

HD
Decoder

User Manual



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Please read this instruction carefully before operating the unit and keep it for further reference

Notes

- Please read this user manual carefully to ensure that you can use the device correctly and safely.
- There may be several technically incorrect places or printing errors in this manual. The updates will be added into the new version of this manual. The contents of this manual are subject to change without notice.
- This device should be operated only from the type of power source indicated on the marking label. The voltage of the power must be verified before using the same. Kindly remove the cables from the power source if the device is not to be used for a long period of time.
- Do not install this device near any heat sources such as radiators, heat registers, stoves or other devices that produce heat.
- Do not install this device near water. Clean only with a dry cloth.
- Do not block any ventilation openings and ensure proper ventilation around the machine.
- This machine is for indoor use only. Do not expose the machine in rain or moist environment. In case any solid or liquid get inside the machine's case, please turn off the device immediately and get it checked by a qualified technician.
- Do not try to repair the device by yourself without technical aid or approval.
- This manual is suitable for many models. All examples and pictures used in the manual are from one of the models for reference.

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1 Introduction

1.1 Summary

The decoder is a 4-channel professional decoder, which adopts high-performance SOC decoding chip. It not only supports multi-channel standard-definition and high-definition network videos decoded on TV wall independently (in device running mode), but also it can be managed in an integrated way by video surveillance management platform (in platform running mode). Therefore, this decoder can be widely used in banks, schools, intelligent buildings, transportation, environmental protection, supermarkets, gasoline stations, housing estates, factories, etc.

1.2 Features

Decoding & Display

- 4*HDMI@1080P; HDMI1 and HDMI3 support 4K
- 4*VGA output, 4*BNC output
- Support PS, RTP,TS,ES package format(in platform running mode)
- Support NTSC&PAL video format
- H.265 HP/MP/BP and H.264 HP/MP/BP
- 8CH 8MP@30fps or 16 CH 4MP@30fps or 32CH1080P@30fps 64CH 720 P@30fps or 128CH D1 or lower
- G.711A/G.711U
- 1 CH audio input; 4 CH audio output
- 1 CH talkback

Decoding Control

- Support live view and playback decoding
- 1/4/9/16/25/36 screen display mode
- Splicing, picture-in-picture, roaming
- View cameras or camera groups in sequence
- A&V streams can be acquired actively and passively
- A&V streams can be directly acquired from IPC/DVR/NVR by SDK private protocol
- A&V streams can be acquired from NVMS platform or encoding devices by RTSP/RTP protocol
- A&V streams can be acquired from IPC by ONVIF protocol

Device Management

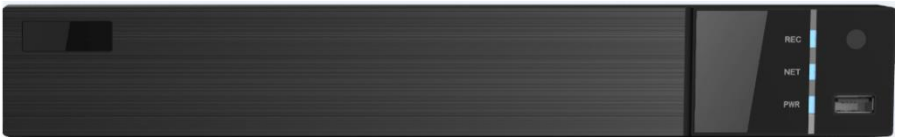
- Superior-subordinate management

- A maximum of 64 decoders can be manageable
- Access
- Provide HTTP API protocol to third-party platform
- Support platform running mode and device running mode

Operation and Maintenance

- Support device search
- Support WEB client access, configuration and management
- Support time zone, time and date settings
- Support IP address, subnet mask and gateway settings
- Support data port and HTTP port settings
- Support data backup and restoration
- Support remote reboot and one-button reset
- Support online and U-disk upgrade
- Support dual gigabit Ethernet ports, load balancing

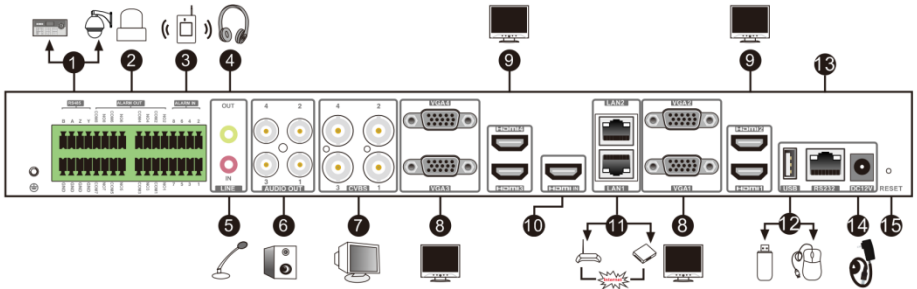
1.3 Front-panel Descriptions



Front panel

Name	Description
REC	Record indicator (unavailable)
NET	Network indicator. The light will go on when it is connected to network.
PWR	Power indicator. The light will go on when it is powered.
	USB interface

1.4 Real-panel Descriptions



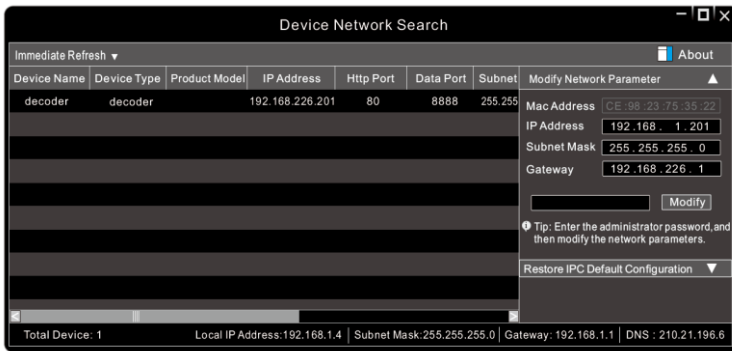
Rear panel

Number	Description
1	RS485 interfaces. Connectors for speed domes. Y is TX+; Z is TX-; Connects for keyboards. A is TX+; B is TX- (unavailable temporarily)
2	8CH alarm output (unavailable temporarily); Relay output. Connect to external alarms.
3	8CH alarm input (unavailable temporarily)
4	Connector for audio output (used for two-way talk)
5	Connector for audio input (used for two-way talk)
6	Audio output × 4
7	CVBS output × 4
8	VGA output × 4 (1920×1080,1280×1024)
9	HDMI output × 4 (HDIM1/HDMI3: 3840×2160, 1920×1080,1280×1024; HDMI2/HDMI4: 1920×1080,1280×1024)
10	HDMI input× 1
11	Gigabit Ethernet port× 2
12	Connector for external USB devices (like USB mouse)
13	RS232 serial port
14	DC12V power input
15	Reset

2 Login

The login settings are as follows.

- ① Make sure the PC and decoder are connected to the LAN.
- ② Find the IP-Tool from the CD and then install it on your computer.
- ③ Run the IP-Tool. Then the decoder can be searched. If the decoder can't be searched, please check whether the PC and the device are connected to the network or not. Click the device to check its detail information as shown below.



- ④ Modify the IP address. Click the information of the decoder listed in the above table to show the network information. Modify the IP address and gateway of the decoder and make sure its network address is in the same local network segment as the computer's. Please modify the IP address of your device according to the practical situation. Double click the decoder information in IP-Tool or directly enter IP address in the web browser to access. Here we take IE client for example.

User Login

Username

Password

☒ Remember Password

Username: The default username is admin.

Password: The default password is admin.

Enter the default username and password and then click [Login].

3 Device Running Mode

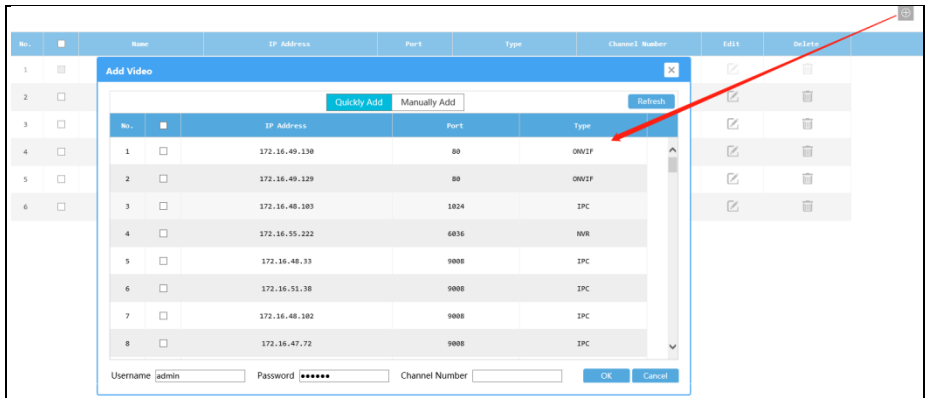
3.1 Video Settings

In device running mode, video settings can be set. If the decoder is platform running mode, please skip this chapter.

Note: The decoder runs in platform mode by default. Video and decoding settings cannot be configured in this mode. If you want to manage videos by your local device, please switch the running mode to device mode (See [Basic Settings](#)).

3.1.1 Video Management

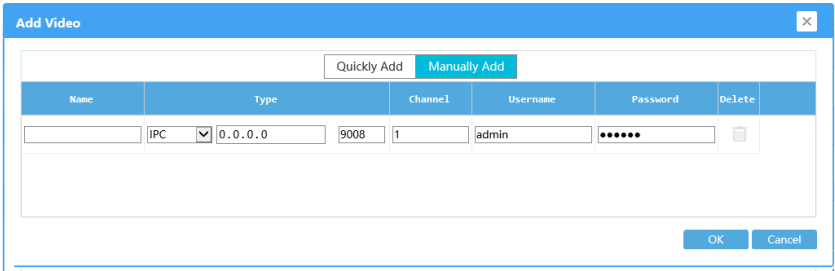
Go to Video Settings→Video. Then click  to add videos.



Videos can be quickly add or manually add through the above interface.

Quickly Add: Click [Refresh] to search video devices (like IPC, DVR, NVR, etc.) in the same local network. Select the desired video devices and then enter username, password and channel number of the devices. Then click [OK] to save the settings.

Manually Add: Click the “Manually Add” tab to add the video devices manually.

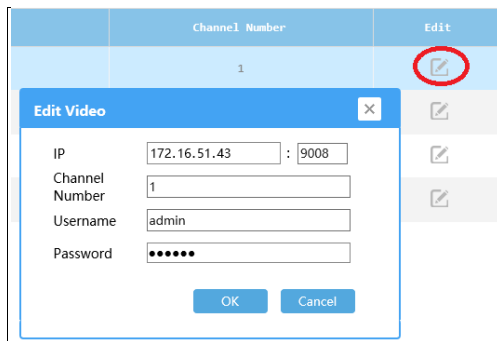


The 'Add Video' dialog box features a blue header with a close button. Below the header, there are two tabs: 'Quickly Add' and 'Manually Add'. The 'Manually Add' tab is active. The main area contains a table with columns: Name, Type, Channel, Username, Password, and Delete. A single row is visible with the following values: Name (empty), Type (IPC with a dropdown arrow), Channel (0.0.0.0), Username (9008), Password (1), and a delete icon. At the bottom right, there are 'OK' and 'Cancel' buttons.

Name	Type	Channel	Username	Password	Delete
	IPC	0.0.0.0	9008	1	

Users can add IPC, NVR and DVR of our company or the video devices supporting ONVIF or RTSP protocol. Please select as needed. Then enter the corresponding IP address, port, channel number, username and password.

Modify the information of a video device: Click  behind the channel number to change the IP address, channel number, username and password.



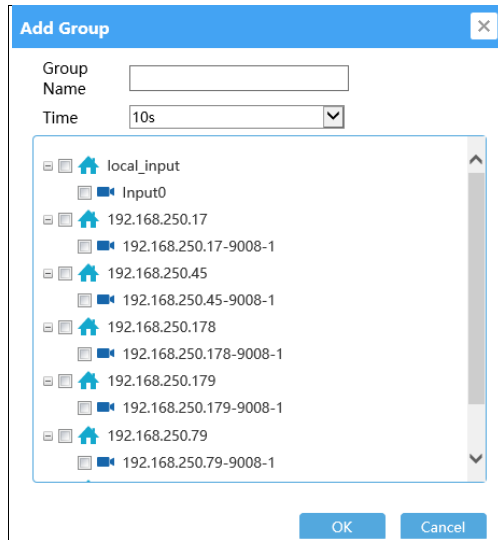
The 'Edit Video' dialog box is shown over a table. The table has columns 'Channel Number' and 'Edit'. The 'Channel Number' column contains the value '1'. The 'Edit' column contains an edit icon, which is circled in red. The 'Edit Video' dialog box has a blue header with a close button. It contains fields for IP (172.16.51.43), Channel Number (9008), Username (1), and Password (admin). At the bottom, there are 'OK' and 'Cancel' buttons.

Channel Number	Edit
1	

Delete videos: Click  to delete the added videos.

3.1.2 Video Group Settings

Go to Video Settings→Video Group. Then click  to assign channels for the desired group.



Enter the group name, select the dwell time and then check videos. After that, click [OK] to save the settings.

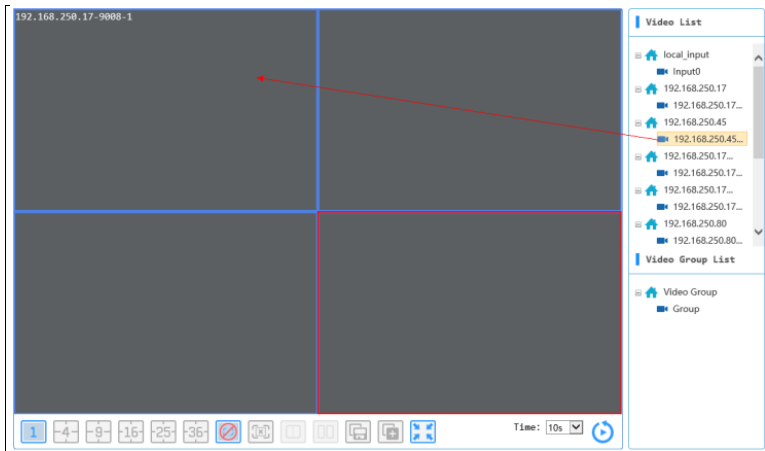
Click  to modify the added group; click  to delete the added group.

3.2 Decoding Settings

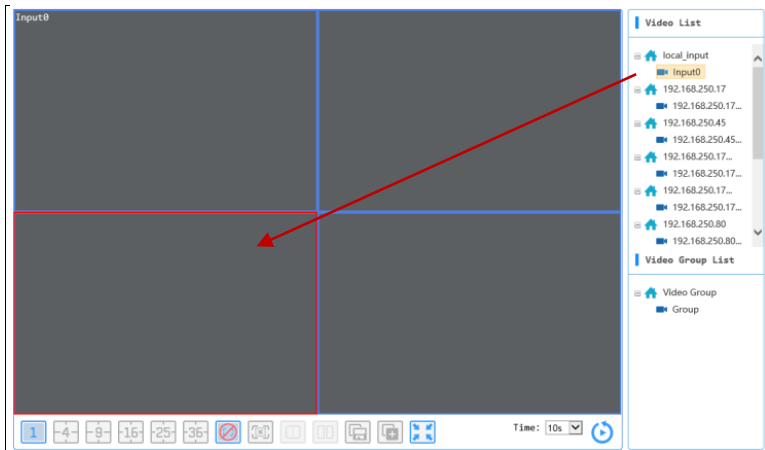
In device running mode, decoding settings can be set. If the decoder is platform running mode, please skip this chapter.

3.2.1 Plan Settings

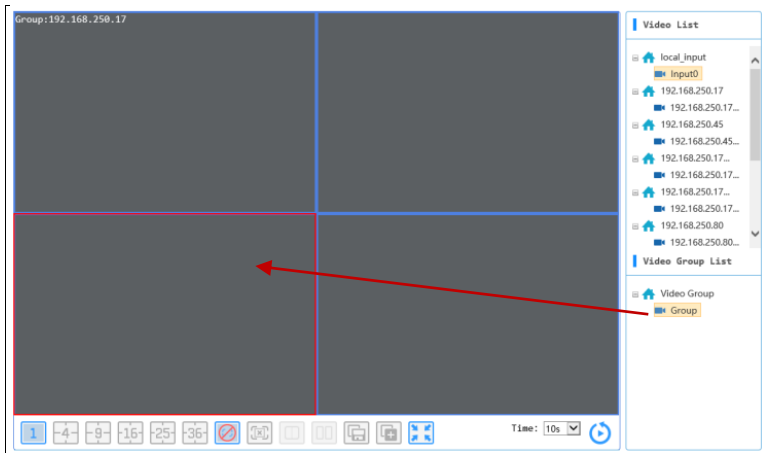
Click Decoding Settings→Plan to go to the plan settings interface as shown below. Set the screen display mode and then drag a video to a window to decode the video.



Local input: Input the video source through HDMI IN interface in the real panel and then drag input-0 to a window to bind the input-0 and the monitor in the plan settings interface as shown below.



Video group view: Drag a video group to a window and then videos in this group will be decoded in this window one by one according to the preset dwell time (See 3.1.2 Video Group Settings for details).



Descriptions of the buttons:

: 1/4/9/16/25/36 screen display mode

: Enable or disable Picture-in-Picture mode

: Clear all video display.

: Merge screens

: Split a screen

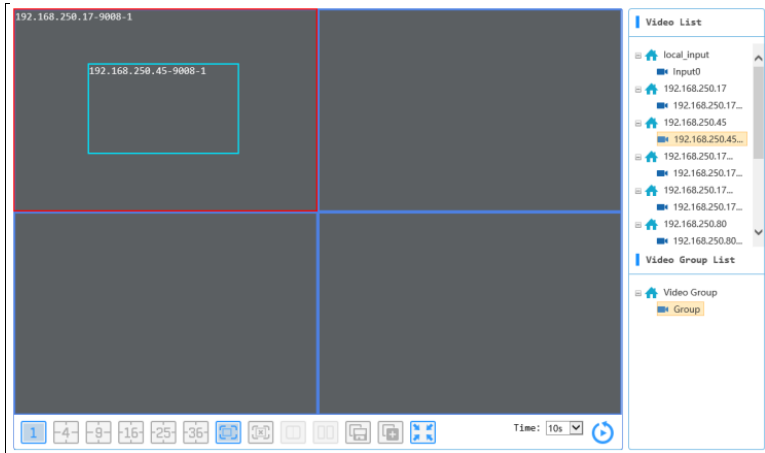
: Save a plan

: Create a plan

: Exit all full screen.

: Start auto-switch.

PIP (Picture-in-Picture): After enabling PIP function, click the left mouse on a window and drag it to draw a rectangle and then release it until the size of the rectangle meets your need. Next, drag the desired video to this rectangular window to decode.



Roaming: Drag the PIP window to anywhere of the current logic output. Then the location of the PIP window will be updated while the decoder is decoding the image of the PIP window on a monitor.

Plan settings: There are two ways to set a plan.

- ① Drag videos to the left windows separately and then click  to save the plan.
- ② Click  to enter the plan name and then drag videos to the left windows separately.

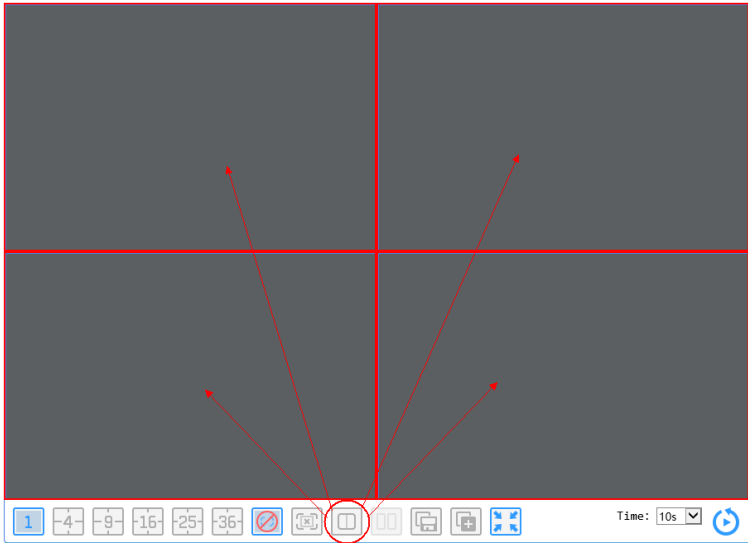
After that, click  to save the plan.

These saved plans will be listed on the plan list as shown below.

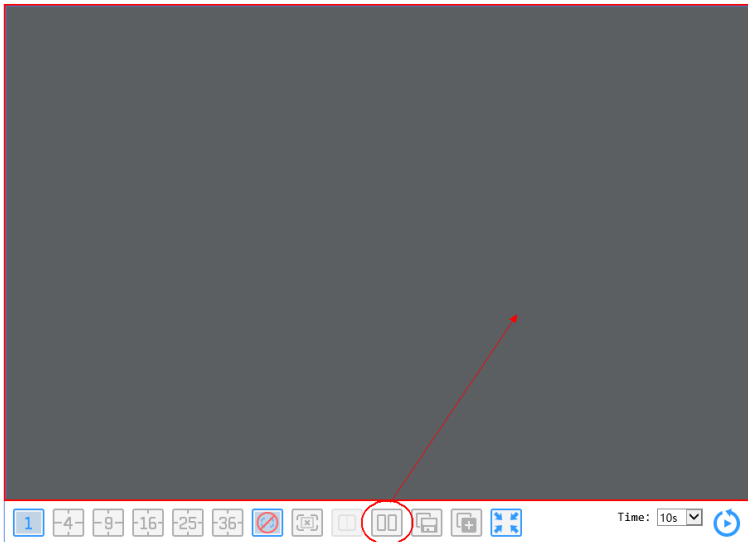


Click a plan to quickly call up this plan. Choose the dwell time and then click  to view these plans in sequence.

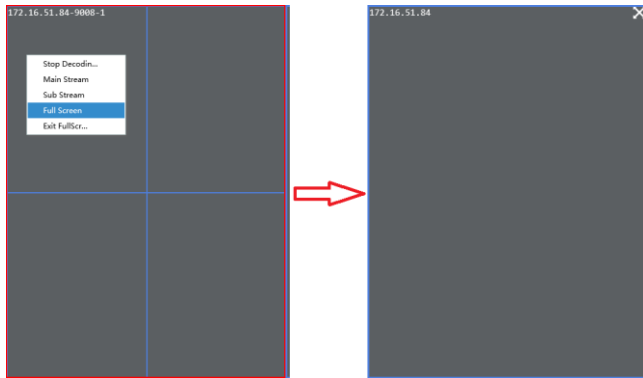
Merge screens: Press Ctrl, select two output screens or four output screens and click  to merge these two or four screens.



Split a merged screen: Select a merged screen and then click  to split this screen.



Full Screen: In multi-display mode, select a window which is decoding video and then right click on it to pop up a menu as shown below. Select “Full Screen” and then this window will display in full screen.



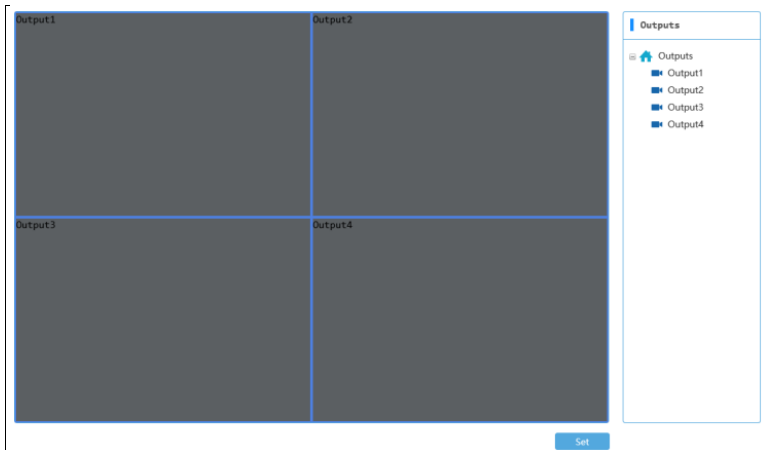
Exit Full Screen: Right click on the full screen to exit full screen mode.

Exit All Full Screen: If there is one or more than one output in full screen mode, click  to make all outputs exit full screen mode.

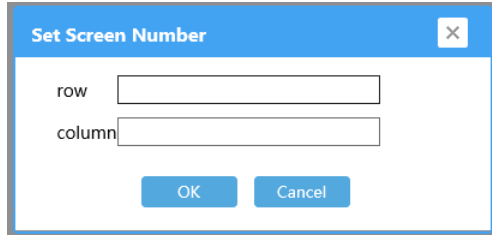
Main Stream/Sub Stream: The main/sub stream can be switched by right clicking on the window which is decoding video.

3.2.2 Output Settings

Go to Output Settings→Output interface as shown below.



Drag the output in the right output list to the window so as to bind the output to the window. If the decoder is set as “Master” in device running mode and many general decoders are added to this decoder, the output list will appear four or more than four outputs. Thus, users need to click “Set” to customize output layout as shown below.



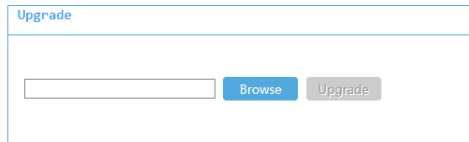
A dialog box titled "Set Screen Number" with a close button (X) in the top right corner. It contains two input fields: "row" and "column". Below the input fields are two buttons: "OK" and "Cancel".

Please enter the number of row and column displayed on the screen. The number ranges from 1 to 10.

3.3 Device Settings

3.3.1 Upgrade Settings

To upgrade the decoder, please go to Device Settings→Upgrade.

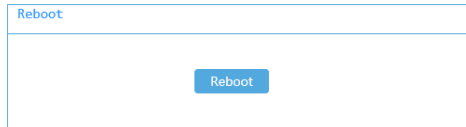


A dialog box titled "Upgrade". It contains a text input field, a "Browse" button, and an "Upgrade" button.

Click [Browse] to select the path of the upgrade files and then click [Upgrade] to upgrade the decoder. Please do not disconnect the device when upgrading. And the device will reboot automatically after finishing upgrading.

3.3.2 Reboot Settings

The device can be restarted manually by clicking Device Settings→Reboot.



A dialog box titled "Reboot". It contains a single "Reboot" button.

3.3.3 Reset Settings

The system can be restored to the default settings by clicking [Reset] in the following interface (Device Settings→Reset).

Reset

Reset

3.3.4 Affiliation Settings

Go to Device Settings→Affiliation.

Searched Decoders						
Refresh						
No.	IP Address	Port	Subnet Mask	Gateway	Version	
1	172.16.50.121	8888	255.255.0.0	172.16.0.1	2.1.0	+
2	172.16.51.107	8888	255.255.0.0	172.16.0.1	2.1.1.beta6	+
3	172.16.51.105	8888	255.255.0.0	172.16.0.1	2.1.1.beta6	+
4	192.168.1.191	8888	255.255.255.0	192.168.1.1	2.1.1.beta2	+
5	172.16.51.239	8888	255.255.0.0	172.16.0.1	2.1.0	+
6	172.16.51.114	8888	255.255.0.0	172.16.0.1	2.1.1.beta6	+
Added Decoders						
Add Add All Delete All						
No.	IP Address	Port	Device ID	Status	Edit	Delete
1	172.16.51.108	8888	1	Online		

Click [Refresh] to automatically search the decoders in the same local network. When the decoder is set as “Master”, other searched decoders set as general decoders can be added into this master decoder and governed by it.

Click “+” to add the decoder. Click “Add All” to add all searched decoders. Click “” to delete the added decoder.

In this interface, you can view the status of the added decoder, including “online”, “offline”, etc.

Note: ① The added general decoders cannot add other general decoders.

② The master decoder cannot be added to other master decoders.

③ The added general decoder which is working cannot be added to other master decoders.

3.4 System Settings

3.4.1 Basic Settings

In the basic settings interface, the running mode and user permission can be set up. Device information can be viewed here too, like MAC address, device type, software version and so on. Go to System Settings→Basic.

Basic Settings	
Running Mode	Device
User Permission	Master
Device Name	Decoder
MAC	00:18:AE:00:45:E0
Soft Version	2.1.1.6
Version Date	20190724
Kernel Version	J7F6-I9F6-I9F6
Apply	

Running Mode: Device mode and platform mode are selectable. The default running mode is platform mode. To switch the running mode to device, select “Device” and click [Apply]. Then the running mode will be switched successfully after reboot.

In device mode, video and decoding settings can be configured.

User Permission: If “General” is selected, the running mode cannot be changed.

3.4.2 Display Settings

The resolution and video format of monitors can be set up by choosing Display settings→Display.

Display	
Monitor 1 Resolution	1920x1080
Monitor 2 Resolution	1920x1080
Monitor 3 Resolution	1920x1080
Monitor 4 Resolution	1920x1080
Video Format	PAL
Apply	

Window Settings	
DrawBorder	off
ShowWindowID	off
Apply	

Draw Border: If “ON” is selected, a red box will flash on the window once triggering alarms in platform running mode.

Show Window ID: If “ON” is selected, the window ID will appear on the decoding window in platform running mode.

3.4.3 Time Settings

Go to System Settings→ Time. In this interface, time zone and the system time can be set up.

Date And Time	
Time Zone	GMT Dublin, Lisbon, London, ▼
System Time	2018-04-15 18:10:23
Apply	

3.4.4 Network Settings

Click System Settings→Network to go to the network settings interface as shown below.

Network Settings	
IP Address	172.16.50.225
Subnet Mask	255.255.0.0
Gateway	172.16.1.254
Apply	

Port Settings	
Data Port	8888
HTTP Port	80
Apply	

IP Address: In device mode, this IP address must be in the same local network segment as the IP address of the computer used to log in the web client.

Subnet Mask: The default value is 255.255.255.0.

Gateway: In device mode, it must be the same with the gateway of the computer used to log in the web client.

Data Port: The default number is 8888. This port shall be used when you want to add this device to a surveillance platform (like CMS/NVMS).

HTTP Port: The default number is 80. It is recommended to change (for example: 81). This port is used to log in the Web client (for example: <http://192.168.1.201:81>).

3.4.5 User Settings

Click System Settings→ User to enter user settings menu.

User Settings	
Username	admin
Current Password	
New Password	
Confirm New Password	
Apply	

Username: The default username is “admin”.

Current Password: The default password is “123456”.

It is necessary for you to set your new password here if this is your first login and then confirm and apply it. Next time, you can use your new password to log in.

3.4.6 Backup Settings

Go to System Settings→Backup.

BackUp	
Path	Browse Recover
Path	Browse Backup

Export Settings: Click [Browse] to select the path of the files you want to export and then click [Export].

Import Settings: Click [Import] to select the path of the files you want to import and then click [Import].

3.4.7 Alarm Settings

Go to System Settings→Alarm.

Alarm In			
Name	Enable	Holding Time	Trigger Alarm Out
AlarmIn1	off	1 Second	Config
AlarmIn2	off	1 Second	Config
AlarmIn3	off	1 Second	Config
AlarmIn4	off	1 Second	Config
AlarmIn5	off	1 Second	Config

Alarm Out	
Name	Holding Time
AlarmOut1	1 Second
AlarmOut2	1 Second
AlarmOut3	1 Second
AlarmOut4	1 Second
AlarmOut5	1 Second

Alarm Input Setting:

- ① Enable an alarm input, set holding time and check “Config” to select the linkage output.

Trigger Alarm Out
✕

Selectable Alarm Out

☐ AlarmOut1

☐ AlarmOut2

☐ AlarmOut3

☐ AlarmOut4

☐ AlarmOut5

☐ AlarmOut6

☐ AlarmOut7

☐ AlarmOut8

Selected Alarm Out

- ② Check the desired output and click to add. Then click “OK” to save the settings.
- ③ Click “Apply” to save the settings.

Alarm Output Setting: Select the holding time of the alarm output. Then click “Apply” to save the settings.

4 Platform Running Mode

When a surveillance platform (like CMS/NVMS) is used to manage your decoder, you shall change the running mode of the decoder to Platform mode. Go to System Settings→Basic.

Basic Settings	
Running Mode	Platform ▼
User Permission	Master ▼
Device Name	Decoder
MAC	00:18:AE:00:45:E0
Soft Version	2.1.1.6
Version Date	20190724
Kernel Version	J7F6-I9F6-I9F6
Apply	

Change the running mode to Platform mode in the above interface and then click [Apply] to save the setting. Then the running mode will be switched successfully after reboot.

User Permission: Master and general are optional.

Master: In platform mode, the master decoder can be connected to a surveillance platform via network and it can also manage general decoders.

Note: A maximum of 63 general decoders can be added to a master decoder.

General: In platform mode, the general decoder cannot be directly added into a surveillance platform. It only can be added into a master decoder.

4.1 Affiliation Settings

Go to Device Settings→Affiliation. The setting steps are the same as the affiliation settings of device running mode.

4.2 Network Settings

Go to System Settings→Network.

Network Settings	
IP Address	172.16.50.225
Subnet Mask	255.255.0.0
Gateway	172.16.1.254
Apply	

Port Settings	
Data Port	8888
HTTP Port	80
Apply	

IP Address: In platform mode, this IP address must be in the same local network segment as the authentication server's (the authentication server is a part of NVMS).

Subnet Mask: The default setting is 255.255.255.0.

Gateway: In platform mode, it must be the same as the authentication server's.

Data Port: The default number is 8888. This port shall be used when you want to add this device to a surveillance platform (like CMS/NVMS).

HTTP Port: The default number is 80. It is recommended to change (for example: 81). This port is used to log in Web client (for example: <http://192.168.1.201:81>).

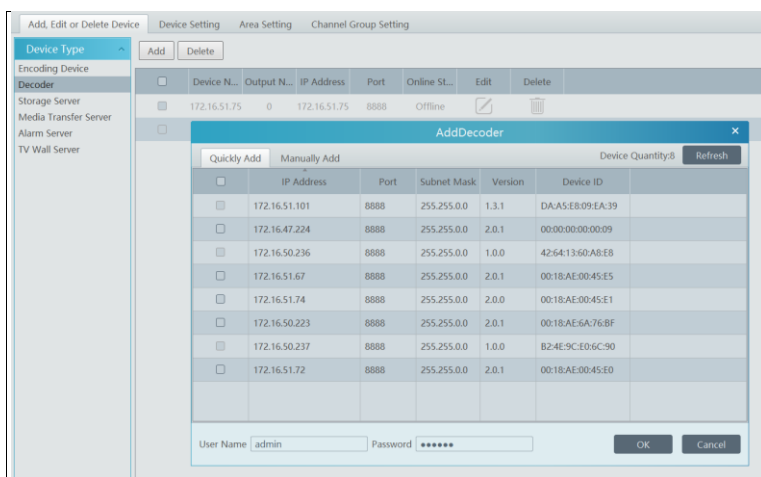
4.3 Other Settings

In platform mode, the operations of upgrade, reboot, restoration, basic settings, time settings, user settings, alarm settings and backup are the same as the operations of the above-mentioned items in device mode. Please see the relevant chapter for details.

4.4 Connect to Platform

Only when the decoder is set to platform running mode and master user permission, can it be connected by a surveillance platform. Here we will introduce how to connect to NVMS as an example.

① Log in the monitor client of the platform system and then go to the “Add, Edit or Delete Device” interface to add decoders as shown below.



- ② In the above interface, select “Decoder” and then click [Add] to add decoders.
- ③ Click [Refresh] to quickly search devices in the same local network. Check the device, enter the username and password of it and allocate the transfer server, storage server, area for it.
- ④ Click [OK] to save the settings.
- ⑤ Check the connection status of the decoder. If the decoder is added successfully, the online status will appear. Then the output can be configured by means of TV wall management system of the NVMS (see NVMS user manual for more details).

5 Specifications

OS	Embedded Linux
Compression Format	H.265 HP/MP/BP、H.264 HP/MP/BP
Video Input	HDMI×1: 1920×1080 / 1600×1200/1680×1050/1440×900/1400×1050/1366×768/ 1280 ×1024/1280×960/1280×800/1280×720/1152×864/1024×768/800×600
Video Output	HDMI×4: 3840×2160(odd number ports supported) /1920×1080/1280×1024 VGA×4: 1920×1080/1280×1024 BNC×4: CVBS output
Frame Rate	1-50FPS/CH (PAL),1-60FPS/CH (NTSC)
Decoding Resolution	8MP, 5MP, 4MP, 3MP, 1080P, 960P, 720P, WD1, D1, CIF
Decoding Capability	8CH 8MP@30fps or 16 CH 4MP@30fps or 32CH or 1080P@30fps or 64CH 720P@30fps
Screen display mode	1/4/9/16/25/36
Screen Splicing mode	1×2, 2×1, 2×2
Audio output	RCA×4
Talkback	Audio input ×1, audio output×1, 3.5mm audio interface (2.0Vp-p, 1KΩ)
Network interface	Gigabit Ethernet port ×2, load balancing and hot standby
Alarm interface	Alarm input ×8; alarm output ×8
Serial Ports	RS485×1, RS232×1
USB interface	USB3.0×1, USB2.0×1
Power Supply	DC12V
Power Consumption	40W
Dimensions (mm)	380 (W) × 268 (D) × 45 (H)
Weight	2 KG
Working Environment	Temperature: -20℃~50℃; RH Humidity: 5%~95% (non-condensing)