passive decoding supports TCP and UDP transmission modes.

Third-party IP Camera Access

Multiple brands of IP cameras from different manufactures are supported: Sony, Panasonic, Sanyo, Axis, Bosch, etc. Please refer to Appendix B.

Network

- One 10/100/1000Mbps self-adaptive UTP Ethernet interface.
- Get allocated IP address, sub mask and gateway via DHCP server.
- Accomplish auto time adjustment for decoder over NTP protocol.
- Support DDNS capability.
- Capable of searching decoder in real time through SADP software, as well as modifying the IP address, sub mask, gateway of decoder and some other parameters.
- Capable of accessing decoder by TELNET command to view device information, modify network parameters, etc.

Alarm

- **Relay Alarm Input**

The decoder provides alarm input/output ports in relay signal input mode which can be set to NO or NC. Eight different arming periods can be set, in which the alarm occurs, the device is capable of triggering corresponding alarm handling method, relay output and buzzer alarm, as well as upload to center, etc.

- **Relay Alarm Output**

The relay alarm output can be connected to alarm devices for alarm response actions, e.g., combined aural and visual alarm unit, etc., which is capable of proceeding alarm handling within the arming period.

Exception Handling

- **Exception Alarm Handling**

Exception alarms include network disconnect alarm, IP address conflict alarm, illegal access alarm, etc.; multiple alarm handling methods are supported: relay alarm output, buzzer alarm, upload to center, etc.

- **Exception Reboot**

Software watchdog capability: for inspecting important threads and system resources of device; in case of exceptions cannot be recovered, the device will be automatically rebooted.

Firmware watchdog: for inspecting the firmware of device; in case of exceptions in system task scheduling, the device will be automatically rebooted.

User Administration

A maximum of 32 users can be created by the system, including 1 administrator and 31 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 normal users.

SDK Interface

- **Transparent Channel**

The decoder adopts the RS-232/RS-485 serial interface to realize transparent transmission. The data sent remotely to the decoder via network can be transmitted by RS-232/RS-485 interface of decoder without any handling, and the transparent channel of the decoder supports multi-cast transparent transmission as well, and multiple transparent channels can be established simultaneously.

- **PTZ Control**

Through SDK transparent channel, the PTZ of DVR or DVS can be remotely controlled.

- **Voice Talk**

The decoder is capable of realizing voice talk with the remote client. When the client has submitted application, the voice talk between the client and decoder is created.

CHAPTER 2
Panel and Connections

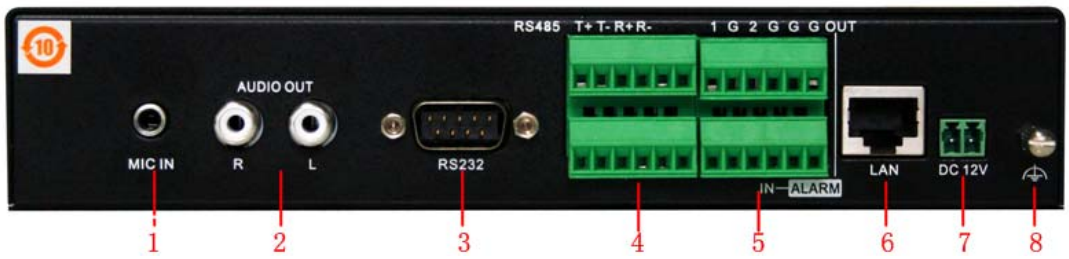
2.1 Front Panel

DS-6401HDI Front Panel

LED Indicator & Interface	Connections
PWR	Power LED indicator
LINK	Network connection LED indicator
RX/TX	Data transmitting/receiving status LED indicator
RESET	Reset to the factory default settings
VGA	VGA decoding output
DVI	DVI decoding output
HDMI	HDMI decoding output
VIDEO OUT	BNC decoding output

2.2 Rear Panel

DS-6401HDI Rear Panel



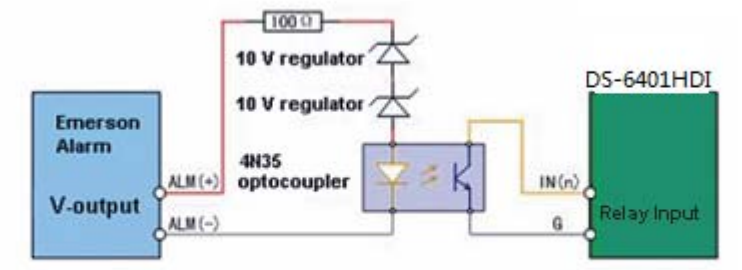
	Interface	Connections
1	MIC IN	Voice talk input
2	AUDIO OUT (R, L)	Audio out, for connection to audio output device, e.g. sound box. R: right channel; L: left channel
3	RS232	Connect to RS-232 devices, e.g., PC, etc.
4	RS485	RS-485 serial interface
5	ALARM OUT	2 alarm outputs
	ALARM IN	4 alarm inputs
6	LAN	10/100/1000Mbps self-adaptive UTP Ethernet interface
7	DC12V	12VDC power input
8	GND	Grounding

2.3 Alarm Connections

2.3.1 Alarm Input Connections

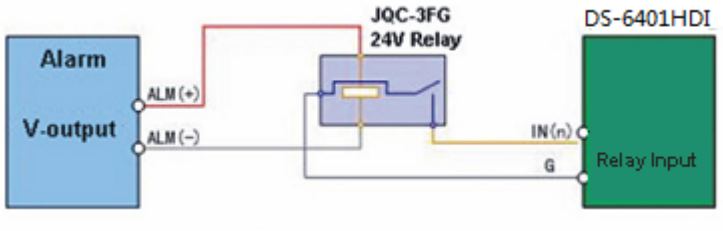
DS-6401HDI supports the open/close relay input as the alarm input mode. For the alarm input signal not in open/close relay signal mode, please follow the connections shown as below:

Alarm input connections for Emerson Alarm:



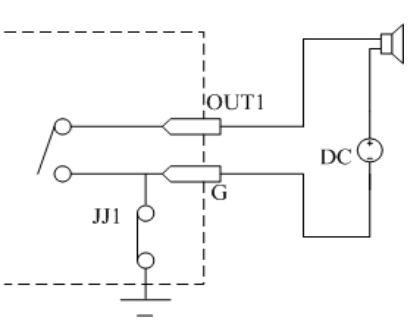
Note: the corresponding relay input port of DS-6401HDI should be set to NC mode.

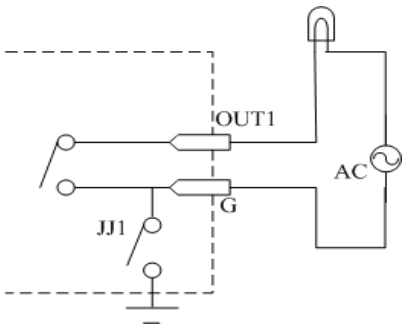
Alarm input connections for Normal Alarm:



2.3.2 Alarm Output Connections

DS-6401HDI supports the open/close relay input as the alarm output mode. The alarm input can be selected to *NO* or *NC*. Different alarm output connection methods are applied to the AC or DC load, please refer to the following diagram:





Please note the different connections of JJ1 shown above.

For DC load, JJ1ca be safely used both in *NC* and *NO* methods, and it is recommended to use within the limit of 12V/1A. For external AC input, JJ1 must be open. The motherboard provides two jumpers, each corresponding to one alarm output. By factory default, both of two jumpers are set to be connected.

2.3.3 Signal Line Connections

DS-6401HDI Decoder provides the green terminal plug for connecting signal lines. Follow the instructions shown below:

1. Disconnect the green terminal plug from the terminal socket on the device;

2. Use the standard screwdriver to loosen the screws on the plug, and then insert signal lines to the plug and under the spring washers, and finally tighten the screws.

3. Connect the plug with signal lines to the corresponding green terminal socket.

CHAPTER 3

Network Parameters Configuration

Description:

- This chapter is about the network parameters configuration of DS-6401HDI Decoder.
- The DS-6401HDI factory default user name is *admin*, and password is *12345*.
- The DS-6401HDI factory default IP address is 192.0.0.64.

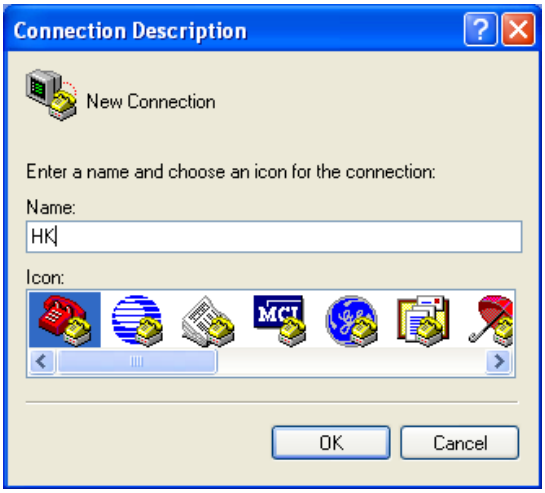
The network parameters need to be setup before the decoding channel configuration. The network parameters are used to connect with the software which is applied to set the decoding channels. The network parameters are including IP address, subnet mask, gateway and port.

3.1 Hyper Terminal Setup

The common method is to connect decoder and PC with serial line, run Hyper Terminal and modify parameters with serial command. Please connect the RS-232 port of decoder with the COM port of PC directly, power on the decoder and PC and follow the steps:

Step1: Enter Hyper Terminal.

Click Start-> Programs->Accessories-> Communications->Hyper Terminal in Windows system, and the dialogue box below will appear as the following figure:



Step2: Name the connection and define the icon.

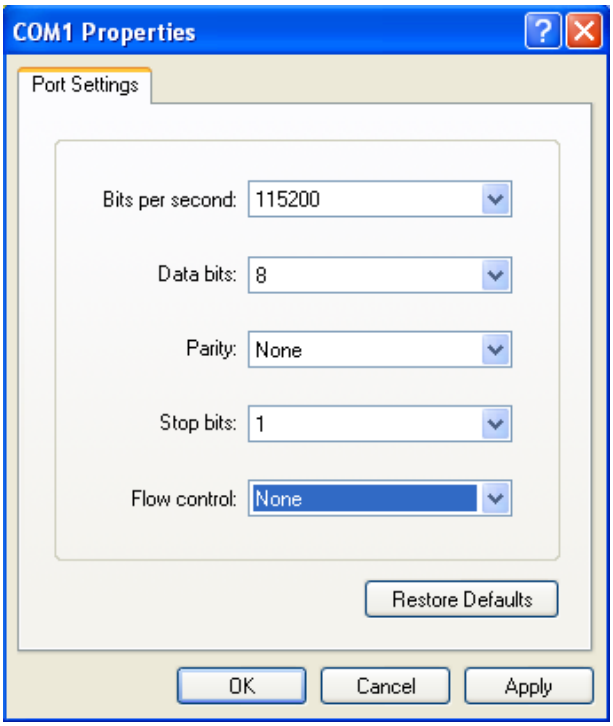
Input a name (e.g. HK), select an icon, and press OK to enter Connect To dialogue box.

Step3: Select the communication port.

Select COM1 in Connect To interface (Please select the COM port according to the reality, in case PC has more than 1 COM.). Press OK to enter Properties dialogue box.

Step4: Serial port setup.

Set port parameters in COM1 Properties dialogue box as the following figure:



The parameters should be:

Bits per second: 115200

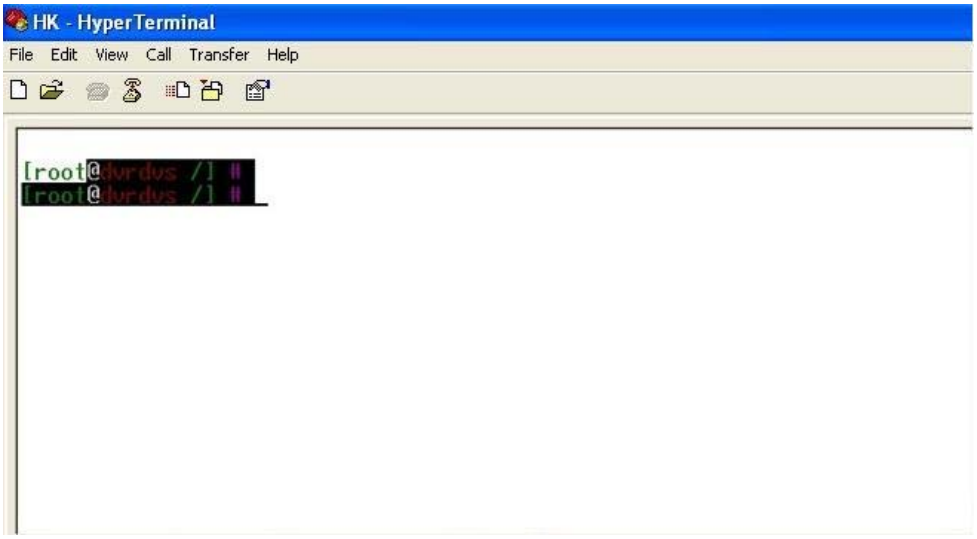
Data bits: 8

Parity: None

Stop bits: 1

Flow control: None

Press Apply and OK after the setup. Press Enter under Hyper Terminal interface. When [root@dvrdvs/]# appears, the connection is established.



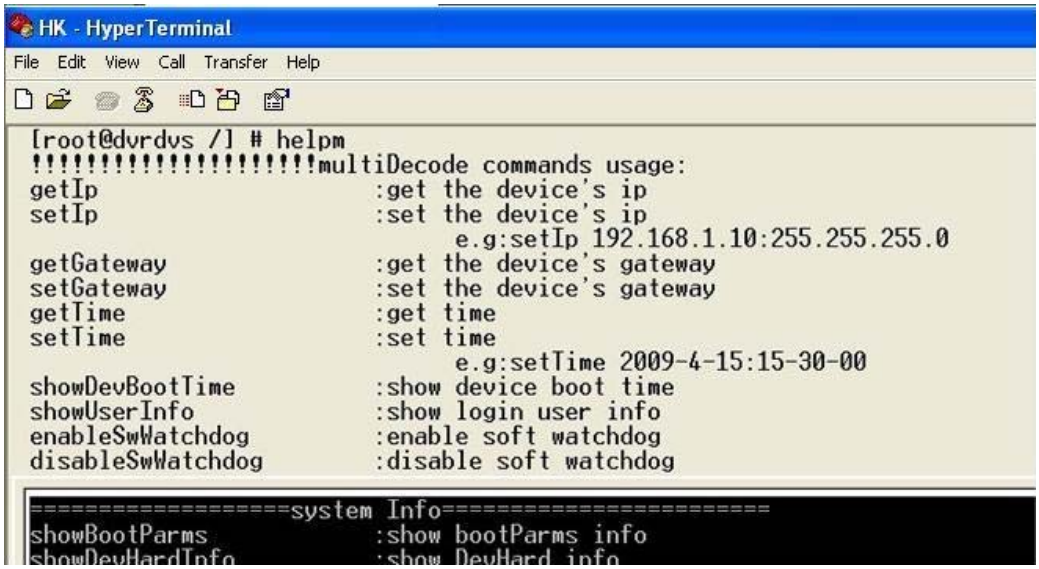
Step5: Disconnect and save connection

According to the tips, disconnect and save HK for the next time. After saving, there will be a new Hyper Terminal item established in the program group Start-> Accessories->Communications->Hyper Terminal. Connection names of all Hyper Terminal are included. You can see an icon named as HK here.

3.2 Network Configuration by Hyper Terminal

Enter Hyper Terminal

Click Start->Programs->Accessories->Communications->Hyper Terminal->HK, then the Hyper Terminal interface will appear as figure below. Type Enter, and the prompt [root@dvrdvs/]# will appear which means connection between RS-232 interface of PC and RS-232 interface of DS-6401HDI is established successfully by Hyper Terminal. The following operation commands are to accomplish the parameters setup in the prompt.



Commands Description:

Commands	Utilities
helpm	Console help command is used to print common commands, show as Figure 3.2.
getIp	Show the current IP address of decoder. Command format: getIp Enter.
setIp	Setup decoder IP address. Command format: setIp IP: mask, e.g. setIp 192.168.1.10:255.255.255.0
getGateway	Show current decoder gateway address. Command format: getGateway Enter.
setGateway	Setup decoder gateway. Command format: setGateway Gateway, e.g. setGateway 192.168.1.1
getTime	Show decoder current time. Command format: getTime Enter.
setTime	Setup decoder time. Command format: setTime 2009-4-15: 15: 30: 00
showBootTime	Show decoder boot time. Command format: showBootTime Enter.
showUserInfo	Show decoder current user information. Command format: showUserInfo Enter.

Note: For other commands, please consult our technical engineers.

CHAPTER 4

Decoder Configuration

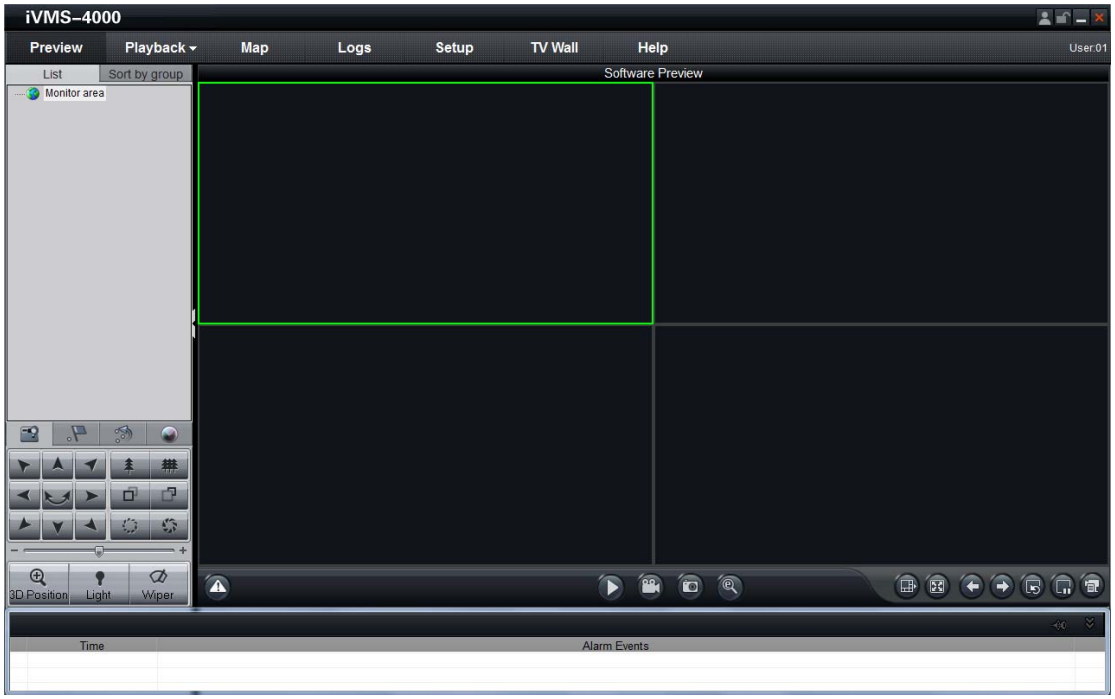
Instruction:

- Before configuration, user need to do the network configure according to the chapter3.
- Connect the decoder to the LAN.
- Prepare a PC connected to the same LAN with the decoder.

4.1 Decoder Configure Software

Run the disk of iVMS-4000 V2.0 software, and double click the icon to set up it in your PC. The following section has described the configuration of decoder through the software. Please refer to the user manual of iVMS-4000 V2.0 for more details.

The following figure shows the interface after access to the software:

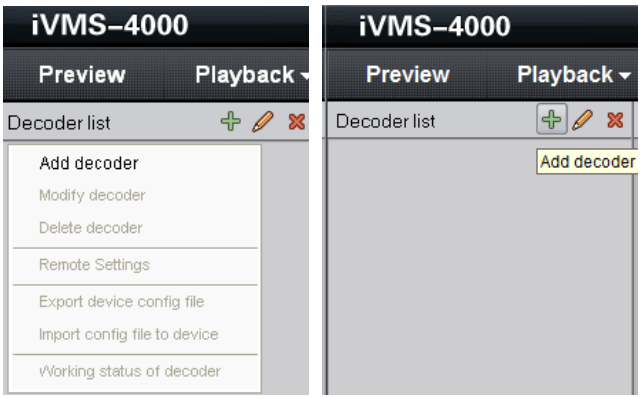


Note: This software is provided for configuration of the decoder; though it also has the function of configuring the encoder, this chapter only instructs the decoder configuration. For more instructions, please refer to the user manual of iVMS-4000 V2.0.

4.2 Add Decoder

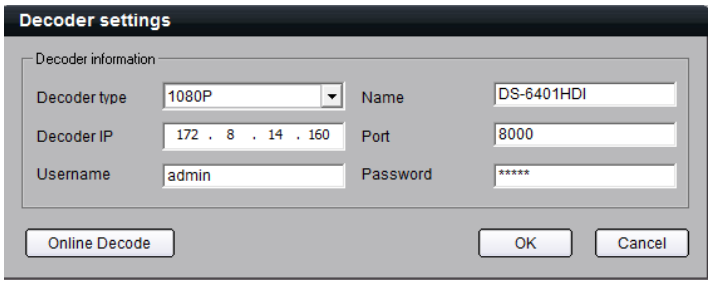
Click Setup and then click TV Wall Settings to enter the decoder settings interface.

Right click the Decoder list, and select Add decoder, or click to add decoder.



Input decoder name, IP, Port, Username, Password, and click OK to finish adding decoder.

Note: User can also click the *Online Decode* option to select and add the online device.

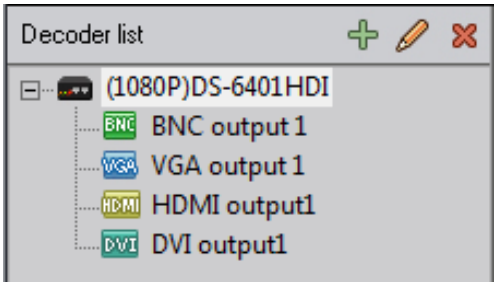


Option	Instruction
Decoder type	CIF, 4CIF, 720P and 1080P can be selected according to your decoder model, and different model of decoder could have different decode performance.
Decoder name	The name of the Decoder, which can be user-defined.
Decoder IP	The IP address of the Decoder.
Port	The device port of the Decoder.
Username/Password	The username and password of the Decoder.

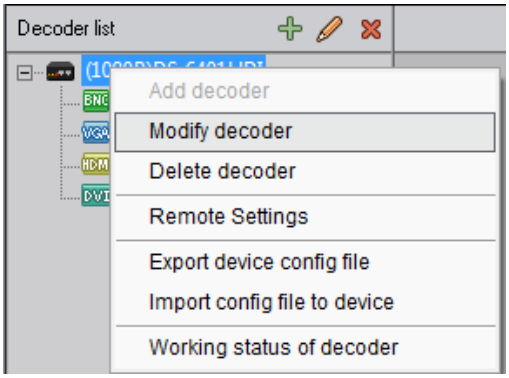
The DS-6401HDI decoding source is described as below:

Decode type	Instruction
CIF	4-channel decoding
4CIF	4-channel decoding
720P	2-channel decoding
1080P	1-channel decoding

After added successfully, the decoder channels will be displayed in the decoder list. DS-6401HDI Series decoder supports BNC, VGA, HDMI and DVI outputs.



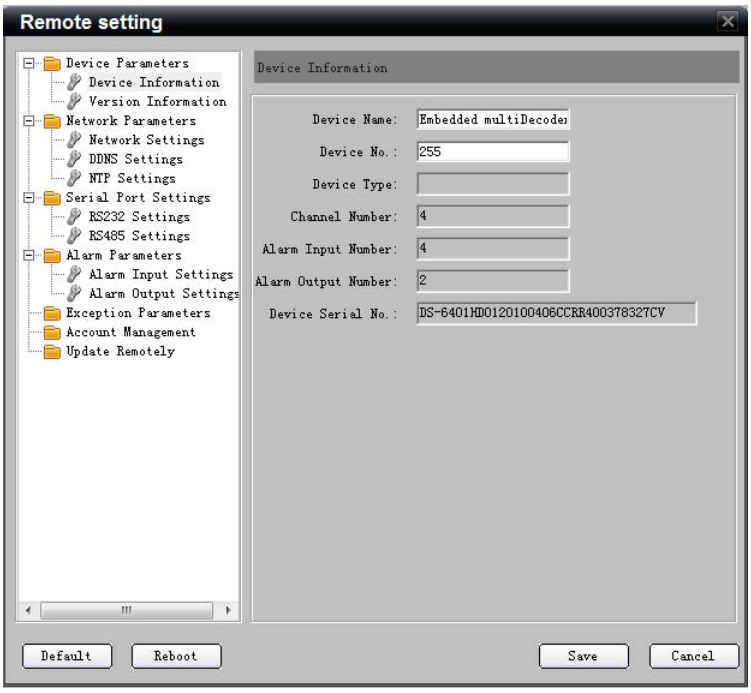
Right click a decoder and select Modify decoder or click, user can modify the decoder; select Delete decoder, or click to delete it.



Note: Each decoder is recommended to be added in one iVMS-4000 software only, avoiding disordered control caused by one decoder added in multiple software terminals.

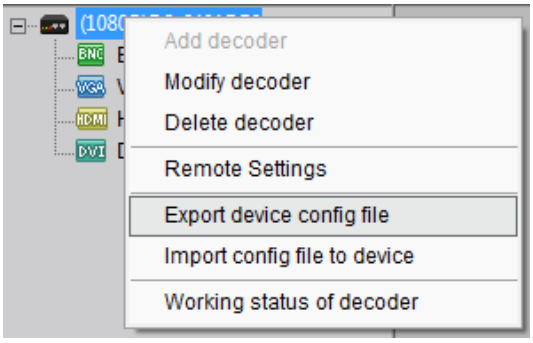
4.3 Decoder Configuration

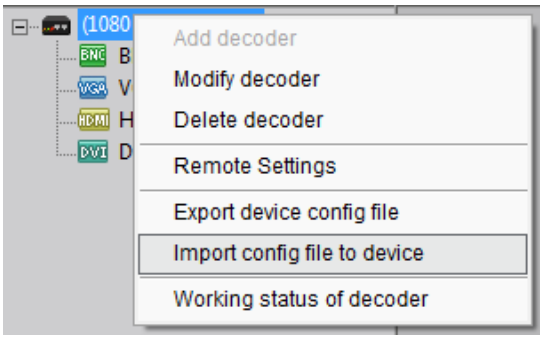
Select a decoder, right click it and select Remote Settings to enter the decoder Remote setting interface.



Export/import config file

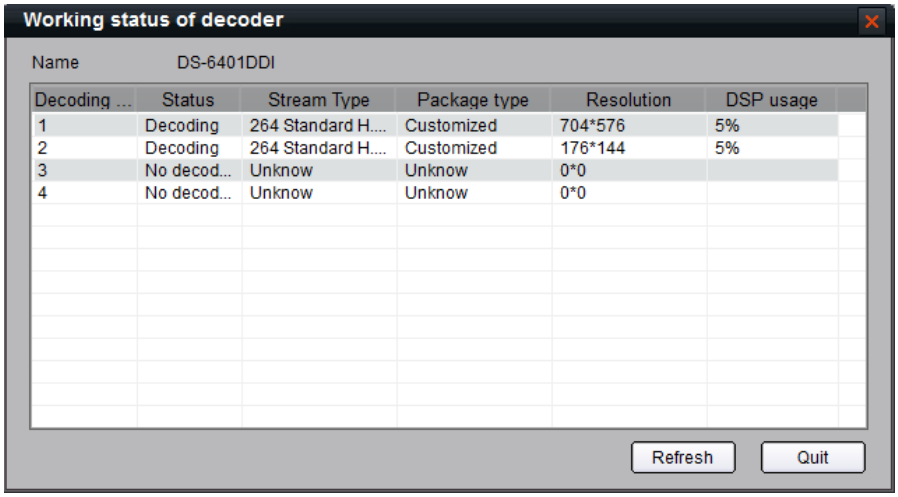
Right click a decoder, user can select Export device config file and save the device configuration file in C:\SaveRemoteCfgFile folder by default. If user has saved the config file before, select Import config file to device to import the existed configuration to the decoder.





Working status of decoder

Select Working status of decoder to view the status of decoder in the following list:



4.4 TV Wall Settings

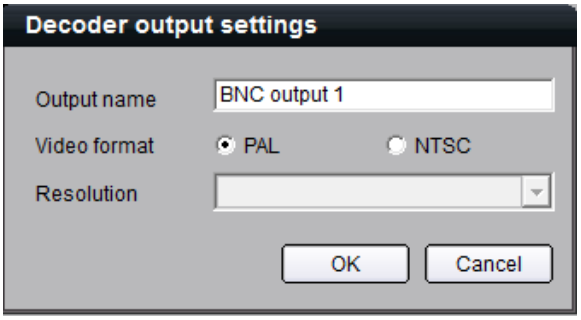
Enable/Disable decode output

After having added the decoder, the decoding channel is not in use by default. Drag the channel to the blank interface on the right to enable this channel.

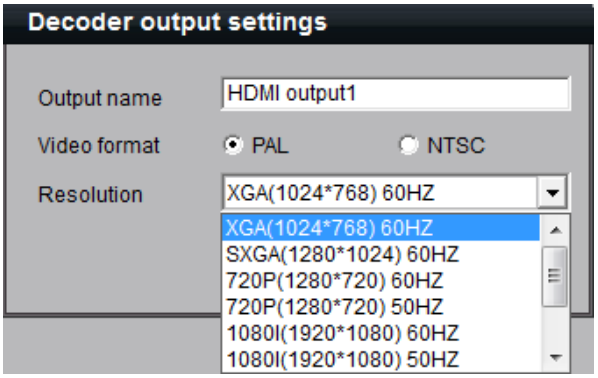
When a channel is enabled, user may click on the right bottom corner to disable this channel.

Decode output settings

By double clicking a channel of the decoder, user can configure the channel name and video format to be PAL or NTSC.



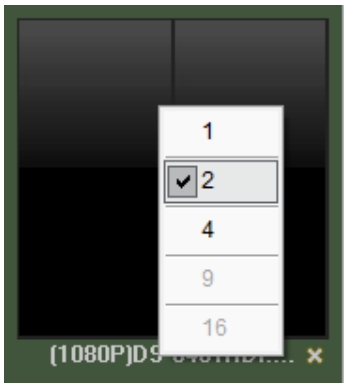
If the output name is set to VGA, HDMI or DVI output, then user can select the resolution from the drop-down menu.



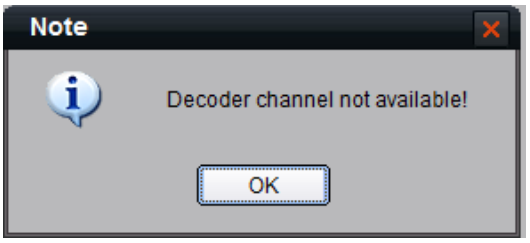
Window division configuration

By right clicking the decoder channel, user can select the screen division mode.

Currently, all of HDMI, DVI, BNC and VGA outputs can be selected to 1, 2 or 4-division display modes.

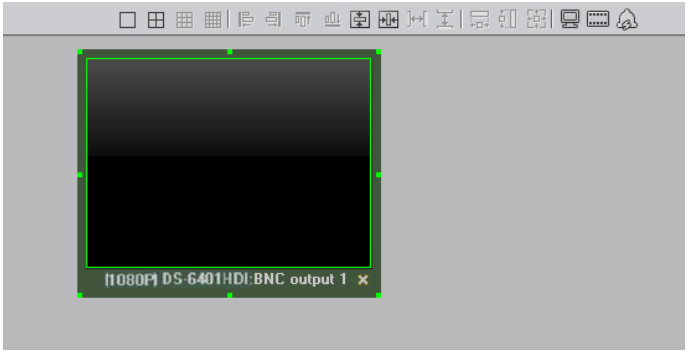


After configuration of the window division, if it has reached the limit of decoding source, then the system will display the warning message of "Decoder channel not available!" when the user continues to enable the decode output channel.



After having enabled the decoding output and configured the display mode, user can change the size and position of the display window.

Click the mouse and hold on the title below the window to change its position. By dragging a border of the decoder, user can change the size of the window. You can also use the layout toolbar to adjust the size and position.

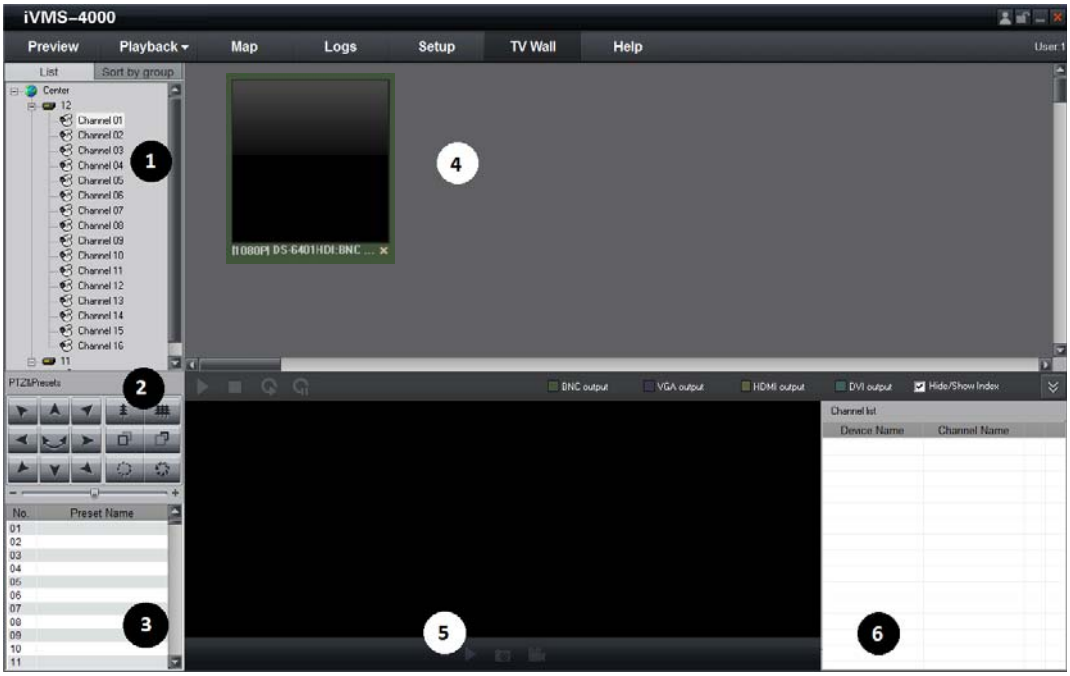


Refer to the following table for the description of layout toolbar:

Button	Description	Button	Description
	Align left		Flush right
	Align top		Flush bottom
	Vertical center		Horizontal center
	Equal horizontal interval		Equal vertical interval
	Equal width		Equal height
	Equal size		

4.5 Decoder Control

After having finished the decoder addition and TV wall configuration, click the icon TV Wall to enter the decoder control interface:



Area	Description	Area	Description
❶	Device list	❷	PTZ control panel
❸	Preset list	❹	Display of decoding channel
❺	Live view of decoded video from selected decoding channel	❻	Display of working status of selected decoding channel

Enter TV Wall control interface, and the decoding channel will be displayed in the area according to user-defined configuration. Click to hide the display of decoded video and status, or click to resume display.

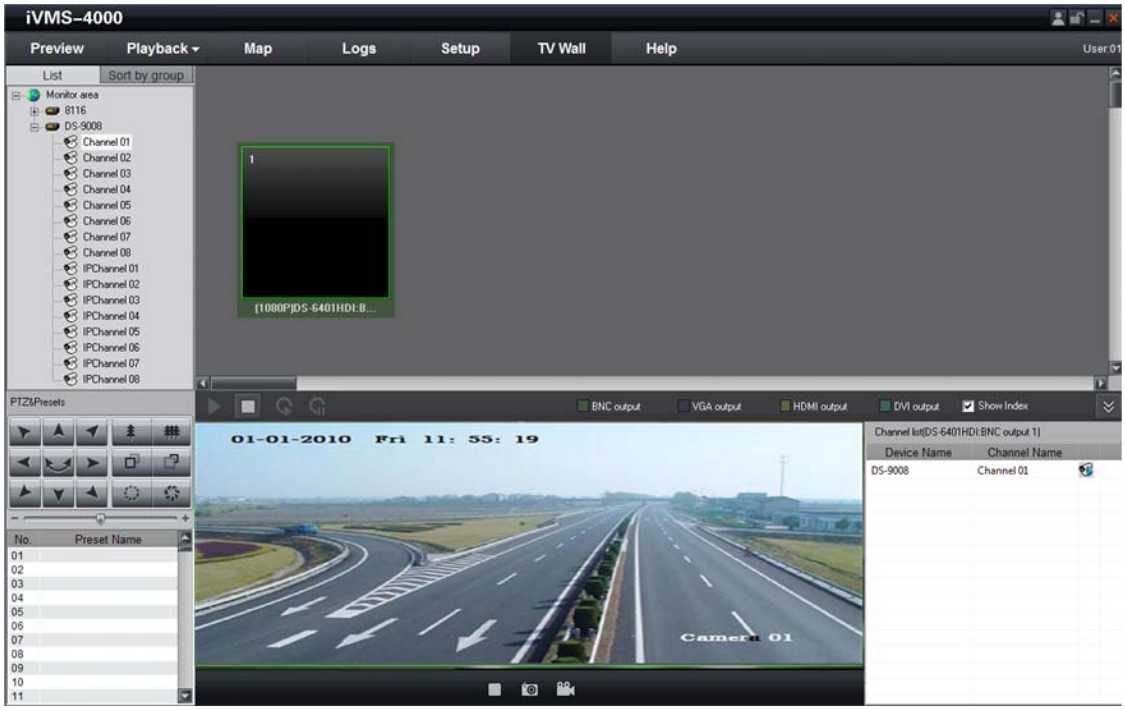
Description of the functional buttons on the interface:

Button	Description		Button	Description
	Start playing the decoded video			Stop playing the decoded video
	Start cycle decoding			Stop cycle decoding
	Start/Stop the live view of local decoded video			Capture
	Record			

Note: The display of TV wall will not be affected by starting or stopping the live view of decoded video.

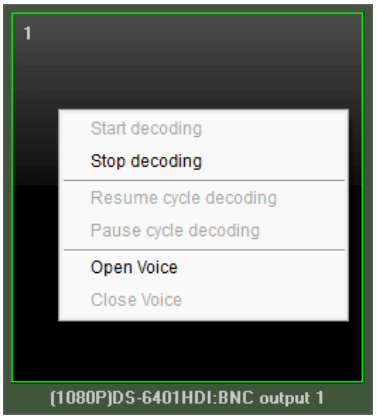
4.5.1 Video Decoding

Select the decoding window, and double click the desired channel from the device list and the decoder will start decoding for this channel. The real-time decoded video will be displayed on the live view panel, and the current decoding status will also be displayed in the *Channel list*.



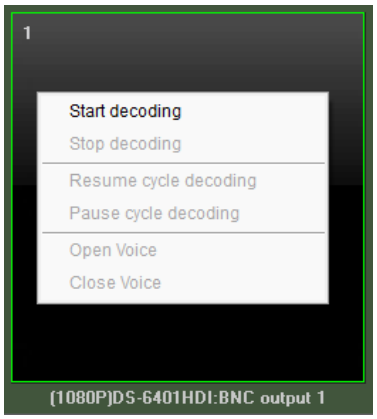
Stop decoding

Right click the decoding channel, and select Stop decoding or click to stop decoding on the current decoding window.



Start decoding

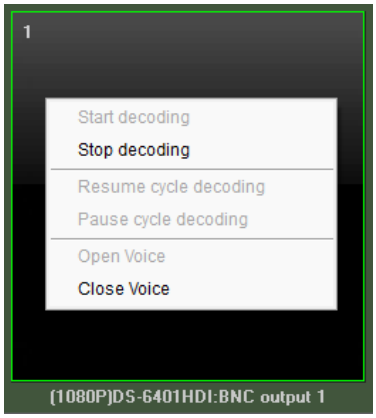
When the decoding is disabled, user can right click the decoding window or select Start decoding or click to resume decoding.



Voice control

Right click the decoding window, and select Open voice option to open voice; when the voice is turned on, right click the decoding window, and select Close voice option to close voice.

Note: Only the Audio & Video stream type can support the function Open voice.

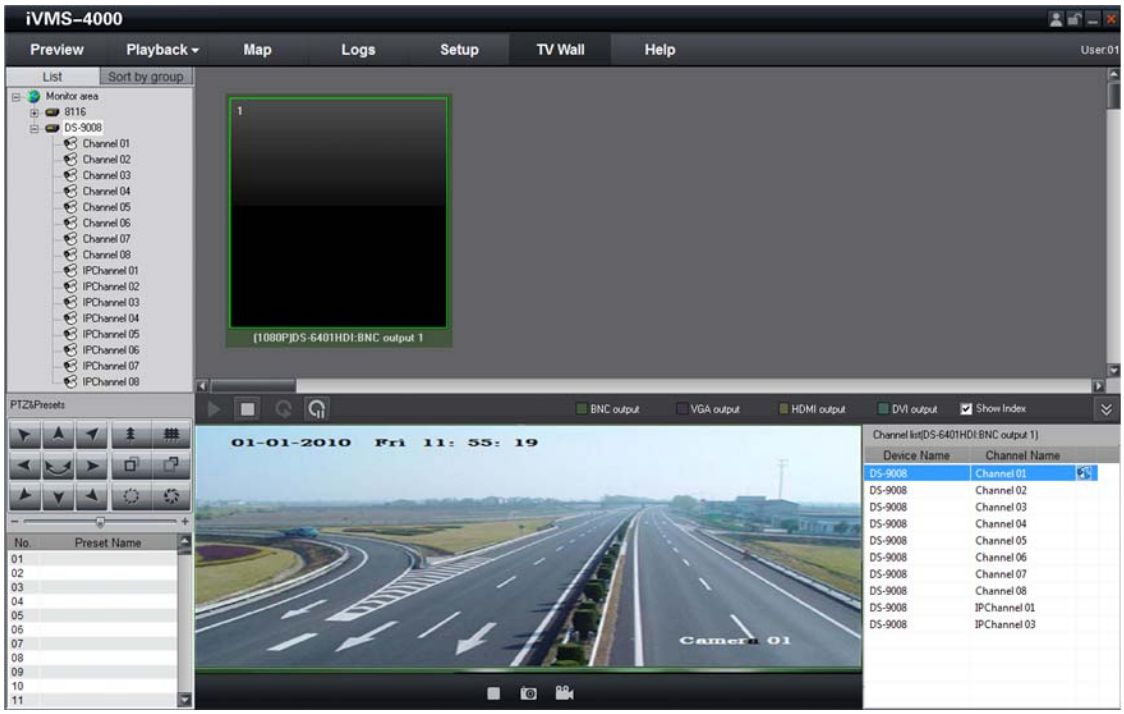


Select the decoding window, and the current decoded video images will be displayed on the live view display area. Click the icon from the toolbar to stop the live view of decoded video if required; and clicking may start the display of decoded video again. Refer to the following figure:

When in live view state, user can click  to capture the current picture for local storage. Click the icon  to start recording and then the state of the icon will be changed to  ; click it again to stop recording.

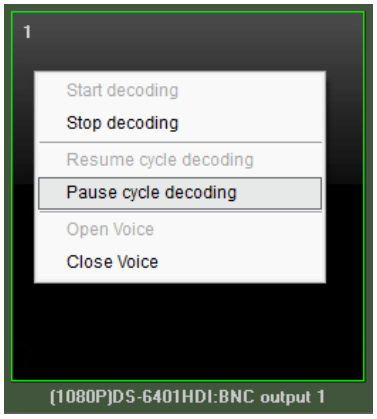
4.5.2 Cycle Decoding

Drag a device or group node to the designated decoding window, and then all channels under this device or group will be decoded in cycle. The real-time decoded video will be displayed on the live view panel, and the current decoding status will also be displayed in the *Channel list*.



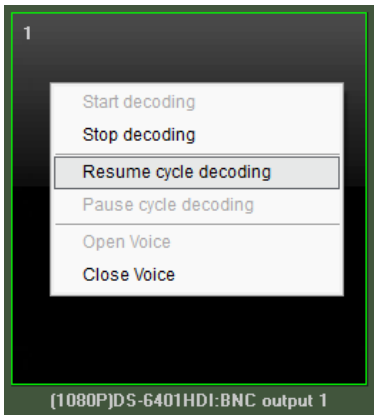
Pause cycle decoding

Right click the current cycle decoding window, and select the Pause cycle decoding or click to pause the cycle decoding.



Resume cycle decoding

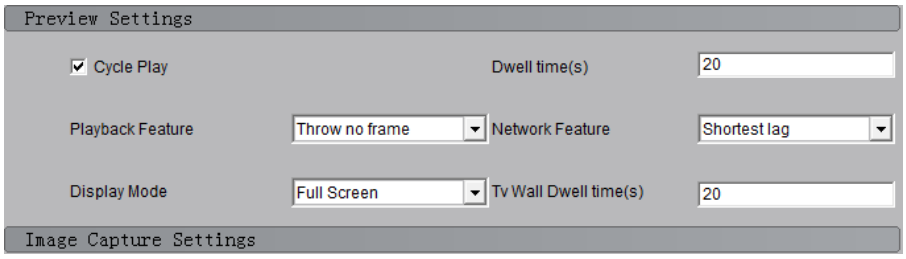
When the cycle decoding is in paused status, user may right click on the decoding window and select Resume cycle decoding or click to start cycle decoding again.



Configure the cycle decoding dwell time

Click Setup to enter the setup management interface and then click Local Settings to enter preview settings interface (refer to the following figure) which allows user to set the TV Wall Dwell Time.

After configuring the time, click the Save button to save the configuration.

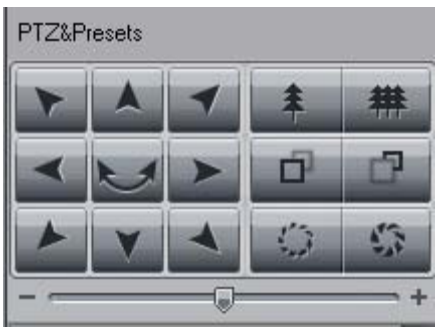


Note: it is recommended to set the dwell time of cycle decoding to be longer than 5s.

4.5.3 PTZ Control

If the decoder is connected with PTZ, user can operate the PTZ control through the client software.

There are 8 directional keys to control PTZ movement, and the sliding bar is used to change PTZ speed, which is adjustable from 1 to 7, and the default speed is 4.



Click  key to start auto scanning and click it again to stop scanning.

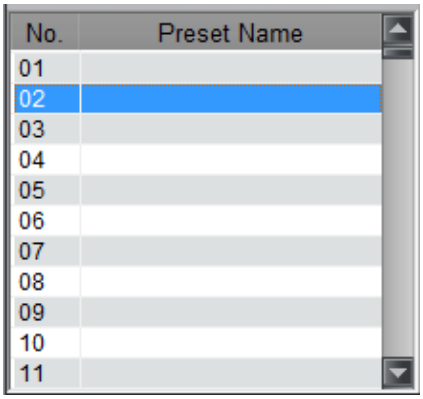
Click the function keys on the right to adjust focus, iris and zoom.

If the PC is connected with 1002KI/1003KI keyboard or USB joystick, the PTZ can also be controlled by them.

Note: If the current decoding window is under cycle decoding, the cycle decoding will be paused while operating PTZ control; and when the PTZ control is finished, the cycle decoding will be resumed.

Call preset

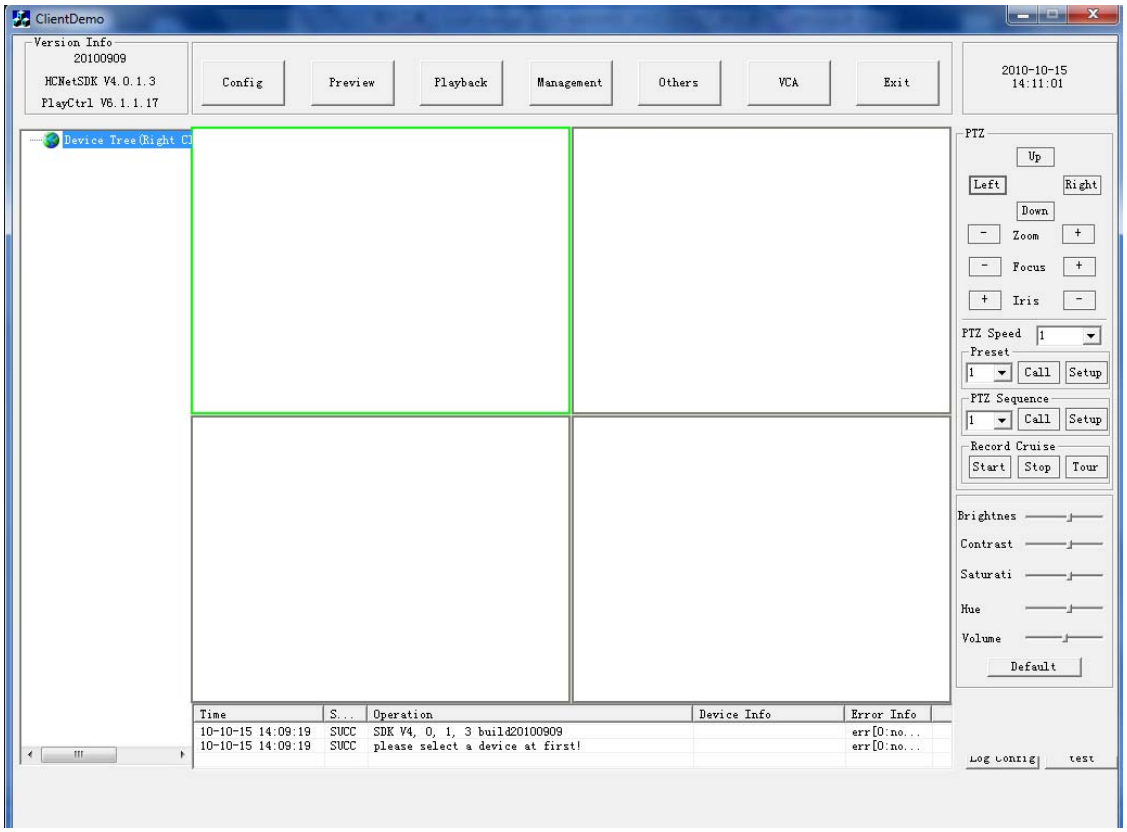
User may double click the existed preset in the preset list to call the selected preset of dome/camera.



CHAPTER 5

Third-party IP Camera Access

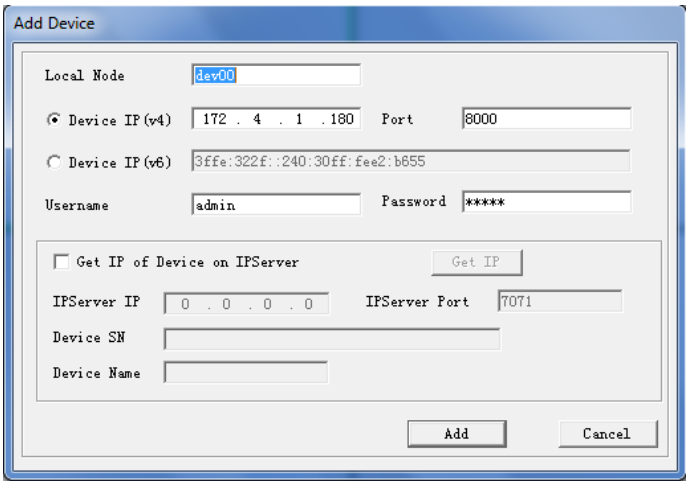
Run the ClientDemo program from the provided CD-driver to enter the following interface:



Note: This Demo program is mainly used for demonstrating the configuration of the third-party IP cameras.

5.1 Add Decoder

Right click the Device Tree (Right Click to Add Device) to enter the **Add Device** dialog box. Input the local node, device IP(v4), username, password, and port in the dialog box, and then click **Add** to finish the adding of device.



5.2 Configure the Decoder

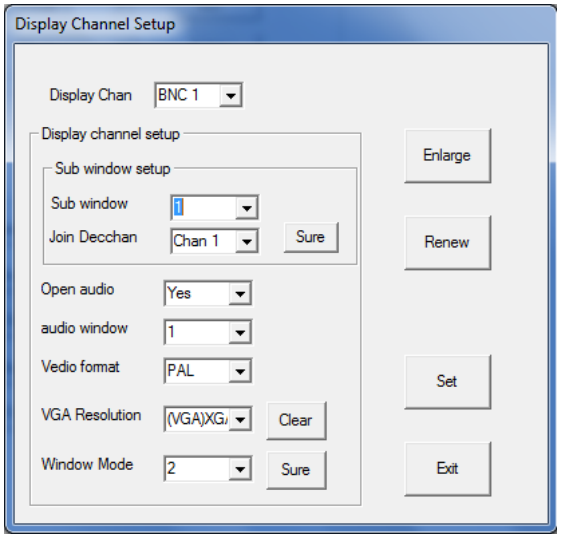
Select the added device, and click `Config` `Multi Decoder Setup` to enter the multi-channel decoder configuration.

Display Channel Configuration

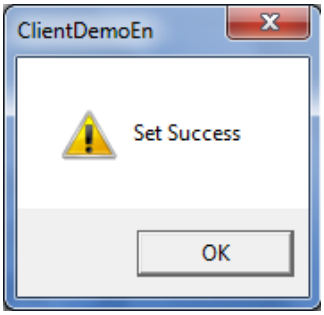
Click `Display Channel Setup` to enter the Display Channel settings interface.

Select channel from the drop-down menu of Display Chan.

Select the window division display mode from the drop-down menu of Window Mode.

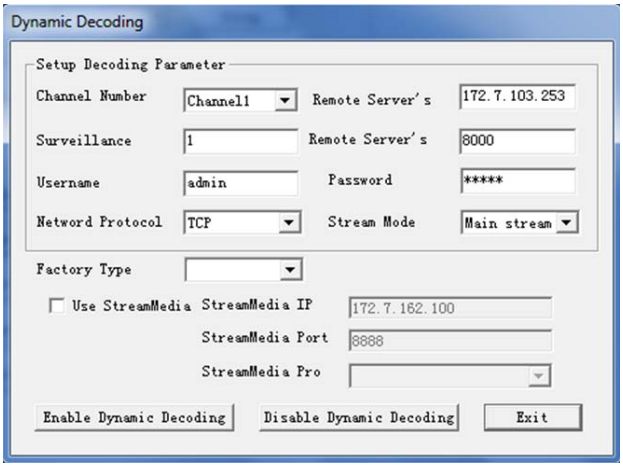


Click the Sure and then Set button to save the settings. If succeed, the system will pop up a message box as Set Success. Click OK to return to the Display Channel settings interface, and then click the Exit button to complete the settings of display channel.



Enable Dynamic Decode

Click Dynamic Decoding to enter the Dynamic Decode settings interface.



Select the decoding Channel Number.

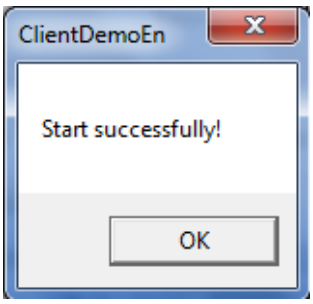
Note: DS-6401HDI provides 4 decoding channels for selection.

Input the information of the IP camera to be connected, including the remote servers IP, surveillance channel, remote servers port, username, password, etc.

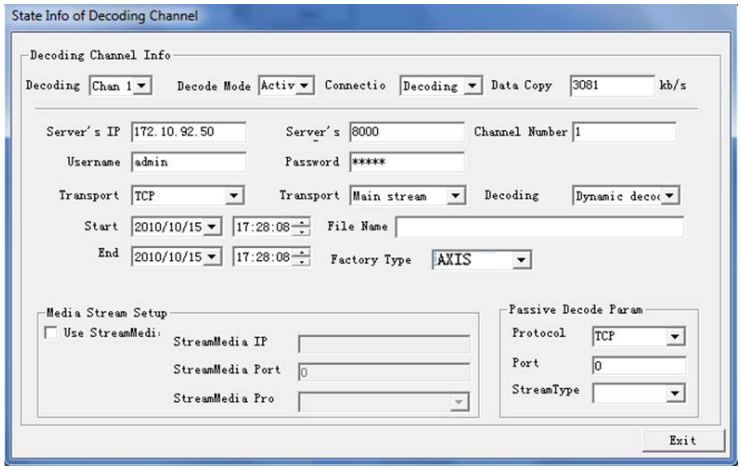
Select the IP camera manufacturer.

Note: Please refer to the Appendix B for the list of IP cameras supported by DS-6401HDI.

Click Enable Dynamic Decoding to start decoding. If the decoding is successfully, the system will pop up a message box as Start successfully, or else the message box Error: NET_DVR_MatrixStartDynamic = x will appear.



When the dynamic decoding is successful, the corresponding decoding information can be displayed in the State Info of Decoding Channel by clicking the Decoding Channel Setup.



CHAPTER 6
Appendix

Appendix A Specifications

Model		DS-6401HDI
Audio/Video Output	CVBS Output	1-ch BNC output, resolution: PAL: 704×576, NTSC: 704×480
	VGA Output	1-ch VGA output, resolution: 1280×720@60Hz, 1280×1024@60Hz, 1024×768@60Hz
	HDMI Output	1-ch HDMI output, resolution: 1600×1200@60Hz, 1080P(1920×1080P)@60Hz, 1080I(1920×1080I)@60Hz, 1080P(1920×1080P)@50Hz, 1080I(1920×1080I)@50Hz, 1280×720@60Hz, 1280×720@50Hz, 1280×1024@60Hz, 1024×768@60Hz
	DVI Output	1-ch DVI output, resolution: 1600×1200@60Hz, 1080P(1920×1080P)@60Hz, 1080I(1920×1080I)@60Hz, 1080P(1920×1080P)@50Hz, 1080I(1920×1080I)@50Hz, 1280×720@60Hz, 1280×720@50Hz, 1280×1024@60Hz, 1024×768@60Hz
	Audio Output	2-ch, RCA (2.0~2.4Vp-p, 600Ω)
Audio/Video Decoding	Video Compression	H.264 /MPEG4
	Video Decoding Resolution	1080P(1920×1080P), 720P(1280×720P), UXGA(1600×1200), SVGA(800×600), VGA(640×480)
	Video Decoding Channels	1-ch at 1080P(1920×1080P)/2-ch at 720P(1920×720P)/4-ch at 4CIF resolution
	Multi-division Display Mode	1/2/4
	Frame Rate	PAL: 1/16~25fps, NTSC: 1/16~30fps
	Audio Compression	OggVorbis
External Interface	Network Interface	1RJ45 10/100/1000Mbps self-adaptive Ethernet interface
	Serial Interface	1 RS-485 and 1 RS-232 serial interface
	Voice Talk	1-ch, RCA (2.0~2.4Vp-p, 1000Ω)
	Alarm In	4
	Alarm Out	2
Others	Power Supply	12VDC
	Power Consumption	12W
	Working Temperature	-10℃~55℃
	Working Humidity	10%~90%
	Dimension	198mm(W) ×123mm(D) ×39mm(H)
	Weight	1.5kg

Appendix B List of Third-party IP Cameras Access

IPC Manufacturer	Model	Firmware Version	Supported Resolution	Supported BitRate
Panasonic	WV-NP240 Series	1.00Ex(*x* stands for numeric)	640×480/320×240 (not support frame rate settings)	CBR: (support: 64, 128, 256, 512, 1024, 1536, 2048, 3072, 4096kbps)
Sony	SNC-DF40/DF70	1.03	640×480/480×360/384×288/320×240/256×192/160×120(frame rate: 25, 20, 15, 10, 8, 6, 5, 4, 3, 2, 1)	VBR: (support: 2048, 1536, 1024, 768, 512, 384, 256, 128, 64 kbps) CBR: (support: 2048, 1536, 1024, 768, 512, 384, 256, 128, 64 kbps)
Axis	207W/207MW	4.4	640×480/1280×1024/1280×720/1280×960/1280×480/480×360/480×270/352×288/320×240/320×180/240×180/240×135/176×144/160×120/160×90 (frame rate: 25, 20, 15, 10, 8, 6, 5, 4, 3, 2, 1)	VBR: (support: 64, 128, 256, 512, 1024, 1536, 2048, 3072, or self-defined 32-8192 kbps) CBR: (support: 64, 128, 256, 512, 1024, 1536, 2048, 3072, or self-defined 32-8192 kbps)
	Q1755	5.02	1920×1080/1280×720/800×450/480×270/320×180 (frame rate: 25, 20, 15, 10, 8, 6, 5, 4, 3, 2, 1)	VBR: (support: 64, 128, 256, 512, 1024, 1536, 2048, 3072, or self-defined 32-8192 kbps) CBR: (support: 64, 128, 256, 512, 1024, 1536, 2048, 3072, or self-defined 32-8192 kbps)

Sanyo	VCC-HD4000	MAIN Ver: 1.04-90 SUB Ver: 1.00-03	1280×720/960×540/640×360/320×180 (not support frame rate settings)	Not support
	VCC-H500	CAM MAIN Ver 1.00-08; CAM SUB Ver 1.00-00; NET MAIN ver 1.00-04; NET SUB Ver 1.00-01	1280×720/640×360/320×180 (not support frame rate settings)	Not support
	VCC-HD2300	MAIN Ver: 1.01-01(100312-03); SUB Ver: 1.00-02(100224-00)	1920×1080/1280×720/640×360/320×180 (not support frame rate settings)	Not support
Bosch	NBC255P	18500400	640×480/320×240/704×576/704×288/352×288/176×144 (not support frame rate settings) (Note: the resolution actually supported is 640×480/320×240, or depending on different model)	VBR: (not support) CBR: (support: 2048, 1536, 1024, 512, 384, 256, 128, 64, or self-defined 32-8192 kbps)
	NWC0495	18500400	640×480/320×240/704×576/704×288/352×288/176×144 (not support frame rate settings) (Note: the resolution actually supported is 704×576/704×288/352×288/176×144, or depending on different model)	VBR: (not support) CBR: (support: 2048, 1536, 1024, 512, 384, 256, 128, 64, self-defined 32-8192 kbps)
Zavio	f3105	MG.0.5.1.01	320×240/640×480/1280×720/1280×1024 (frame rate: 1, 2, 3, 4, 5, 7, 10, 15, 20, 30)	VBR: (support: 64, 128, 256, 384, 512, 768, 1M, 1.5M, 2M, 3M, 4M, 5M, 6M kbps CBR: (support: 64,

				128, 256, 384, 512, 768, 1M, 1.5M, 2M, 3M, 4M, 5M, 6M kbps)
ACTi	acm7411	V3.11.13	160×112/320×240/640×480/1280×720/1280×1024 (frame rate: 1, 2, 3, 4, 5, 6, 7, 10, 15, 30)	VBR: (support: 56, 128, 256, 384, 512, 750, 1024, 1.2M, 1.5M, 2M, 2.5M, 3Mkbps) CBR: (support: 56, 128, 256, 384, 512, 750, 1024, 1.2M, 1.5M, 2M, 2.5M, 3Mkbps)
Infinova	V6201-M Series	1.02.110.20090903	D1/2CIF/CIF/QCIF/640×480/1280×720/1280×960 (frame rate: 1, 2, 4, 6, 8,10, 12, 15, 20, 30N/25P) (Note: the resolution actually supported is 640480/1280720/1280960, or depending on different model)	CBR: (support: 256, 512, 1M, 2M, 3M, 4M, 5M, 6M, 7M, 8M kbps)
	SD Network Camera Series	1.03.71.20091229	D1/2CIF/CIF/QCIF/640×480/1280×720/1280×960 (frame rate: 1, 2, 4, 6, 8, 10, 12, 15, 20, 30N/25P) (Note: the resolution actually supported is D1/2CIF/CIF/QCIF, or depending on different model)	VBR: (support: 256, 512, 1M, 2M, 3M, 4M, 5M, 6M, 7M, 8M kbps) CBR: (support: 256, 512, 1M, 2M, 3M, 4M, 5M, 6M, 7M, 8M kbps)
Sunell	SNIPV54/00	V1.5_build042015	704×576/352×288/176×144	VBR/CBR
ATEME	VSIP4 VSS-441	V1.2.3.1	704×576/704×288/352×288/176×144	VBR/CBR/CVQ

Appendix C FAQ

- **Why cannot ping the decoder?**

  Please refer to Chapter 3 to configure the decoder IP address being in the same segment as your PC, and check the cable and switch.

- **Why the transparent channel has been set, but the encoder still cannot receive data?**

  1: Check if RS232 has been set as transparent channel first.

  2: Check the connection of encoder.

- **Why cannot add decoder with 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 recorded file 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 range.

- **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 D Glossary

Dual Stream

Dual stream refers to that one channel of video stream can be divided into double independent output streams through the video encoder. Shown as below:

The resolution, frame rate, bitrate and other parameters of the output stream are independently programmable. The two streams generated may meet different application demands, e.g., one stream is used for HDD storage, and the other for transmission via Internet.

Transparent Channel

The transparent channel indicates the channel used for transmitting data, and through which the data transmitted receives no handling and thus retains no change. By remotely connecting the keyboard with the decoder, the transparent channel can be established to realize control of dome or Pan/Tilt unit connected to remote encoder.

Resolution

The type of resolution can be divided into the display resolution, image resolution and pixel resolution.

The display resolution refers to the maximum display zone on the screen in certain display mode, measured in horizontal and vertical pixel.

The image resolution describes the detail a digital image holds, measured in horizontal and vertical pixel as well. In case the image resolution is higher than the display resolution, proportion of the image will not be displayed on the screen.

The pixel resolution indicates the ratio of the pixel width and length. Different pixel width/length ratio will result in different shape of image.

Generally the image resolution is applied to the digital surveillance:

PAL: QCIF (174×144), CIF(352×288), 2CIF(704×288), DCIF(528×384), 4CIF(704×576).

NTSC: QCIF (174×120), CIF(352×240), 2CIF(704×240), DCIF(528×320), 4CIF(704×480).

Streaming Server

The streaming server refers to a dedicated computer system or server which runs the corresponding streaming media software to provide the delivery of data. It is generally applied to the delivery of the same massive data, which may greatly reduce the load of the host as well as save internet resources.