4CH AHD Digital Video Recorder kit

with 4x 720P outdoor fixed Lens cameras

User Manual

DN-16120

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SAFETY INSTRUCTION

Please carefully read the following safety instruction so as to avoid personal injuries and prevent the equipment and other connection devices from being damaged.

1. **Power sources (note: please use the power supply attached or specified by the manufacturer)** Never operate the equipment by using unspecified power supply.
2. **Never push objects of any kind through openings of DVR**
   Never push objects of any kind through openings of DVR so as to avoid electric shock or other accidents.
3. **Do not put the equipment in the dusty field**
   Do not put the equipment in the dusty field.
4. **Do not place the equipment under rain or humid environment**
   Do not place the equipment under humid environment like basement. If the equipment is accidentally in contact with water, please unplug the power cable and immediately contact your local dealer.
5. **Keep the surface of the equipment clean and dry**
   Use soft damp cloth to clean the outer case of DVR (do not use liquid aerosol cleaners)
6. **Do not operate if any problems are found**
   If there is any strange smell or sound from DVR, unplug the power cable and contact the authorized dealer or service center.
7. **Do not try to remove the upper cover**
   Warning: Do not remove the cap of DVR so as to avoid electric shock.
8. **Handle with care**
   If DVR does not work normally because of hitting on the hard object, please contact the authorized dealer for repair or replacement.
9. **Use standard lithium battery**
   (Note: Use the batteries attached or specified by the manufacturer)
   After cutting off the power supply, if the system clock cannot continue to work, please replace the standard 3V lithium battery on the main board.
   Warning: Turn off DVR before replacing the batteries, or you may be suffered from serious electric shock. Please properly dispose of the used batteries.
10. **Put the equipment in a place with good ventilation**
    The DVR system includes HDD, which produces large amount of heat during operation. As a result, do not block the ventilation openings (on the top, bottom, both sides and the reverse side) for cooling the system during operation. Install or put the equipment in the place with good ventilation.
11. **The attached power adapter can only be used for 1 set of DVR. Do not connect more equipment, or DVR may be restarted repeatedly because of insufficient power**
12. **Prevent the equipment from water dropping or splashing. Do not place objects containing water, such as flower vase, on the equipment**

Chapter 1 Functional Descriptions and Features

Function	Brief Description
Real time monitoring	Support output by monitor, VGA and HDMI, support real-time monitoring by web application manager and mobile phone, and support electronic amplifier, multi-screen sequence and PIP display.
Recording	Support video compression standard of H.264. The video quality, resolution of each channel and video frame rate are adjustable. Support many recording modes, such as start-up recording, timing recording, manual recording, alarm recording, motion detection recording, remote recording, etc.
Record storage	Support high capacity HDD with SATA port. The records can be stored immediately in HDD.
Record playback	Support single-channel or multi-channel search and playback by DVR or network.
Record backup	Backup records from DVR to U flash disk, mobile HDD and disk burner; or from network to HDD.
Alarm setting	Support alarm management of HDD and video input and the signal input from external alarm apparatus.
Network operation	Support authorized accessing of remote client to ensure the system security.
Mouse operation	Support USB mouse operation to set system parameters conveniently and efficiently.
PTZ control	Support PTZ decoder communicated through RS485. It can expand two kinds of decoding protocol to realize PTZ and dome camera control. Support PTZ preset auto cruise function.

Table 1-1

Features:

- H.264 video compression format;
- G.711 audio compression format;
- Windows style graphic user interface and embedded real-time Linux 2.6 operation system;
- Full real-time six functions (preview, recording, playback, backup, network monitoring, and mobile phone monitoring);
- Supports dual-stream network transmission;
- Support smart phone video monitoring via APP.
- Support channel sequence display;
- Video packaging time is adjustable;
- Multiple alarm modes;
- USB2.0 port, support backup, software upgrading and mouse operation
- Support infra-red remote control;
- Support multi-language;

Chapter 2 Overview of DVR

2.1 Front Panel

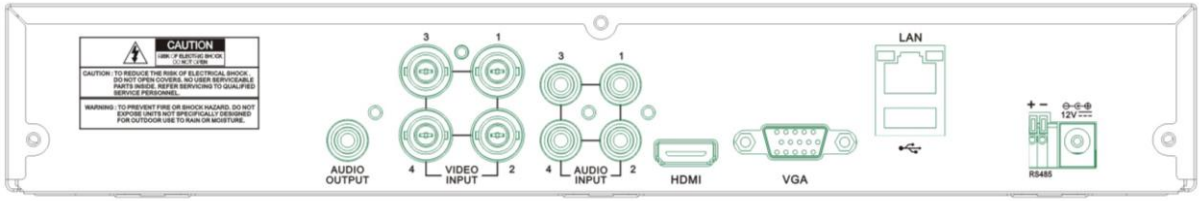
P.S: DVR is short for Digital Video Recorder Equipment.

2.1.1 Front panel of DVR with 4 channels

No.	Key or indicator	Identification	Functions
1	Power Indicator	PWR	If the “Green” indicator is on, DVR is getting power normally.
2	IR Receiver	●	Receive IR signal from Remote Controller.
3	HDD Indicator	HDD	If the “Red” indicator flashes, the hard drive is being read or written to.
4	Channel select: CH1 CH2 CH3 CH4	▦ ▦ ▦ ▦	Single channel selection(4-Channel DVR)
5	REW	◀◀	Move to left; Rewind function; Decrease PTZ rotation speed and parameter value of graphic setting
6	PAUSE	II	Pause / play frame by frame manually
7	PLAY	▶	Enter into Record Search menu and play.
8	FWD	▶▶	Right key; Fast forward; Increase PTZ rotation speed and parameter value of graphics.
9	STOP/REC	■	Stop playing or start/stop manual recording
10	MENU/ESC	◀	Enter into Main menu, exit or stop playing
11	Up key	▲	Move up
12	Down key	▼	Move down
13	PTZ	PTZ	Enter into PTZ control interface
14	USB	USB	Connect with USB devices such as mouse or USB storage

2.2 Rear Panel

2.2.1 Rear panel for DVR with 4 channel



No.	Physical Interface	Connection
1	Video input	Connect with CH1-4 (analog) video input device, standard BNC port
2	Audio input	Connect with CH1-4 audio input signals, RCA port
3	Audio output	Audio signal output, RCA port
4	USB port	Connect with U flash disk, disk burner, and other USB storage devices
5	VGA port*	Connect with VGA display devices, such as PC monitor
6	HDMI port*	Connect with HDMI display devices such as PC or TV monitor.
8	RS-485**	RS485 for PTZ camera
9	Power port	Connect with the power supply DC12V input
10	LAN: Network port	Connect with LAN cable to enable DVR to connect to Internet.

* VGA and HDMI output ports cannot be both used in parallel together. You can either use VGA or HDMI as video output.

** PTZ port: Check your purchased PTZ and connect to the two ports (+ -) marked with RS 485.

Chapter 3 DVR Connection

3.1 HDD Installation

Caution: Please do not take out hard drive when DVR is running!

HDD Installation:

(1) Cut power firstly, and then remove screws on both sides and rear panel and open DVR upper cover.

(2) Connect HDD data line and power line to the main board. Install the HDD to fix it on the bracket and then connect the HDD power line and data line.

(3) Put the upper cover back carefully

Note: If user requires higher performance HDD, it is strongly recommended to use special hard drive for security and protection.

3.2 IP Camera and Monitor Connection

DVR video output signals are transmitted to VGA monitor or HDMI monitor by VGA or HDMI cable

and DVR video can be monitored (Refer to section 1.2 Rear Panel). Refer to Chapter 6 System Connection Diagram.

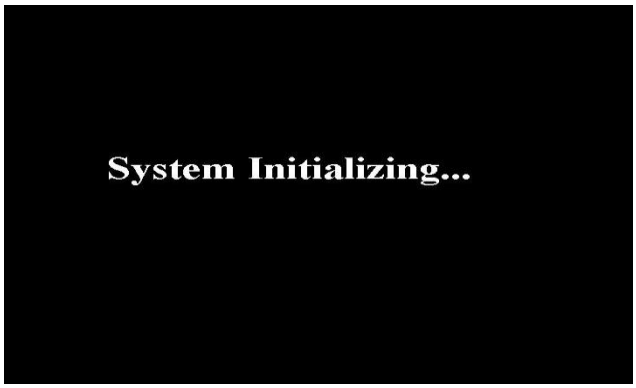
3.3 Power Supply Connection

Please use attached power adapter to connect DVR. Before power on, make sure the cables on the audio and video I/O ports and network port are well connected. For audio ports, please use microphone and other audio devices together with BNC connecting line to input or output audio signals.

Chapter 4 DVR Boot up

4.1 System Initialization

After connecting the power cable of DVR to wall outlet and pressing the power button, you will enter into the DVR system initializing screen shown as Picture 4-1.



Picture 4-1

Note：The illustration in the user manual may not be the same as the menu interface in your monitor. All the illustrations are only for users' reference.

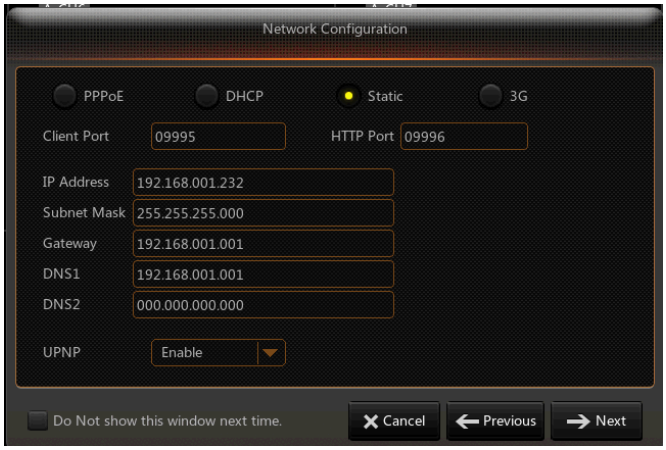
4.2 Startup Wizzard

After DVR startup is completed, the startup wizard will be displayed. If you do not want to make any setting, you may click "Don't show this window next time" to cancel, as shown in Picture 4-2.

Wizard setting menu includes: Homepage, Network setup, Record Schedule and HDD.

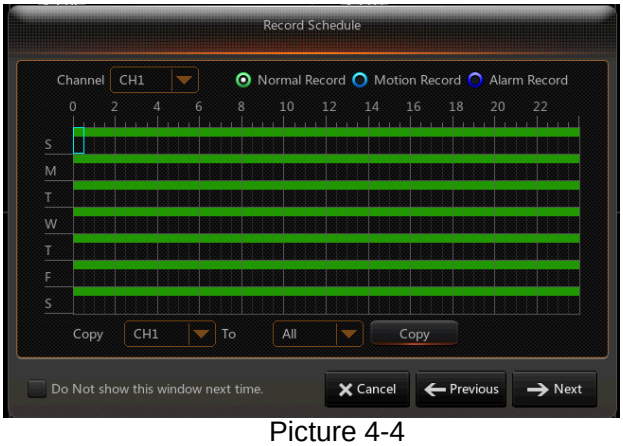
1. Homepage and network setup. In network setup page, user may set the network environment of DVR, as shown in Picture 4-3

Picture 4-2



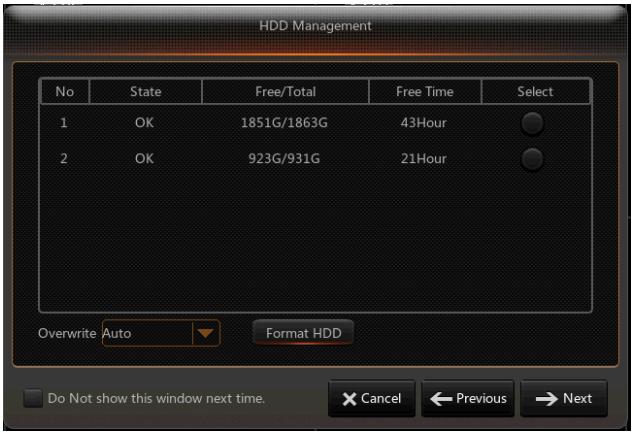
Picture 4-3

2. Record Schedule (Picture 4-4). It can set recording time and scheduled recording of DVR.



Picture 4-4

3. HDD Management (Picture 4-5). It supports HDD format and overwrite type.



Picture 4-5

4.3 Main Interface

Picture 4-6

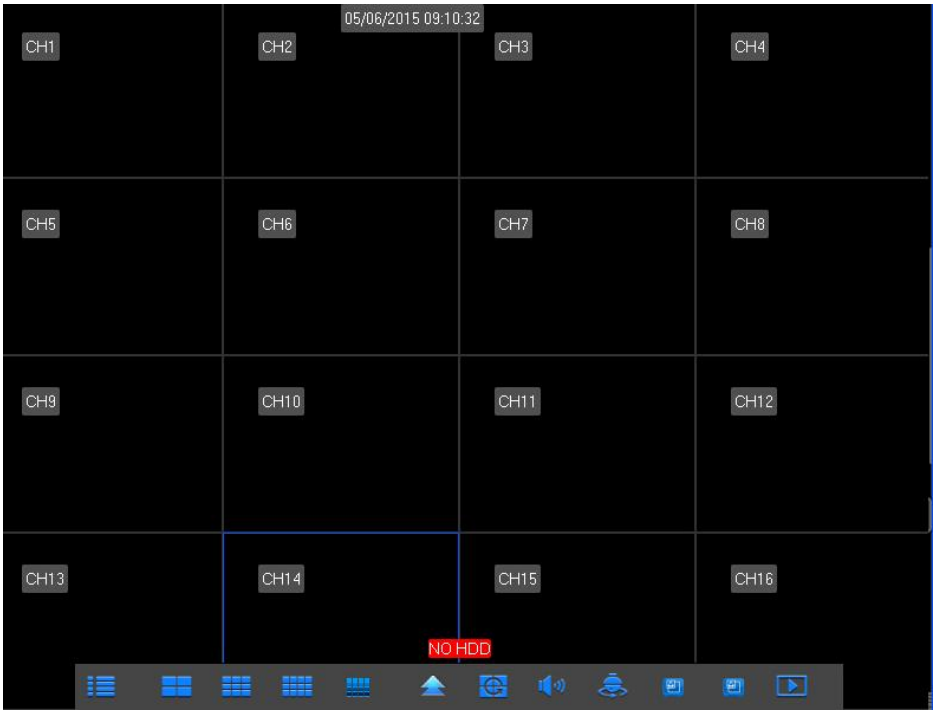
Note: When internal HDD is not connected to DVR, the character “H” will appear on the lower part of the main interface and accompany buzzer alarm. If you want to disable the buzzer alarm, please enter into [Event→Alarm] to disable HDD loss alarm, HDD space insufficiency alarm and set alarm output to “off”.

Chapter 5 DVR Menu

Popup Menu

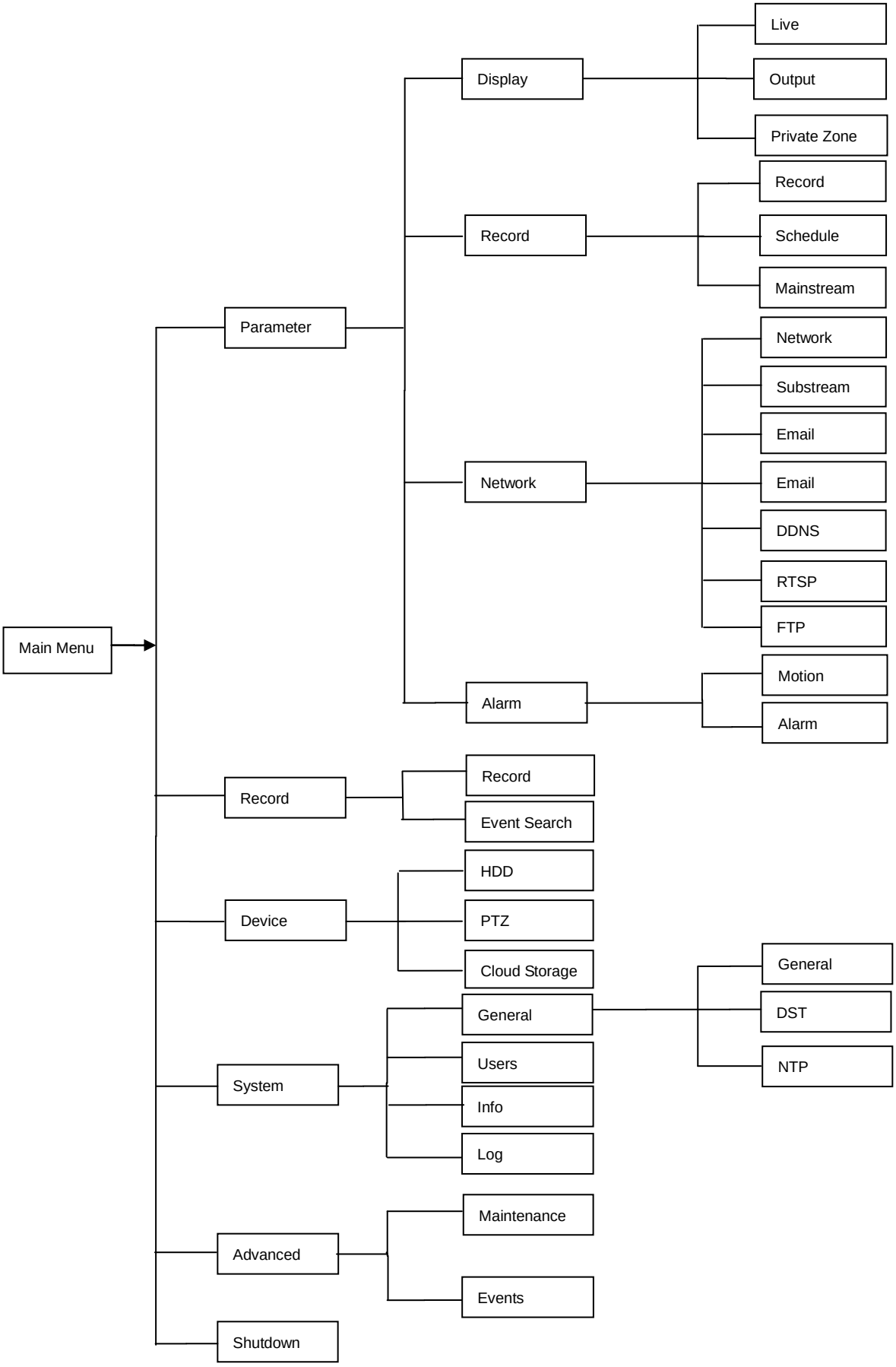
After finishing system initialization, click right key of mouse on preview interface or slide the mouse to the bottom of screen to enter into Pop-up Menu. Now you could perform parameter setting and operate on Main Menu, Multi-screen, Auto Cruise, Record Search, Sequence, Volume setting and Brightness setting, shown as Picture 5-1.

The options in the pop-up menu may be varied slightly according to different parameter settings and application environment. The options in the menu will be explained in detail in the following chapters.

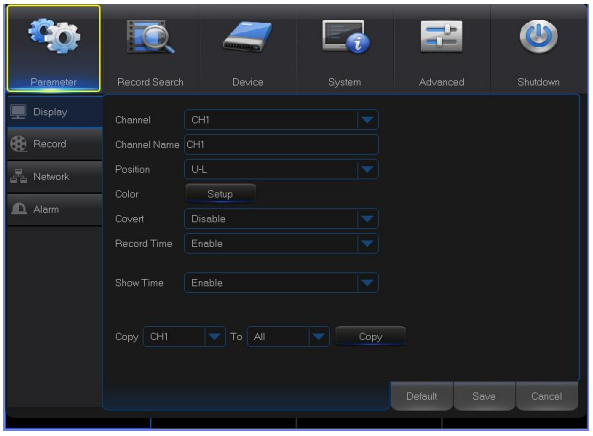


Picture 5-1

5.1 Main Menu Guide



5.2 Main Menu



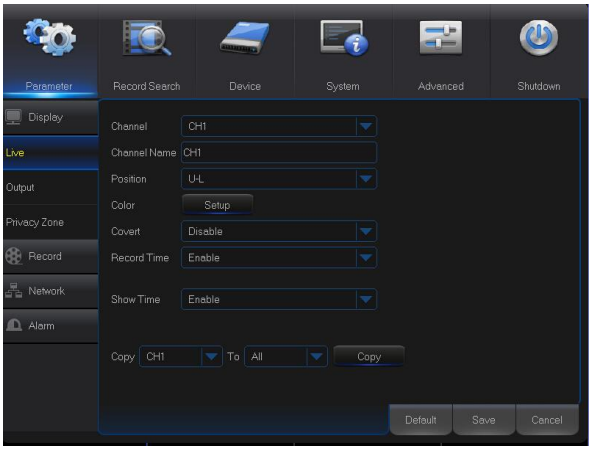
Picture 5-2

On LIVE mode, click the mouse button, or [Menu] button on the remote controller, or click [ ] icon on the toolbar to enter the main menu screen, as shown in Picture 5-2. If system interface is locked, refer to section 4.3 to unlock by inputting password.
In Main Menu mode, you can make settings for Parameter, Record Search, Device, System, Advanced and Shutdown.

5.2.1 Parameter

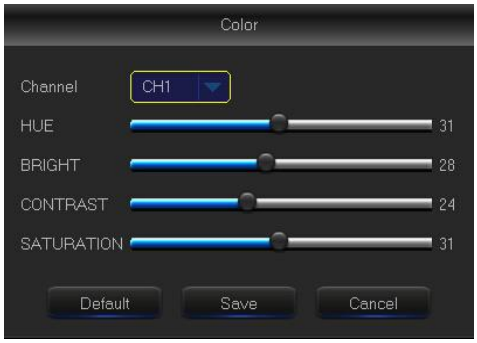
1. Live

Go to “Main Menu” → “Parameter” → “Display” → “Live” to enter into the interface shown as Picture 5-3.



Picture 5-3

- **Channel:** Select the channel in the drop-down list.
- **Channel Name:** Channel name, support up to 8 characters or 4 Chinese characters.
- **Position:** Set the position for the channel display
- **Color:** Click “Setup” to enter into the color setting page (Picture 5-4)
- **Image hiding:** Enable or disable the channel real-time monitoring
- **Show Time:** Enable or disable the system time display in the live interface.
- **Copy:** Copy the parameters in the channel to any other channel or all channels.
- **Record Time:** Enable or disable displaying system time in recording.
- Copy: Copy the setting parameter of a channel to another channel.



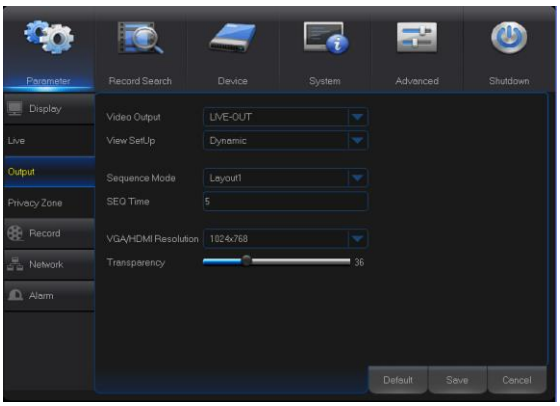
Picture 5-4

Adjust the brightness, hue, contrast and saturation of the image in selected channel in “Live” interface.

Note: To modify the parameter value in sub-menu and make it effective, click “**Save**” after modification and a dialog box with message “parameters have been successfully saved” will pop up. Click “OK” in the interface and click “**Exit**” to exit the menu. If you want to cancel the modification, click “Cancel” to exit.

2. Output

Go to “Main Menu”→ “Parameter”→ “Display”→ “Output” to enter into the interface shown as Picture 5-5.



Picture 5-5

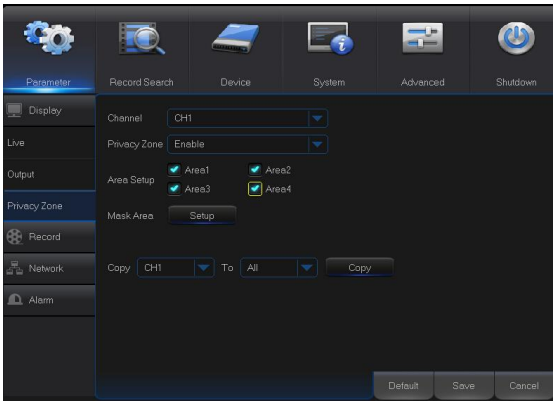
- **Video Output:** Live Output
- **Sequence Mode:** Set sequence mode
- **SEQ Time:** Sequence time is set 5 seconds by default. User may set it as required
- **VGA/HDMI Resolution:** For VGA output or HDMI output, the optional resolution include 800×600, 1024×768, 1280×1024, 1440×900, 1280×720, 1920×1080
- **Transparency:** Adjust menu transparency in the range of 0--128.

3. Private Zone

Go to “Main Menu” → “Parameter” → “Display” → “Private Zone” to enter into the interface shown as in Picture 5-6.

Privacy Zone is for setting some invisible parts in the selected channel, as shown in Picture 5-6 and Picture 5-7.

1. Select the number of the zone to be set (maximum 4 zones can be set for single channel)
2. Click “Setup” to adjust the position of the zone.
3. After finish setting, right click the mouse to return to the **“Privacy Zone”** page.
4. Click “Save” to save the setting.

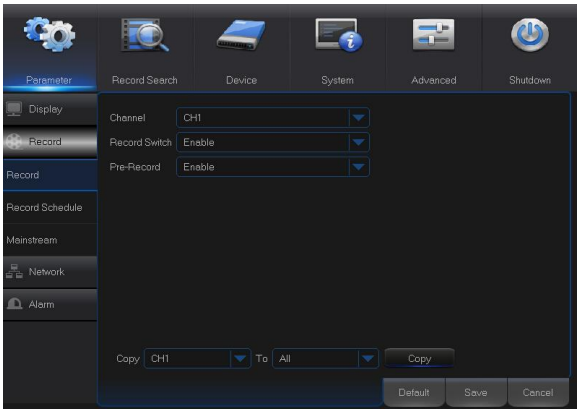


Picture 5-6

Picture 5-7

4. Record

Go to “Main Menu” → “Parameter” → “Record” → “Record” to enter into the interface shown as Picture 5-8.

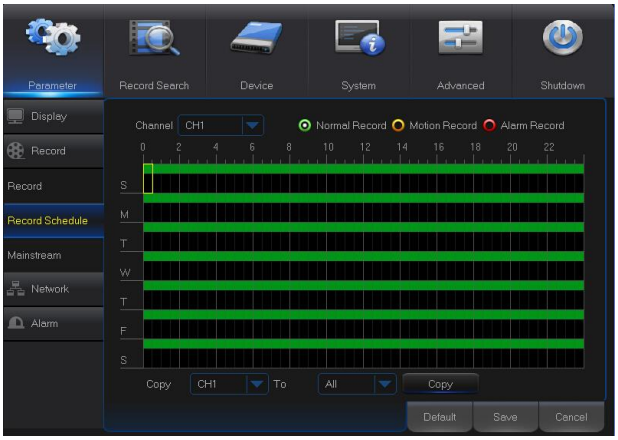


Picture 5-8

- **Channel:** Set the desired channel in the drop-down menu
- **Record Switch:** Enable/disable record
- **Pre Record:** Enable to pre-record motion detection or I/O trigger record.

5. Record Schedule

Go to “Main Menu” → “Parameter” → “Record” → “Record Schedule” to enter into the Record Schedule interface to make record schedule for DVR, as shown in Picture 5-9.



Picture 5-9

Select the channel and the date to be set. One week’s schedule can be set.
The record schedule of the current channel can be copied to any other channel or all channels.

Note:

1. In the Record menu and Record Search menu, No Color stands for no record;
2. “Green” stands for normal record and “yellow” stands for motion record
3. “Red” stands for alarm record,

6. Mainstream

Go to “Menu” → “Parameter” → “Record” → “Mainstream” to enter into the menu interface, as shown in Picture 5-10.

Picture 5-10

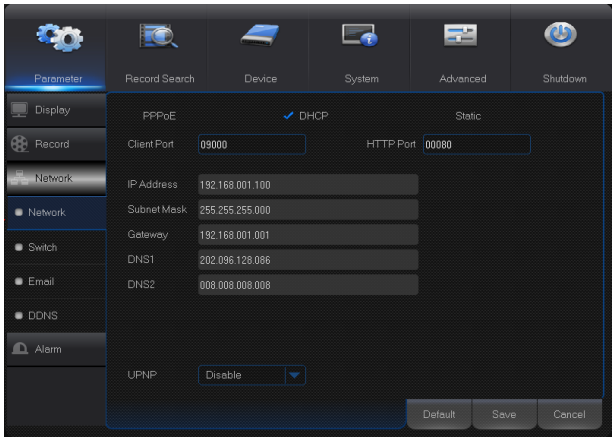
“Main Menu”→ “Record” → “Mainstream”

- **Mode: Support** 960H and D1. Select a resolution, save and exit main menu. Then the system will automatically restart to take effect.
- **Resolution (960H):** Support three kinds of picture quality**:** WD1, WHD1, WCIF.
- **Resolution (D1):** Support three kinds of picture quality**:** D1, HD1, CIF.
- **Note: In** AHD series, the supported record resolution includes 960H/720P/1080P； In TVI series, the supported record resolution includes 720P/1080P.
- **FPS：** PAL: 1--25f/s; NTSC: 1--30f/s.
- **Bitrate:** Bitrate for local storage. User may select in the drop down list.
- **Audio:** Check the box to record channel audio during recording and there will be audio output during playing record. Un-check the box to disable recording audio and there will be no audio output during playing the record

7. Network

Go to “Main Menu” → “Parameter” → “Network” → “Network” to enter the interface shown as Picture 5-11.

Select a kind of network connection (PPPOE, DHCP, Static) and set Port, and user may remotely control the monitoring, recording, playback or backup of DVR through network



Picture 5-11

Take DHCP as an example. In this mode, the router automatically assigns IP address for DVR. After restarting DVR or DHCP server, the IP address obtained by DVR may be different. As a result, user shall check IP address and port number for each remote access of DVR. The operation procedure is as follows:

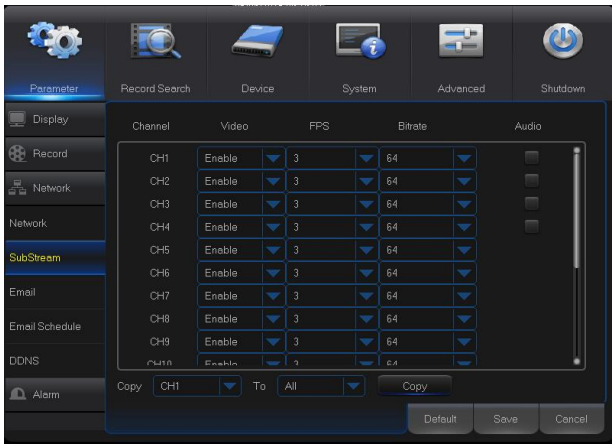
1. Select DHCP, click Save and refresh DVR. Input Client Port and HTTP Port (the two values must not be the same).
2. Set obtained IP address of DVR and the mapping port. Refer to section 4.2.4.2.
3. Remotely visit DVR by IP address: http://Public network IP: Web port number (such as 00080)
   http:// Intranet IP: Web port number (such as 00080) (Only available in the same LAN)

For PPPoe, Static and DHCP, after setting IP address of DVR, the extranet port shall be mapped on the router before visiting DVR through public network.

Note: Save after setting to make effective. If there are multiple DVRs in a LAN, make sure their MAC addresses are different (Refer to System).

8. Substream

Go to “Main Menu” → “Parameter” → “Network” → “Substream” to enter into the interface shown as Picture 5-12.

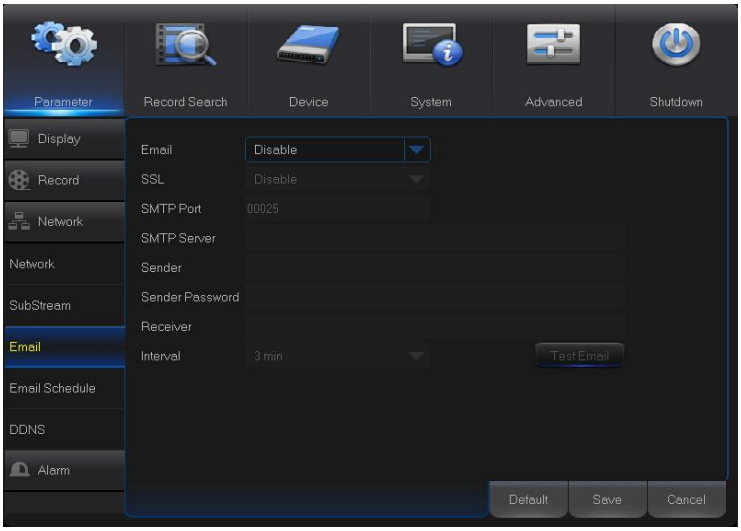


Picture 5-12

- **Video:** Substream switch. Select Enable to preview the substream in the client, so as to ensure smooth playing; If Disable is selected, the client can only choose mainstream preview.
- **FPS:** FPS for network transmission. User may select value in the drop-down list.
- **Bitrate:** Bitrate for network transmission. User may select value in the drop-down list.
- **Audio:** Click √ and audio will play during network transmission.
- Synchronous transmission.

9. E-mail

Go to “Main Menu” → “Parameter” → “Network” → “Email” to enter into the menu interface. Receive or Send DVR alarm Email and set parameters like Email address, SSL, Email Enable, Interval and Email Schedule. The related parameter setting should be consistent with DVR local setting. Refer to Picture 5-13.



Picture 5-13

10. E-mail Schedule

Go to “Main Menu” → “Parameter” → “Network” → “E-mail Schedule” to make Email schedule, as shown in Picture 5-14.

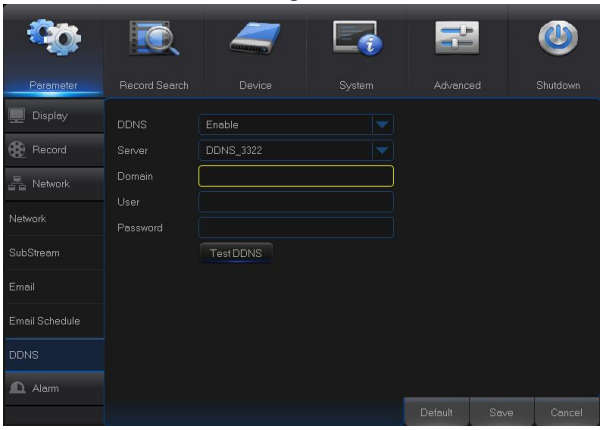
Select the channel and the date to be set. One week’s schedule can be set.
The record schedule of the current channel can be copied to any other channel or all channels.
Note:

1. Green stands for Motion: Email will be sent in case of object motion;
2. Yellow stands for Alarm: Email will be sent in case of IO alarm;
3. Red stands for Exception: Email will be sent in case of exception, e.g. HDD full, HDD damage, Video loss, etc.

Picture 5-14

11. DDNS

Go to “Main Menu” → “Parameter” → “Network” → “DDNS” to enter into the menu interface. User may set DDNS in any one of the above 3 network connection types after applying dynamic domain service. User may remotely access DVR through domain by using browser in the form of http://applied domain: mapped Web port number. When using DDNS domain name to access DVR, user shall confirm that the port can be normally connected to current IP on the public network and the settings for server address/host name/user/password/setting should be consistent with DVR local setting. See Picture 5-15.

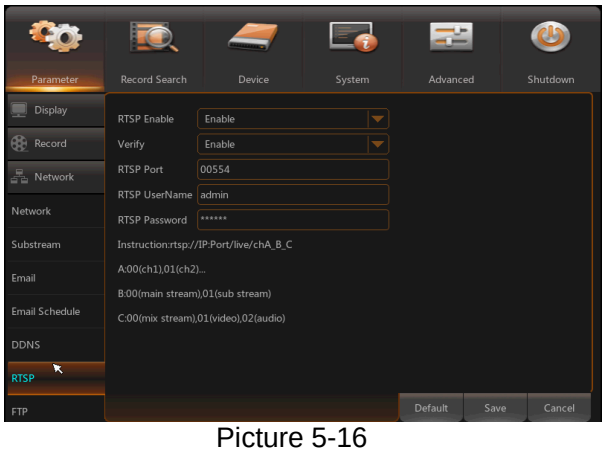


Picture 5-15

12. RTSP

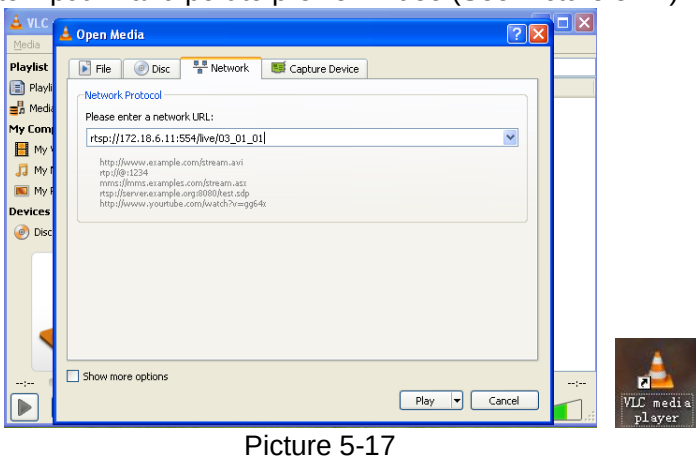
Go to “Main Menu” → “Parameter” → “Network” → “RTSP”

Set User Name and Password to view video by PC software VLC (See Picture 5-16)



Picture 5-16

Follow the instruction to input IP and port to preview video (See Picture 5-17)

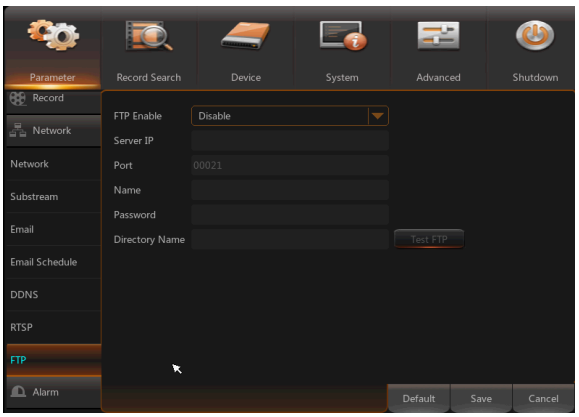


Picture 5-17

13. FTP

Go to “Main Menu” → “Parameter” → “Network” → “FTP”

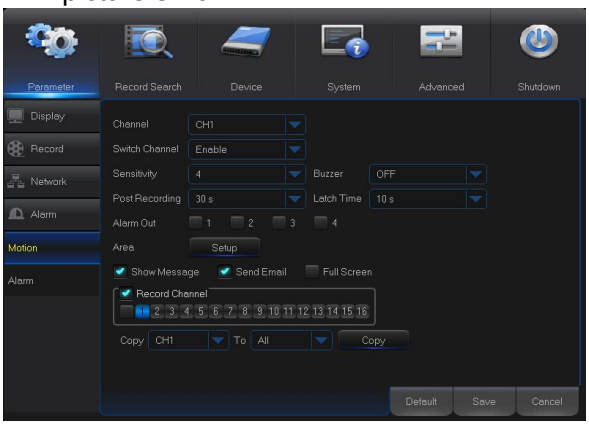
Set IP, User Name and Password to view the captured pictures in the server (See Picture 5-18).



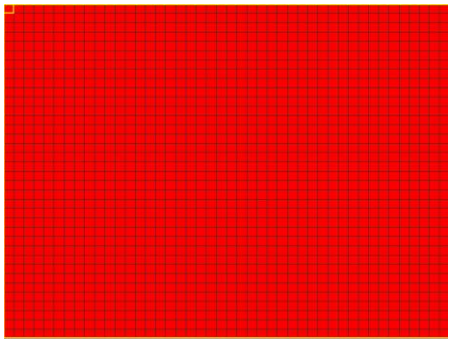
Picture 5-18

14. Motion

Go to “Main Menu” → “Parameter” → “Alarm” → “Motion” to enter into the interface shown as picture 5-20



Picture 5-20



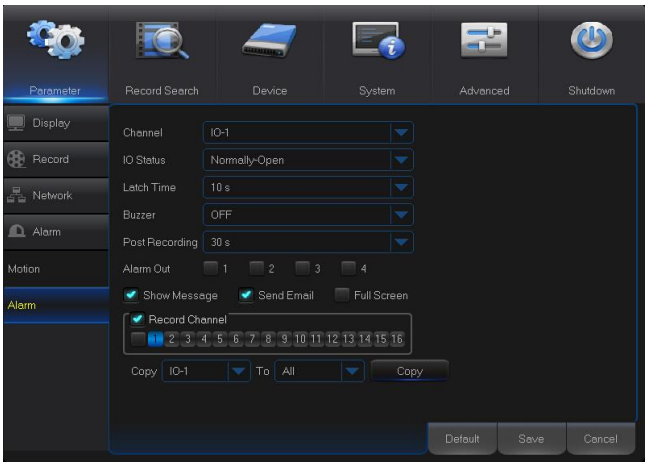
Picture 5-21

- **Channel:** Enable or disable Motion function.
- **Sensitivity:** Support 1-8 level, 8 is the highest level.
- **Buzzer:** When detecting object moving, buzzer makes alarms (disable, 10 seconds, 20 seconds, 40 seconds and 60 seconds).
- **Alarm Out:** Connect to the alarm switch of the alarm apparatus.
- **Show Message:** Messages will be displayed on the screen when moving object is detected and alarms are made.
- **Send Email:** When moving object is detected, send Email to the specified Email address.
- **Full Screen:** When moving object is detected, messages will be displayed in full screen.
- **Latch Time:** When moving object is detected, the alarm time can be set as 10 seconds, 20 seconds, 40 seconds and 60 seconds.
- **Post Recording:** After the alarm finishes, the duration time of the alarm recording can be set as 30 seconds, 1 minute, 2 minutes and 5 minutes.
- **Area:** Click it to enter into the interface shown as Picture 5-21 to set the motion detection area to be monitored intensively.

  A single channel is divided into 15×12 (PAL) or 15×10 (NTSC) configurable grids. The red grids indicate that the motion detection in the area is enabled, white semitransparent ones indicates that the motion detection in the area is disabled. After setting is completed, right click the mouse button to return and click Save to make the parameter setting effective.
- **Record Channel:** When object motion is detected, the record channel setting will be activated.

15. Alarm

Go to “Main Menu” → “Alarm” → “Alarm” to enter into the interface shown as Picture 5-22.



Picture 5-22

It is the alarm management and setting of the machine. User may set alarms under different status in the interface. Please refer to Table 2-4.

- **Alarm In:** User may set four groups of alarm input.
- **Alarm Type:** There are three kinds of status, i.e. Always ON, Always OFF, and OFF. Always ON: When the trigger is on, I/O alarm appears; Always OFF: When the trigger is off, I/O alarm appears; OFF: Do not receive I/O alarm from trigger.
- **Buzzer Time:** You can set how long the buzzer will sound when motion is detected (off, 10s, 20s, 40s, 60s)
- **Alarm out:** Connect the external alarm switch.

Show Message: Display the alarm messages on the screen when motion alarm is detected.

- **Send Email:** Set to send email to specified email when motion alarm is detected.
- **Full Screen Alarm:** When the motion is detected, the corresponding channel will be switched to the full screen mode.
- **Latch time:** you can set how long the buzzer will sound when object move is detected by external sensor (10s, 20s, 40s, 60s)
- **Post Recording:** You can set how long alarm record will last when alarm ends (30s, 1minutes, 2minutes, 5minutes).
- **Record Channel:** The record channel will be activated when the object move is detected.
- **Copy:** Allow you copy current channel parameters to any other channel (setting of record channel cannot be copied).

Alarm Type	Functions & Descriptions
Video Loss	When DVR fails to receive video signals due to some problems (camera damage, line dropout or damage, power failure), the alarm will appear.
Motion Detection	When IP camera detects object moving, alarm will be activated. Sensitivity is subject to the actual application environment test. **Sensitivity** is adjusted according to the sensitivity of moving object detection and parameters are modified by combining the **area setting**.
I/O Status	Communicate with alarm device through I/O port. Alarm signals sent by IR sensor or other devices will be transformed to the system recognized signal and activate relevant channel to record or control the device output.
HDD Status	Alarm will appear when HDD does not work due to damage, power failure, HDD auto-overwrite off and insufficient space.

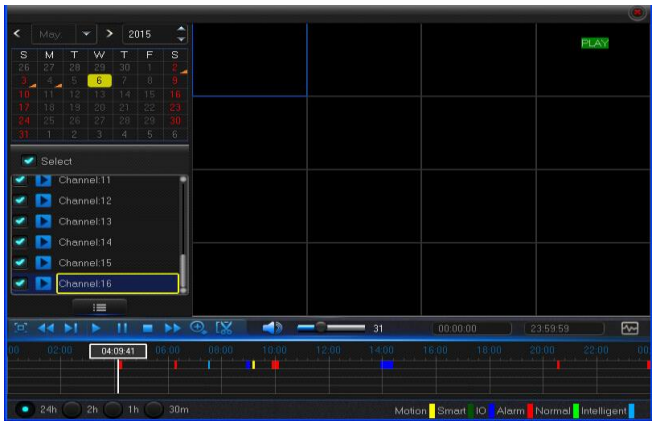
Table 2-1

5.2.2 Record Search

1. General

Go to “Main Menu” → “Record Search” → “Record Search” to enter into the interface shown as Picture 5-23.

Picture 5-23

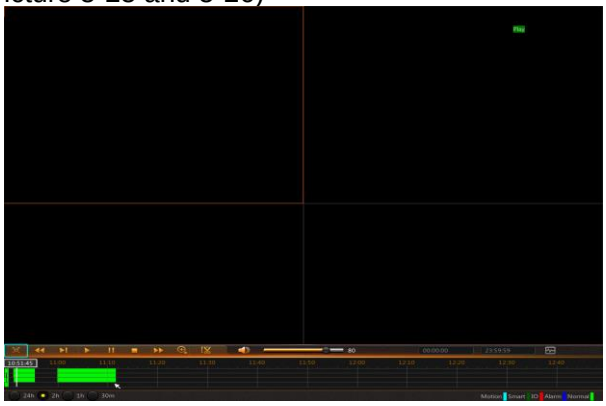


Picture 5-24

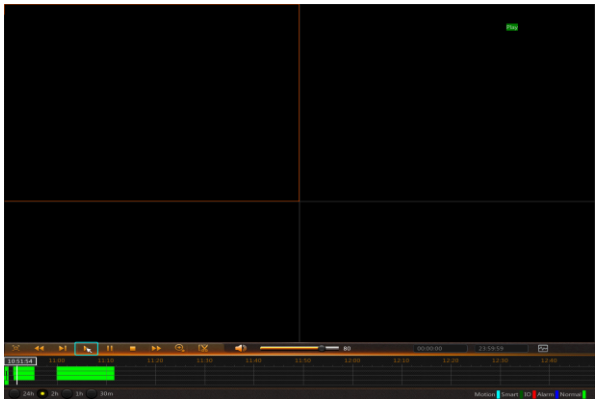
- **Channel:** Select the channel you want to search.
- **Type:** Select the type the playback record. There are two options, i.e. Normal and Alarm.
- **Start Time/End Time:** Select the specific period of time. The default setting is from 0:00 to 24:00.
- **Playback Channel:** Click a date and select corresponding channel in Playback Channel. The selected channels shall not be more than 16, as shown in Picture 5-24.
- **Playback:** Select the desired year and month and click “Search”. If there are any records, a yellow corner mark which shows the recording at specific date will appear at the down-right corner of the date sheet. Select the date checkbox and select playback channel and click Playback to enter into the interface.
- **Playback interface:** You can use the Playback Control bar to operate the Fast Forward (X2, X4, X8 and X16), Rewind (X2, X4, X8 and X16), Slow play (1/2, 1/4 and 1/8 speed), Play, Pause/Frame. You can click or drag the volume control bar to adjust volume. When playback ends, DVR will remain in the playback interface, as shown in Picture 5-25.

Time Axis setup, file clip and zoom in/out

1) The DVR supports the processing control bar function when playing back record files (See Picture 5-25 and 5-26)



Picture 5-25



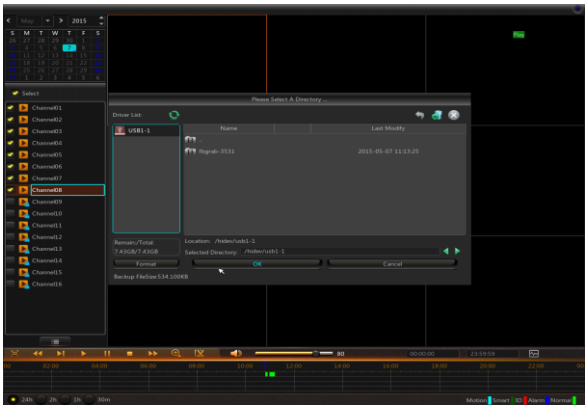
Picture 5-26

Time Axis zoom: Default value is 24hours. Allow user to select 2 hours, 1 hour, 30 minutes or user-defined.

➢ **Detailed Operation:**

Fixed time axis: If you select [2h] option, that means the processing control bar cover two-hour video content. The time range refers to 1 hour before and after the middle point.

2) Record clip and backup function and playback zoom in/out function.



Picture 5-27

Picture 5-28

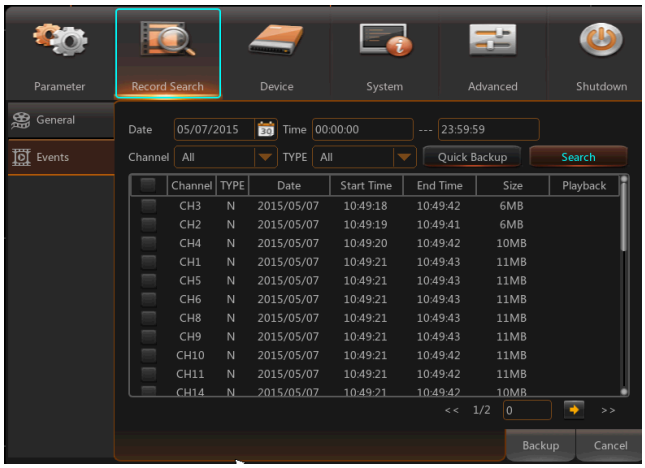
➢ **Clip and backup:** When it is under single channel playback, the [icon will appear in the Play Control bar shown as Picture 5-27. Click the icon to start video clip function, click the icon again to end the function and pop up the dialog shown as Picture 5-27. Now, you may save the clipped video file.

➢ **Zoom out:** When it is under single channel playback, the icon will appear in the Play Control bar. Click the icon to zoom in certain area of the playback screen and right click mouse to return the Playback page (See Picture 5-28)

2. Events

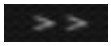
Go to “Main Menu” → “Record Search” → “Events” to enter into the interface shown as Picture 5-29.

In this page, user may search details by date, time, channel and record type. The relevant operations are as follows:



Picture 5-29

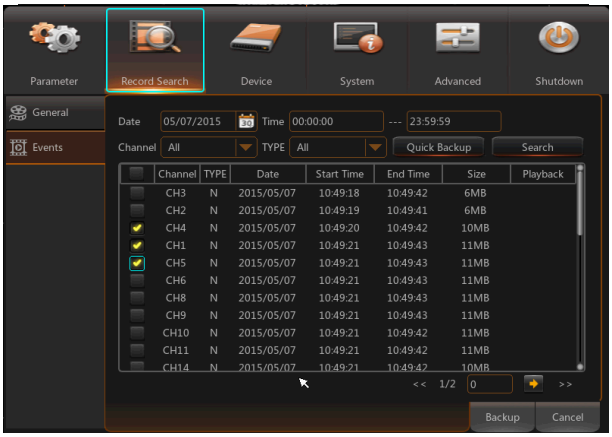
: Previous page; Click the button to go to previous page when viewing events (except the first page). When viewing the first page, click this button to display the event list in the first page.

 : Next page; Click the button to go to next page when viewing events (except the last page). When viewing the last page, click this button to display the event list in the last page.

: Jump; Input the desired record event page in the input box and click arrow button to jump to the input page.

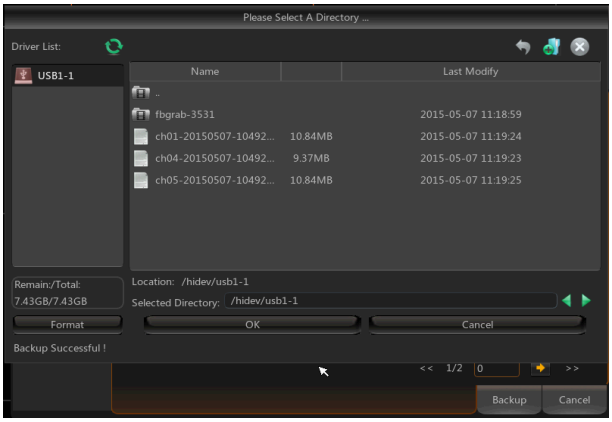
Two types of backup: Quick Backup and Backup

If you want to back up a record in the detailed file list, you may tick the checkbox at the left of the record ("√"means it has been selected) and click "Backup" to enter into "Select backup type" (Make sure U disk or other portable storage device are connected), as shown in Picture 5-30.



Picture 5-30

If you want to back up with USB/ESATA, select USB/ESATA and click OK to start processing and you may see the backup progress shown as Picture 5-30.



Picture 5-31

After backup finishes, message Backup Finishes will appear at down-right corner, as shown in Picture 5-31.

Note: Before backup, connect devices for backup (U flash disk or other mobile storage devices with USB interface)

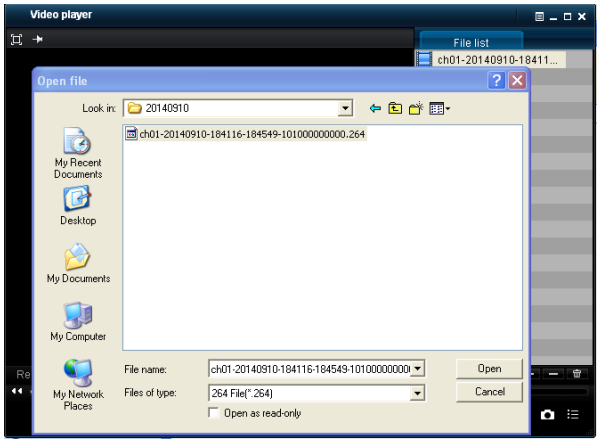
3. Play Backup Files

1.Copy backup files to the computer.

2. Open playback player and click "+" or "

". For example, if you want to choose *.264, add backup file and select a file to play, as shown in Picture 5-32 and 5-33.

Picture 5-32



Picture 5-33

: Play: Click to play file

: Pause: Click to pause.

: Stop: Click to stop playback.

: Next: Click to play next file.

: Previous: Click to play previous file

: Slow Playing: click to play at 1/2, 1/4, 1/8, 1/16 speed.

: Fast Playing: click to play at 2×, 4×, 8×, 16× speed.

: Open file

: Full screen display

: Never on top

: Always on top

: On top during playing

: Screenshot: Save path: installation directory\Video Client\Capture

: Adjust volume

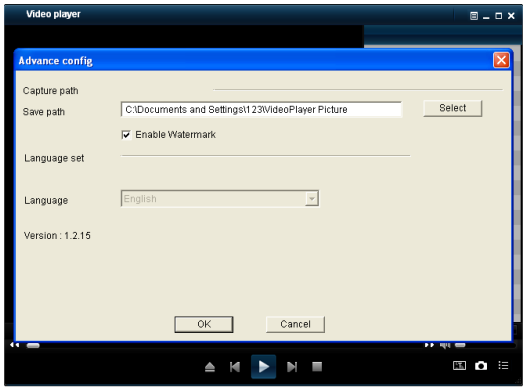
: Add folder or file.

: Delete file in the list.

: Delete all files in the list.

: Expand/pack up the list.

: Advanced configuration: Set the save path for the captured pictures and set the display language of player, as shown in picture 5-34.

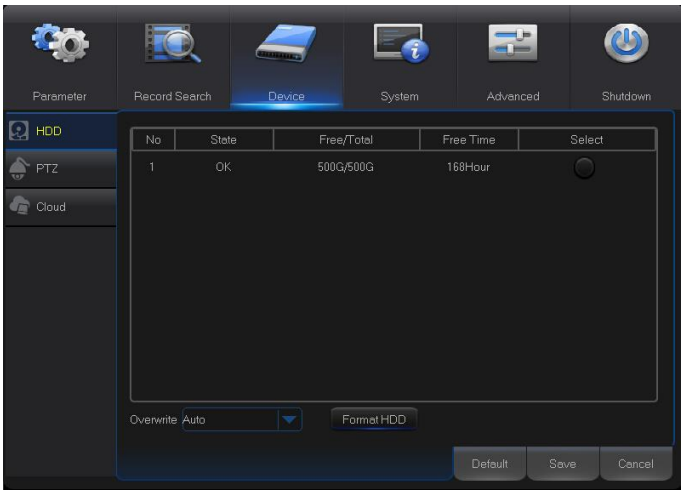


Picture 5-34

5.2.3 Device

1. HDD

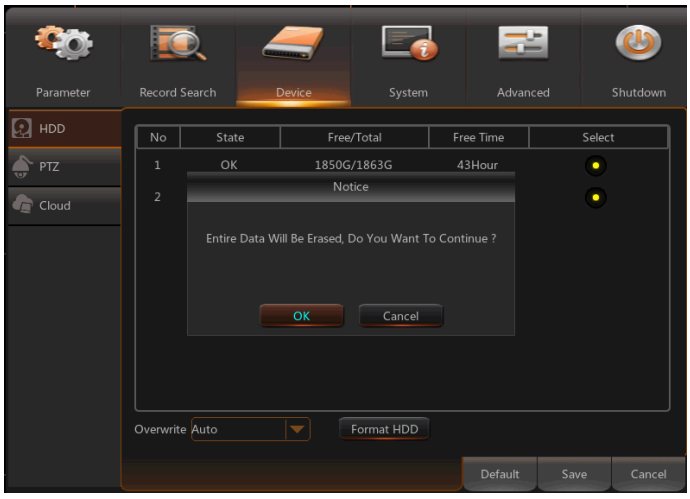
Go to “Main Menu” → “Device” → “HDD” to enter into the interface shown as Picture 5-35.



Picture 5-35

When HDD is connected, the system will automatically detect if HDD is normal or not; If HDD need to be formatted, status will be shown as “Not formatted”. Select the HDD and format the HDD. If the system detects HDD is normal state, the HDD status will be shown as “Normal”. See Picture 5-36

- **No.:** Number of HDD connected to system.
- **Status:** It shows the current status of HDD. It will be available only when HDD is “Normal”.
- **Free/Total Space:** Remaining or total space of HDD
- **Free Time:** Remaining time for HDD recording according to currently set “Resolution”, “Encoding Rate” and “Frame Rate” of image.
- **Auto-overwrite:** When set to ENABLE, the NVR will overwrite the oldest files on the hard drive if hard drive space is full. When set to DISABLE, the NVR will stop recording if hard drive space is full. Overwrite time: 1 day, 3 days, 7 days, 14 days, 30 days and 90 days. It means the longest storage time of records in HDD. If the time is over, the records will be deleted. For example, if the time is set as 3 hours and the data in HDD include 12, 13, 14, 15, 16, 17, 18, 19 and 20 o’clock, then data 18, 19 and 20 will be saved and data 12, 13, 14, 15, 16 and 17 will be deleted.
- **Format HDD:** Format HDD for the first use.



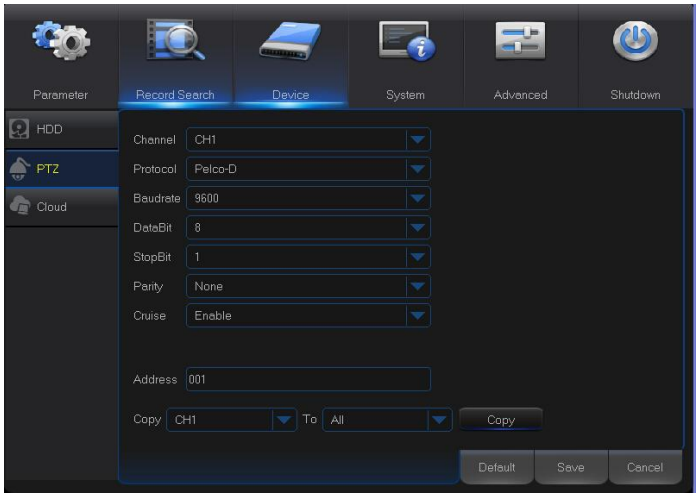
Picture 5-36

Note: Recording can only be performed when HDD is in “Normal” state.

5.2.4 PTZ and Cloud Storage

1. PTZ

Go to “Main Menu” → “Device” → “PTZ” to enter into the interface shown as Picture 5-37.



Picture 5-37

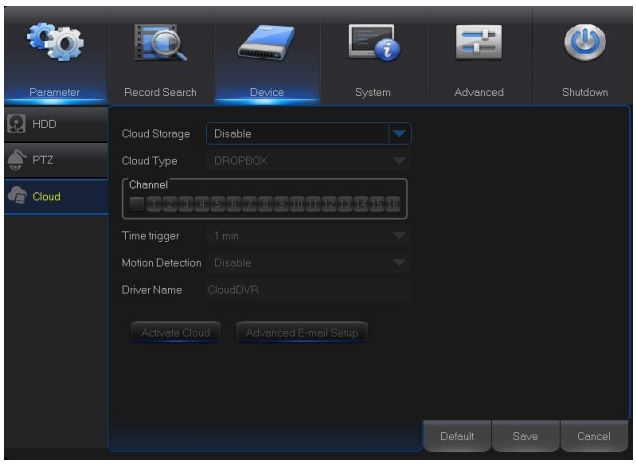
Select a PTZ channel and set PTZ protocol (Pelco-D, Pelco-P), Baudrate (1200, 2400, 4800, 9600), DataBit（8, 7, 6, 5）, StopBit (1, 2), Parity (None, Odd, Even Mark Space), Address and Cruise.

Parameter setting for above channels must be the same as that of PTZ so that PTZ can be controlled. The protocol, baudrate and PTZ address must be set.

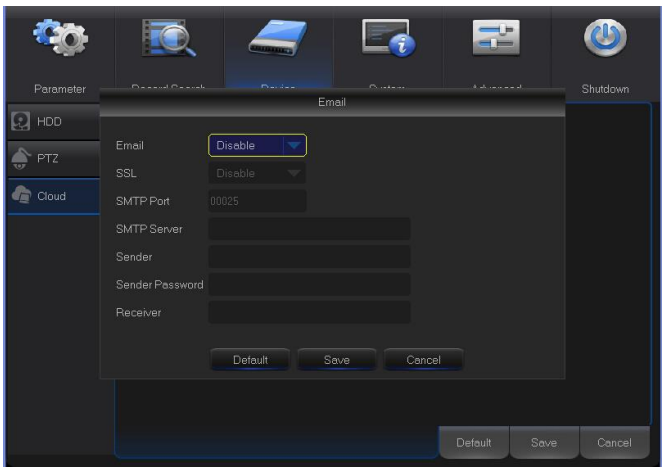
2. Cloud Storage

Cloud: Cloud Space (Network HDD). It can upload the DVR periodically captured pictures and motion detection captured pictures to Dropbox

1) Register in Dropbox website, Address: https://www.dropbox.com/
2) Configure network to ensure the normal operation of DVR network.
3) Configure Cloud: Enable Cloud and set the channel and interval for DVR periodically captured pictures; Enable Motion Detection to get captured pictures for motion detection.
4) DriName refers to the name created in the folder of Dropbox and the name can be defined by the user, e.g. CloudDVR000. The folder is to store the DVR periodically captured pictures) (See Picture 5-38).
5) Click [Advanced E-mail Setup] to set the Email box. User shall input his Email. (See Picture 5-39)



Picture 5-38



Picture 5-39

6) Click [Active Cloud] to activate Cloud and Email will receive the URL related to Cloud

User input the registered user name to visit the above website and the following interface will be popped up.

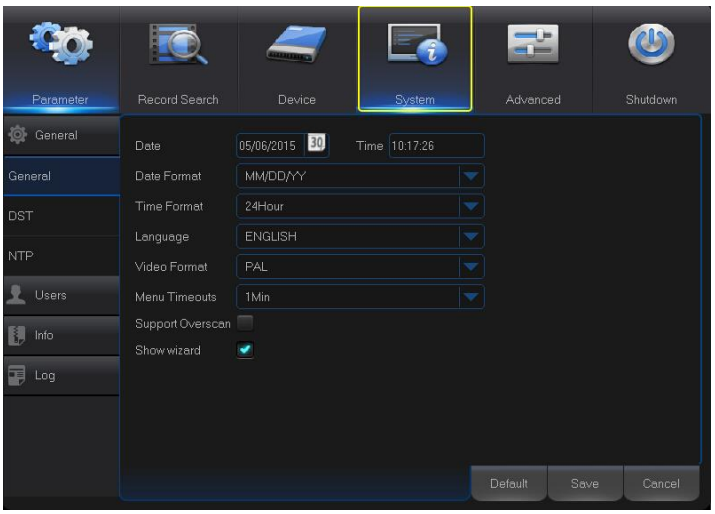
7) Click the icon at the upper-left to view the folder (CloudDVR000) made in the 4th step.

8) Enter the folder to view the DVR captured pictures.

5.2.5 System

1. General

Go to “Main Menu” → “System” → “General” → “General” to enter into the interface shown as Picture 5-40

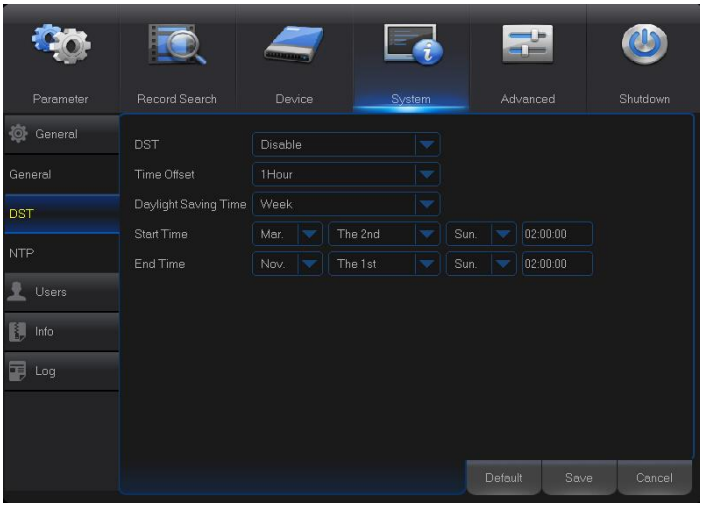


Picture 5-40

User may set Date, Time, Date Format, Time Format, Language, Video Format, Menu Timeouts and Show Wizard in this page.

2. DST

Go to “Main Menu” → “System” → “General” → “DST” to enter into the interface shown as Picture 5-41

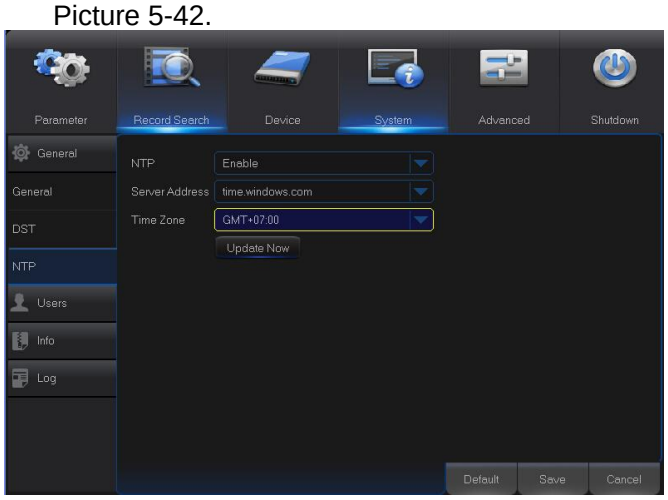


Picture 5-41

Enter into the interface shown as Picture 5-41 to set DST, Time Offset, Start Time and End Time.

3. NTP

Go to “Main Menu” → “System” → “General” → “NTP” to enter into the interface shown as Picture 5-42.

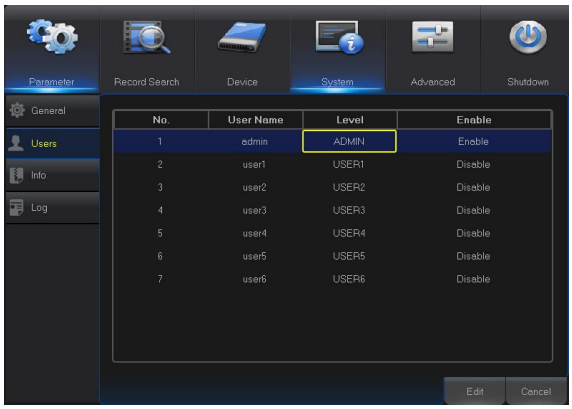


Picture 5-42

- **NTP service:** Enable/Disable NTP function.
- **Server Address:** Select NTP server (time.windows.com, time.nist.gov, pool.ntp.org).
- **Time Zone:** Corresponding time zones for various nations or regions.
- **Update Time:** Enable NTP function and save parameters and click Update Time to calibrate the system time.
  Note: When NTP function is set to “Enable”, system will calibrate the system time at every 00:07:50 and every start-up.

4. Users

Go to “Main Menu” → “System” → “Users” to enter into the User interface shown as Picture 5-43.

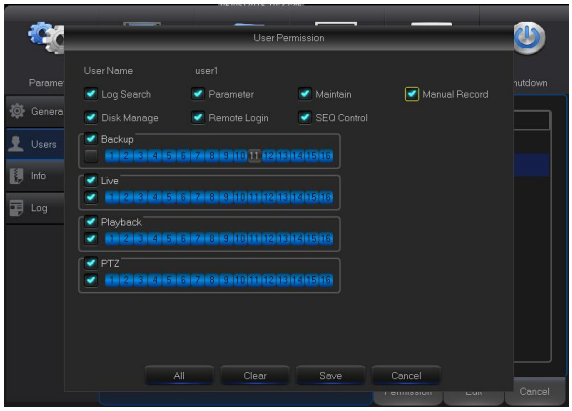


Picture 5-43

It supports up to seven users, including one administrator and six users. Click [Edit] button to enter into the [User Edit] interface to input user name and password, as shown in Picture 5-43

User Name consists of 8 characters and password is composed by number 0-9 with max length of 8 numbers

Set user password. Administer is authorized to set user common user’s authority, as shown in Picture 5-44

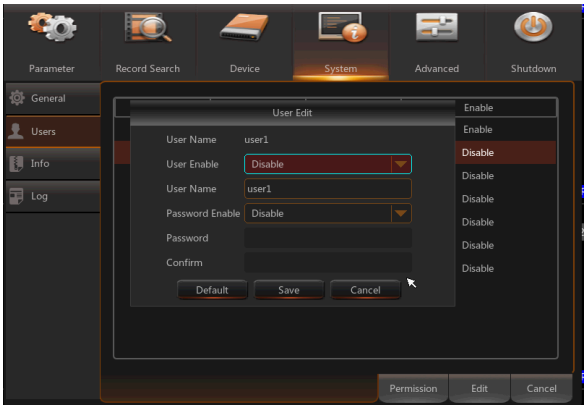


Picture 5-44

- **Log Search:** allow you check all the system logs.
- **Parameter:** allow you set all the parameters.
- **Maintain:** allow you update version, recover ex-factory value, device reboot and shut down.
- **Disk Management:** allow you manage and control the HDD and USB drive.
- **Remote Login:** allow you remotely login DVR.
- **SEQ Control:** allow you sequence live screens for all the channels.
- **Manual Record:** allow you manually start/stop record.
- **Backup:** Tick-select the ENABLE “√” option and select channel for backup, the user is allowed to backup the record in the selected channel.
- **Live:** Tick-select the ENABLE “√” option and select a channel and the user is allowed to view all the live images in the selected channel.
- **Playback:** Tick-select the ENABLE “√” option of Playback and the common user is allowed to playback the selected record in the channel.

5. User Edit

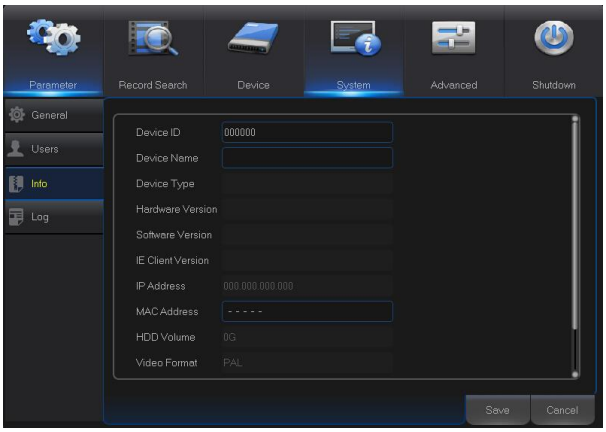
User may enable or disable the function or set password (See Picture 5-45)



Picture 5-45

6. Info

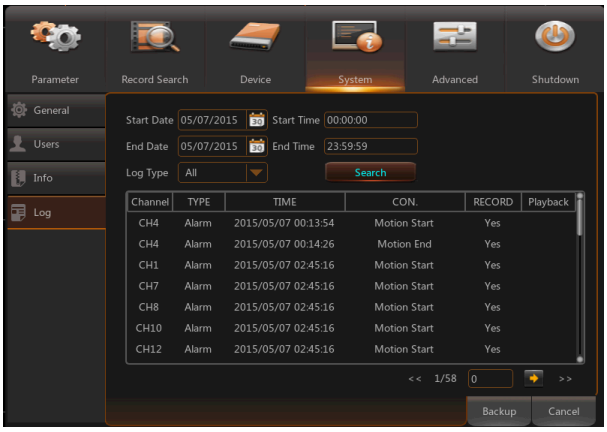
Go to “Main Menu” → “System” → “Info” to enter into the interface shown as Picture 5-46.



Picture 5-46

7. Log

Go to “Main Menu” → “System” → “Log”, as shown in Picture 5-47



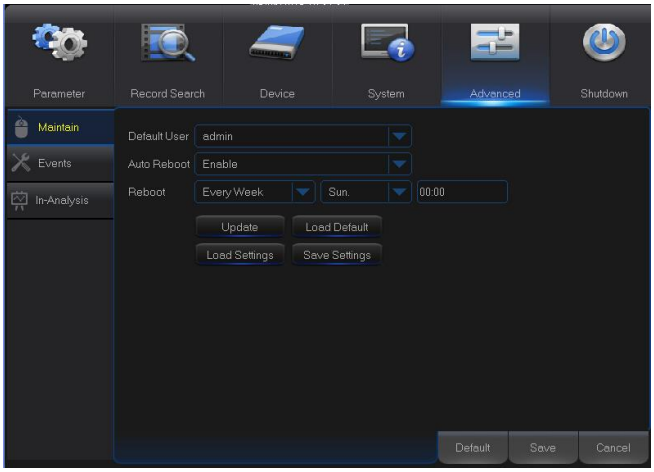
Picture 5-47

User may search log information in different period of time. Click “Backup” to save all the log information, as shown in Picture 5-47.

5.2.6 Advanced

1. Maintain

Go to “Main Menu” → “Advanced” → “Maintain” to enter into the interface shown as Picture 5-48.



Picture 5-48

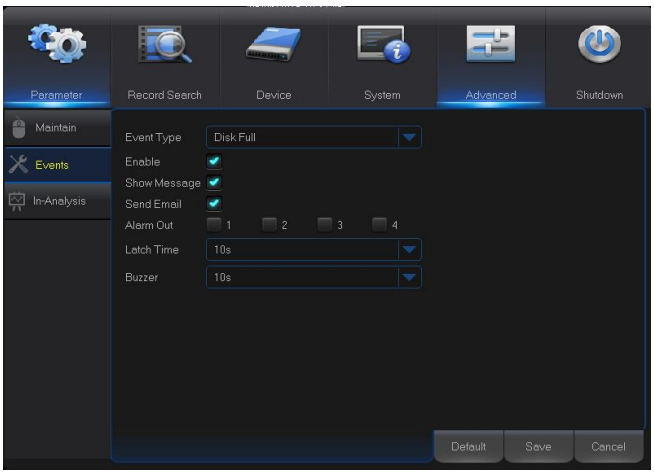
- **Auto Reboot:** Enable the auto maintenance function to reboot system regularly at every day/week/month. When Auto Reboot is enabled, DVR should be in the main interface and no user operation.
- **Update:** Click Update to enter the Device interface and select the updating file in USB to execute.

- **Load Default:** If [Load Default] is selected, you can initialize the system to the ex-factory default. Click “Load Default” and select items to be restored
- **Load Settings:** Load parameters in the removable storage device to DVR.
- **Save Settings:** Save the set parameters of user’s DVR to the removable storage device.

Note: Do not take out the USB memory or cut off the power during upgrading. When the update is done, system will be automatically restarted. After about 5 minutes, the upgrading will be finished. It is recommended to **load ex-factory default** after upgrading. The auto maintain function can be effective only when DVR returns back to Preview mode with no any operation within the set auto maintain time.

2. Events

Go to “Main Menu” → “Advance” → “Events” to enter into the interface shown as Picture 5-49.

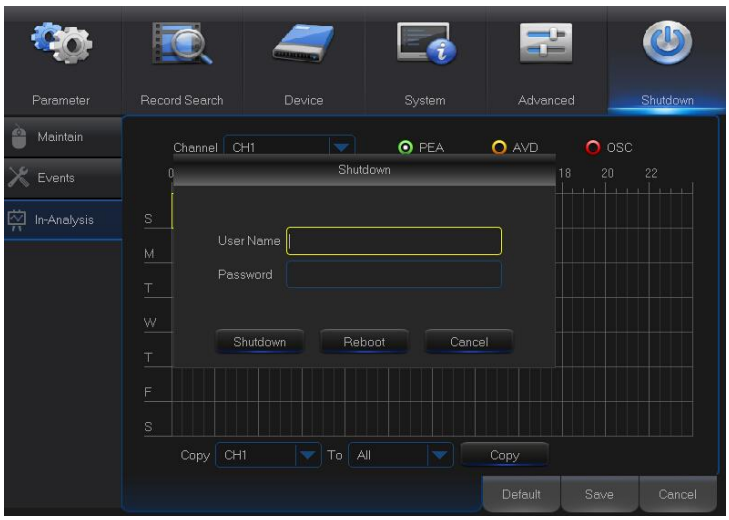


Picture 5-49

- **Event Type:** Support three abnormal types: Disk Full, Disk Error and Video Loss.
- **Enable:** Active alarms for abnormal situations.
- **Alarm Out:** Enable or disable alarms
- **Latch Time:** How long the buzzer will sound when external sensor alarm is detected (10s, 20s, 40s, 60s).
- **Show Message:** You can set show message on the screen when sensor alarm is detected.
- **Buzzer:** How long the buzzer will sound (10s, 20s, 40s, 60s).
- **Send Email:** Select to send Email to specified Email address when abnormal events appear.

5.2.7 Shutdown

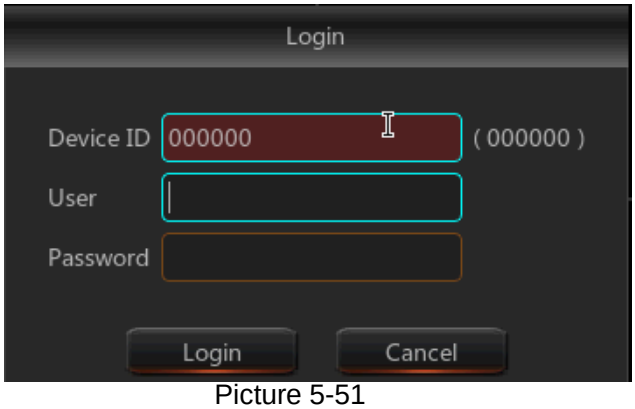
➢ Go to “Main Menu” → “Shutdown” to enter into the interface shown as Picture 5-50.



Picture 5-50

5.3 Menu Lock

In consideration of system safety, user may click the icon on the toolbar when he leaves away from DVR and the system interface will be locked. User has to input Device ID, User Name and Password on the login interface to unlock (**Default: User Name: admin, Password: blank**). The login interface is as shown in Picture 5-51.



Picture 5-51

Note: Administrator has all authorization of menu operation and users have limitations for authorization and have to get authorization from administrator.

5.4 Split Mode

There are many display modes in video channel, including single channel display, SEQ display and split mode.

5.5 Record Search

Click icon on the toolbar to enter into the Record Search interface to search and playback.

Refer to former section for specific operating method.

5.6 Mute

Click icon on the toolbar or Mute button on the panel or remote controller to control the mute of NVR.

5.7 Start Sequence

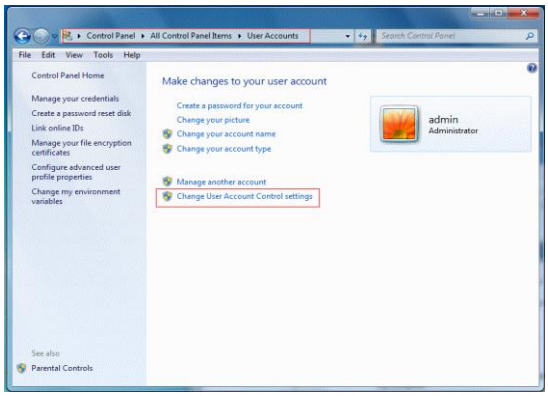
After set channel sequence time, click Start Sequence icon on the toolbar to start sequence.

Chapter 6 Web Application Manager

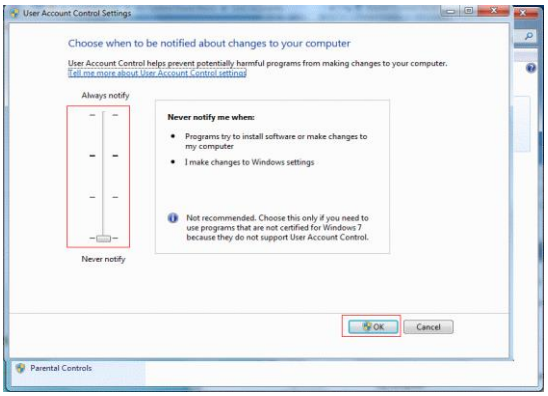
6.1 ActiveX control download and installation

Open your web browser and input the IP address and Web port number of DVR, such as: http://172.18.6.202:8080/. If your computer is connected to internet, it will download and install “ActiveX” plug-in automatically. If you use Windows Vista or Windows 7 and unable to backup or record during remote operation, please check the user authorization.

WIN7:



WIN7-1

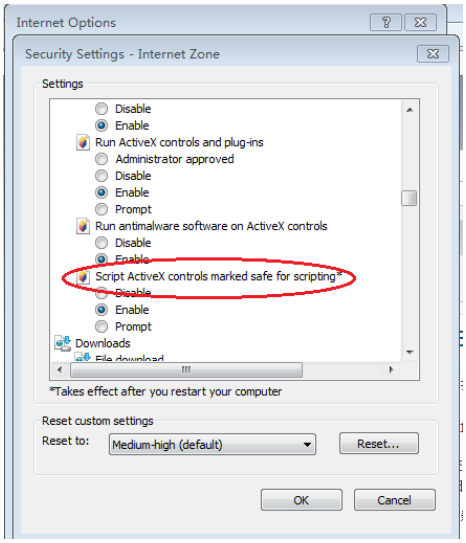


WIN7-2

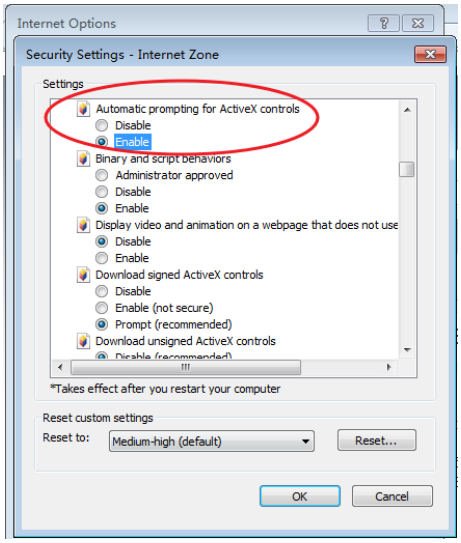
Note: If the ActiveX control is not downloaded successfully, please check if your browser's safety level or firewall setting is set too high. Please open IE browser → [Menu Bar]Tools → Internet options → Security → Internet → Custom Level → Enable the options (Refer to the Picture 6-1-1 and Picture 6-1-2).

If the web application runs for the first time, please wait for about one minute to finish downloading.

If you want to use the undated ActiveX control at a computer which you have already logged in before, please delete the original control and click [Start → Run] and then input the command characters: "regsvr32/u HiDvrOcx.ocx". Press OK. When you log in at the next time, new ActiveX control will be automatically downloaded. Please wait.



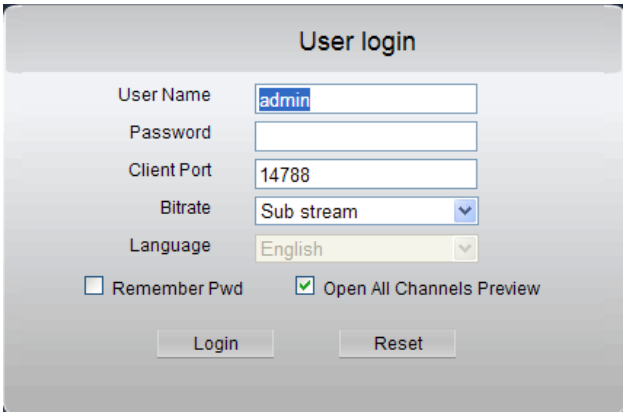
Picture 6-1-1



Picture 6-1-2

6.2 Web Application Manager Login

After ActiveX controls installation, please input user name and password, select Main Stream or Sub Stream (In general, select main stream for intranet and sub stream for outer net), and input web port number and select language in the interface (See picture 6-2). There is an option for opening all channel preview, select it to open all live pictures. Press Login to log in client and remotely visit DVR. The default password is blank and administer is authorized to modify the password. Set password as per introductions of user management in system setting.

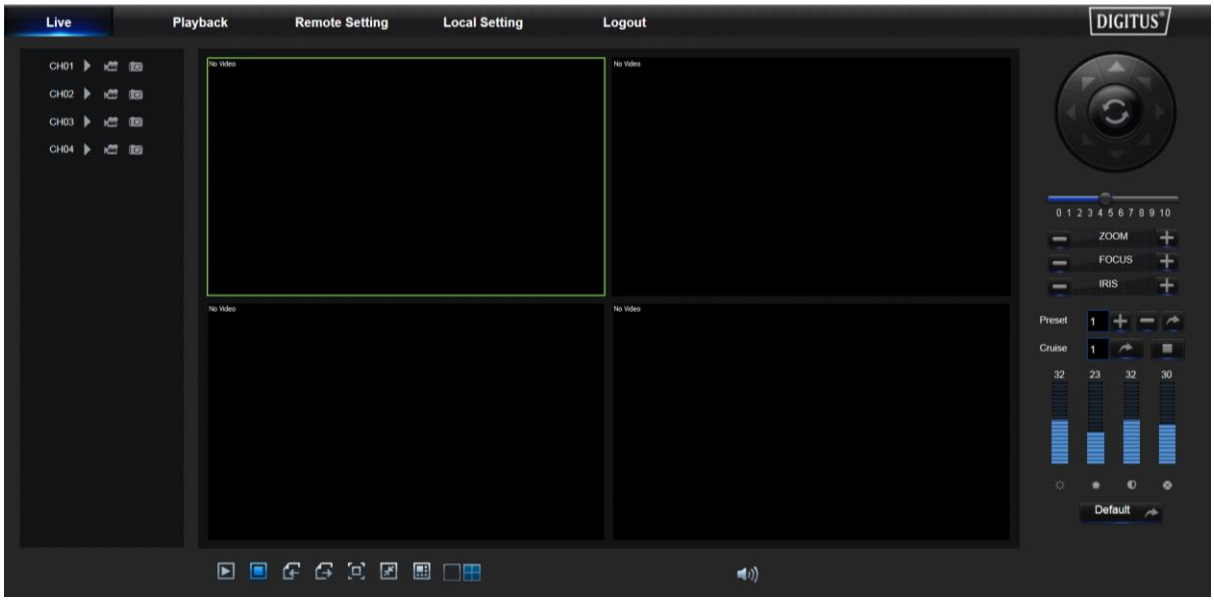


Picture 6-2

After successfully log in, it will enter the real-time monitoring interface and connect video automatically, as shown in Picture 6-2.

6.3 Live Interface

Log in and enter into the live interface, as shown in Picture 6-3.



Picture 6-3

6.3.1 Menu Bar

Menu Bar: Live, Replay, Configuration, Local Setting and Logout.

1. Live Display

Log in the Web Application Manager, system will be defaulted to enter into <Live> interface shown as Picture 6-3. You can click [Play] button to Open/close live images, on-spot record, capture, and many live display modes.

Buttons on a single live interface:

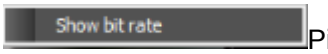
: Volume switch

: Record switch: the remote record switch of client. Record will be automatically saved to a specified position on PC after the function is enabled.

: Snapshot: Capture the selected live image and save it to a specified position on PC. The image is saved as *.bmp format.

: Open or close the images on Live window.

Or **click the right key of mouse on each <Live> window** to pop up channel operation menu as shown in Picture 6-4



Picture 6-4

Show bit rate: Tick Show Bit rate to show IPC bit rate in current window.

: Switch display mode in channel window

: Open all the Live channels.

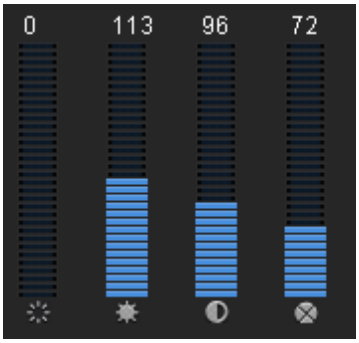
: Close all the Live channels

: Display previous group of channels

: Display next group of channels

: Click to maximize the current window to full screen. Right click to pop up menu option and select Exit Full Screen.

2. Video Control



Picture 6-5

: Adjust the chromaticity of video

: Adjust the brightness of video

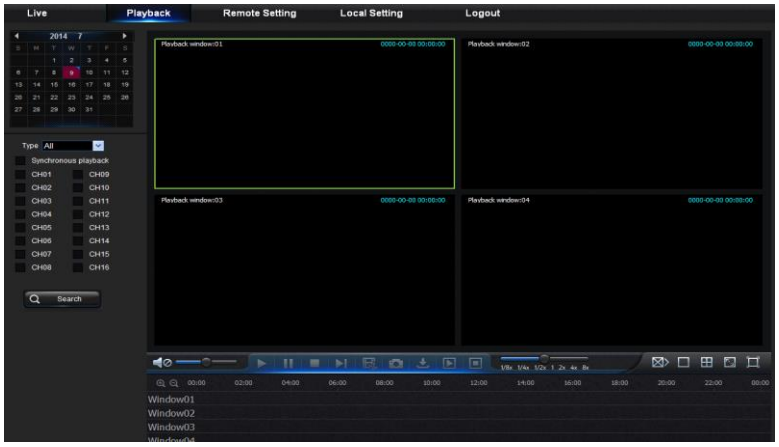
: Adjust the contrast of video

: Adjust the saturation of video

6.3.2 Playback

Click

to enter into Playback interface to remotely view the records in DVR HDD, as shown in Picture 6-6.



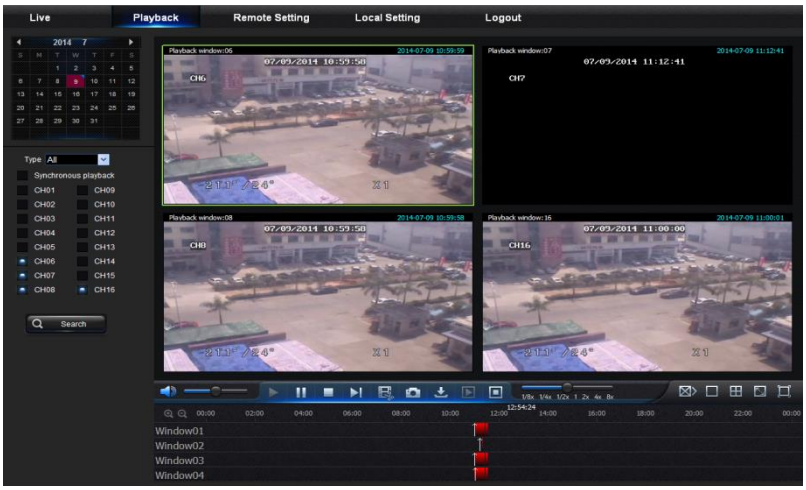
Picture 6-6

It supports 1 to 4 channel record playback.

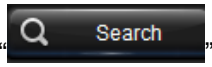
1. Record Search

Record playback procedure

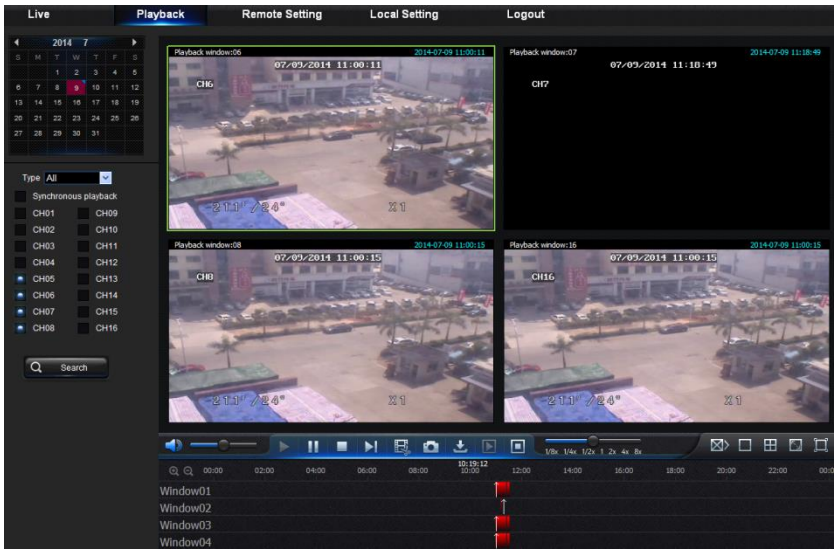
Firstly, select the date you want to check and tick 1 to 4 channels. Any record files in current channel at current date will be displayed in the status bar of the interface. (See Picture 6-7)



Picture 6-7

Secondly, select record type (Normal record, Alarm record and All) and channels, and then click " 

", and time axis panel will display specific time quantum, as shown in Picture 6-8. On the time axis, red part stands for alarm record, yellow stands for normal record and original part stands for no record during this period.



Picture 6-8

Before playback, choose to enable playback 4 channels synchronously. If you tick-select "

", that means the selected channel will playback synchronously; otherwise, you could separately control the channels playback.

Thirdly, start playback

Click to start record playback. When mouse curse is moving on the time axis, the time point of current position will be displayed on the time axis screen. Click to locate the record. Click the

icon or to zoom in/out the time bar display ratio, as shown in Picture 6-8.

2. Playback Control

Playback control bar, as shown in picture 6-9.

Picture 6-9

Detailed brief description is shown as below list

Key	Description	Key	Description
	Play		Enable the volume switch
	Pause		Volume adjustment bar
	Stop		Slow playing 1/2,1/4, 1/8, Fast playing 1/2/4/8
	By frame		Stop playing all the files
	Record Clip		Single channel mode
	Snap		Quad mode
	Download		Full Screen
	Open all the playback channels		Stop playing all the playback

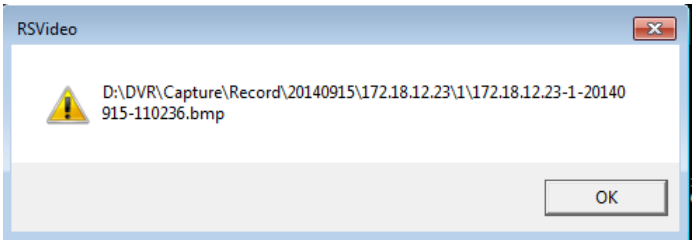
Table 6-1

Record file clip

After opening playback, click icon to clip the selected file; and click again to stop the clip function. Then playback clip is successfully done. Record clip file will be saved as *.264 format.

Snapshot function

Move the mouse curse to the channel you want to capture, and click [ ] icon to capture the live images remotely. After capturing the images successfully, a path prompt box will be popped up, as shown in Picture 6-10.

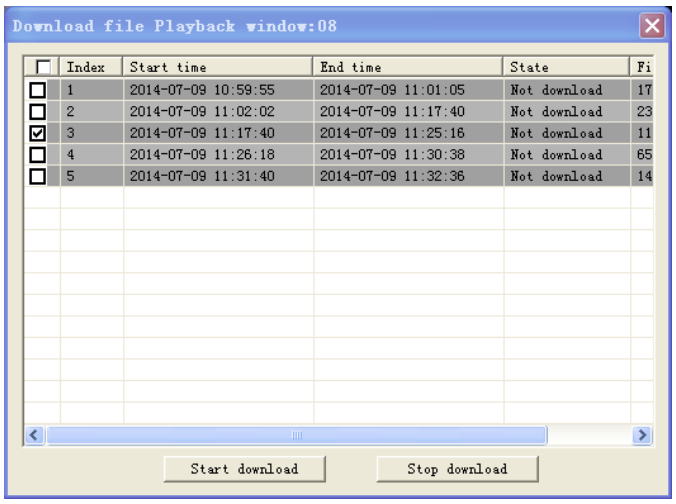


Picture 6-10

The captured file will be saved as .bmp format.

Record file download

Click download icon “ ” on the control bar to display all the matched record file according to the search conditions of channels, as shown in picture 6-11.

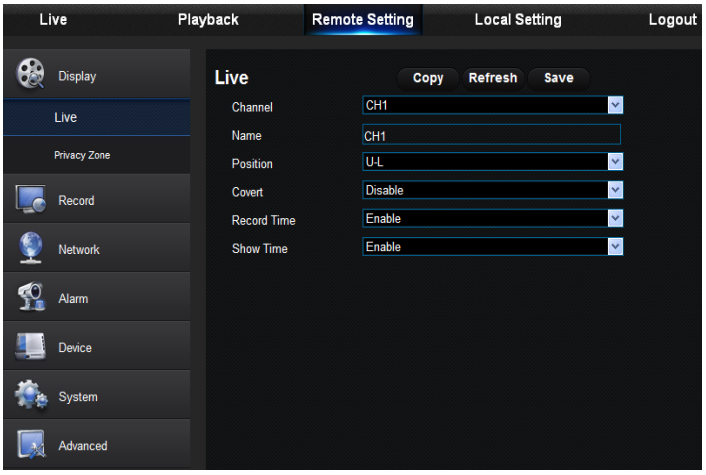


Picture 6-11

Tick-select the record file you want to download and click [Start download] .System will download the record file in sequence and save to local PC. The downloading file will be displayed in percentage form. After downloading finishes, “Complete” will be displayed on the status bar.

6.3.3 Remote Setting

Click Remote Setting to enter into the interface shown as Picture 6-12, including Display, Record, Network, Alarm, Device, System and Advance.

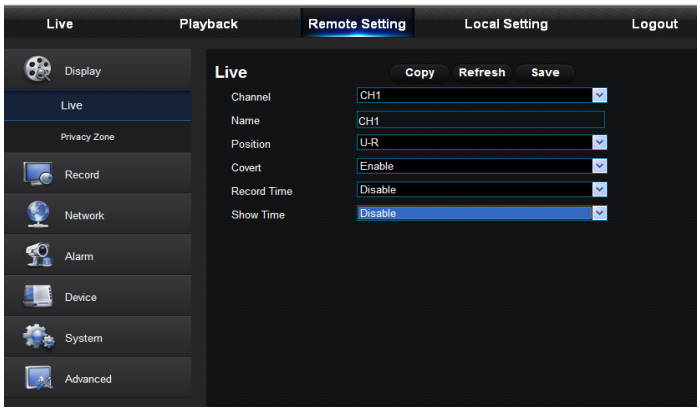


Picture 6-12

1. Display

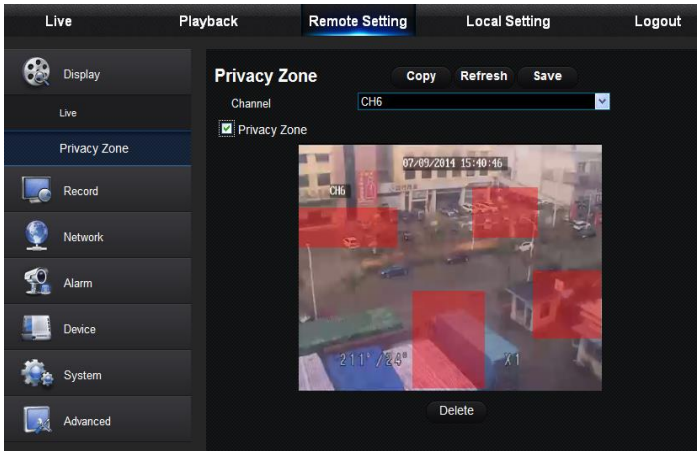
Unfold [Display] option to find its sub-options: Live and Privacy zone.

1) Live: You may change channel name, position, channel preview and relevant parameters. If show time is set as <disable>, current DVR system time will not appear on the screen on Live mode. (See Picture 6-13)



Picture 6-13

2) Privacy Zone: Each channel can set 4 privacy zones, as shown in Picture 6-14. The relevant parameters should be consistent with DVR local setting. Select zones to be deleted and click “Delete” and click “Save” at up-right corner.

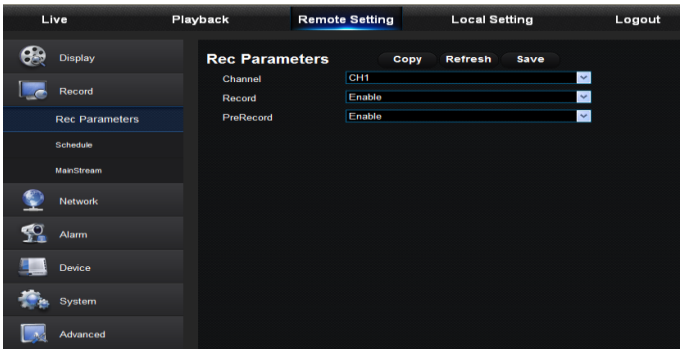


Picture 6-14

2. Record

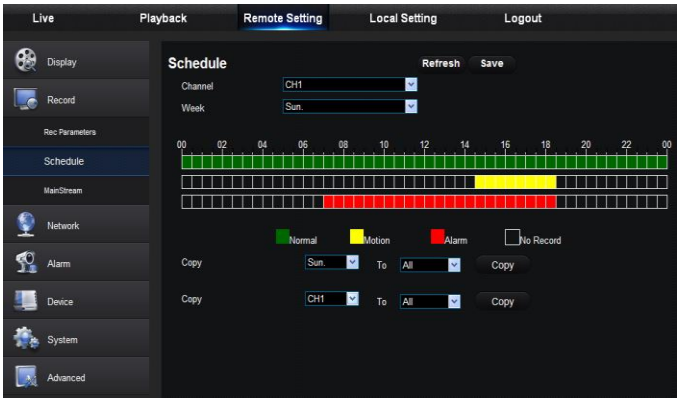
Click <Record> option to unfold its sub-options: Record parameter and Schedule.

1) Record Parameters. The parameters should be consistent with DVR local setting, as shown in Picture 6-15.



Picture 6-15

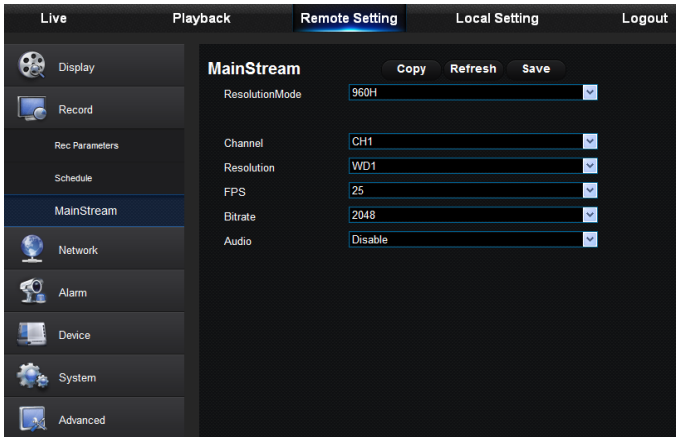
2) Record Schedule. The parameters should be consistent with DVR local setting, as shown in Picture 6-16.



Picture 6-16

Green stands for Normal record; Yellow stands for Motion detection; Red stands for I/O trigger record.

3) Mainstream: User may set Mainstream, as shown in Picture 6-17. The relevant parameters should be consistent with DVR local setting.



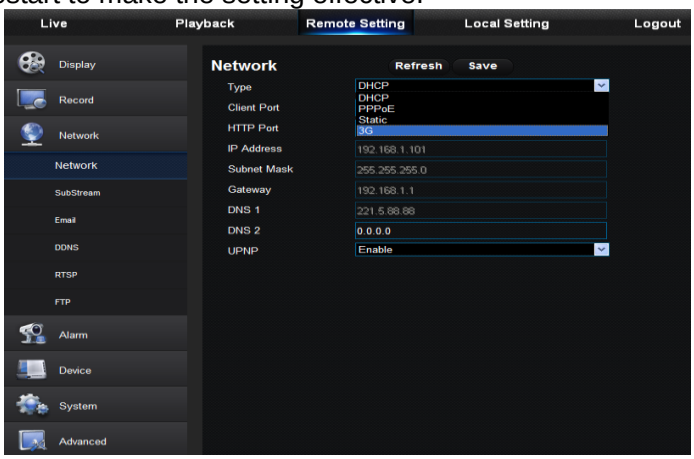
Picture 6-17

6.3.4 Network

Unfold <Network> to show its sub-options: Network, Email, and DDNS configuration, as shown in Picture 6-18.

1. LAN setting

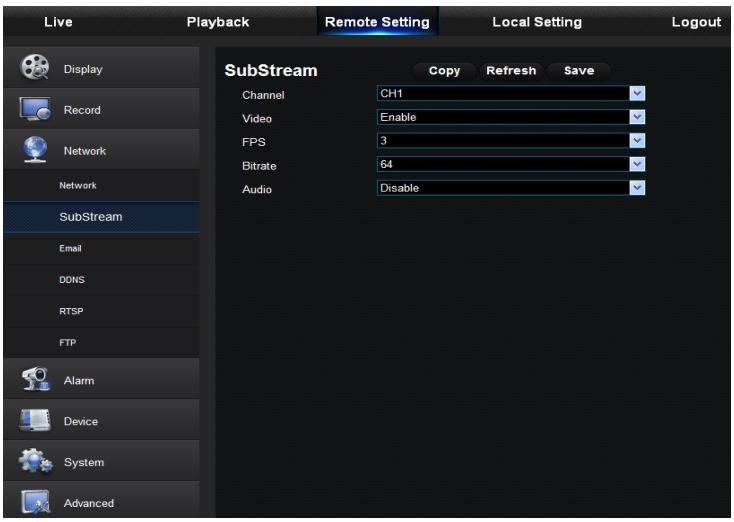
DVR supports Static/DHCP/PPPOE modes. System default network type is <Static>. User can set parameters as required. After the network parameters are modified successfully, DVR will automatically restart to make the setting effective.



Picture 6-18

2. Substream

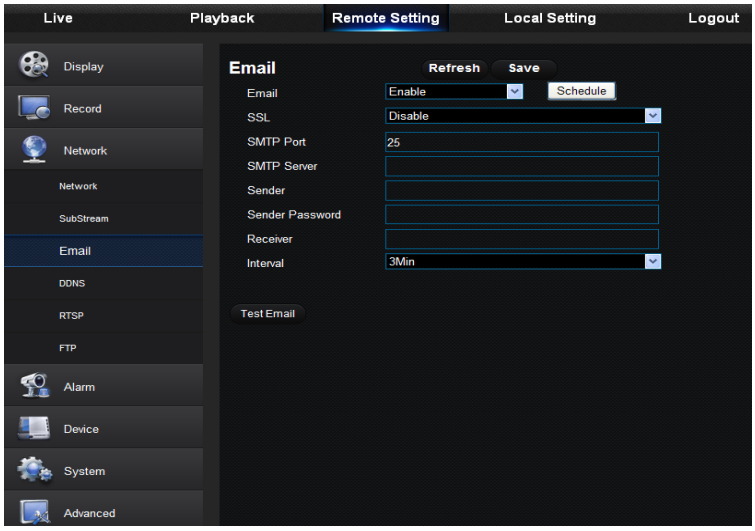
User may set Mainstream, as shown in Picture 6-19. The relevant parameters should be consistent with DVR local setting.



Picture 6-19

3. Email

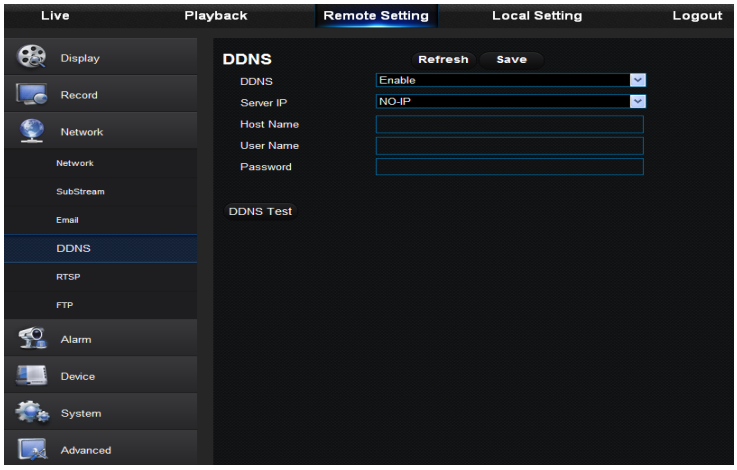
Email: Set DVR alarm Email configuration parameters, including Email address, SSL, Email Enable, Interval and Email Schedule, etc. Detailed parameters should be consistent with DVR local setting. Refer to Picture 6-20.



Picture 6-20

4. DDNS

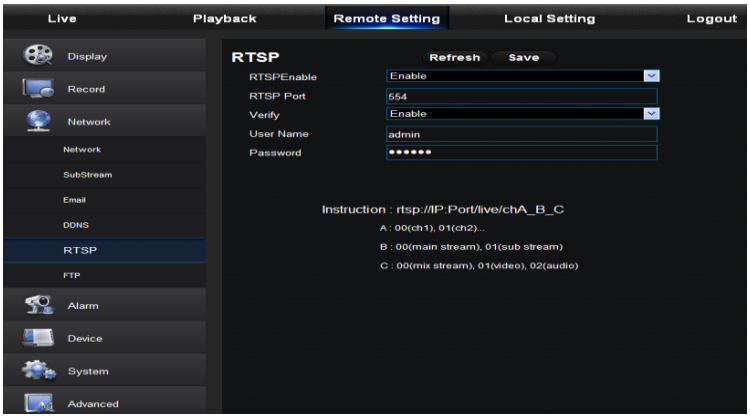
DDNS: After user applies for DDNS service, you could enable <DDNS> function under any one network type mode (Static, DHCP and PPPoE). And you may remotely visit the NVR through domain name (http://domain name: Web port No.). When visiting DVR by using DDNS, user should make sure port and current IP can be normally connected in public network. Details settings, including server address, host, user, and password, should be consistent with NVR local setting. Please refer to Picture 6-21.



Picture 6-21

5. RTSP

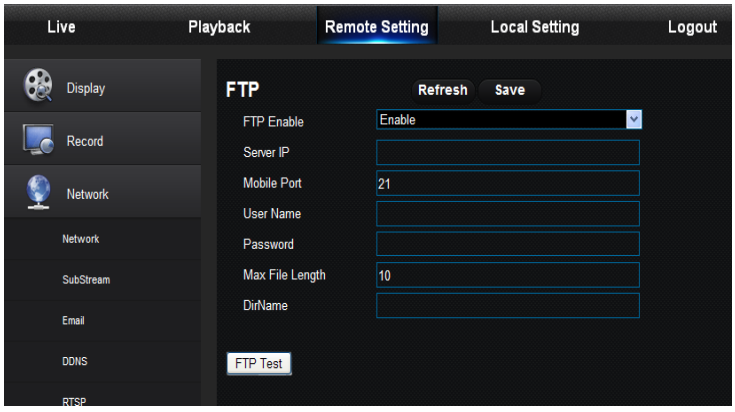
Refer to Picture 6-22. The relevant parameters should be consistent with DVR local setting.



Picture 6-22

6. FTP

Refer to Picture 6-23. The relevant parameters should be consistent with DVR local setting.



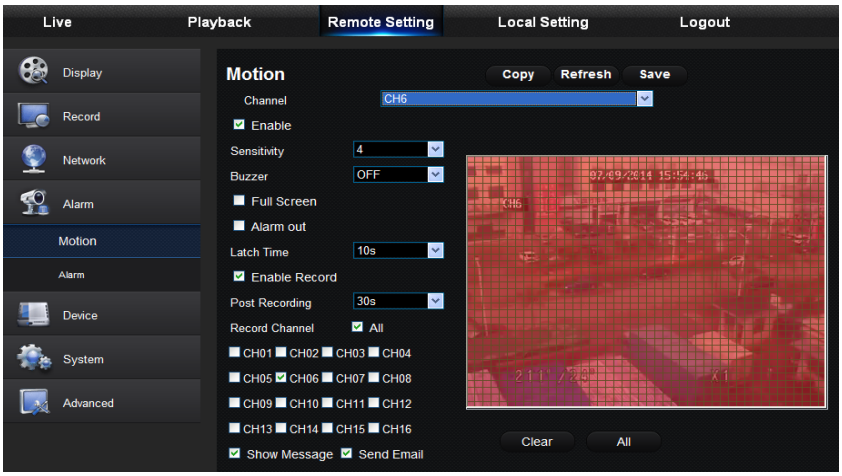
Picture 6-23

6.3.5 Alarm

Alarm setting includes Motion Detection and I/O Alarm Parameters.

1. Motion Detection

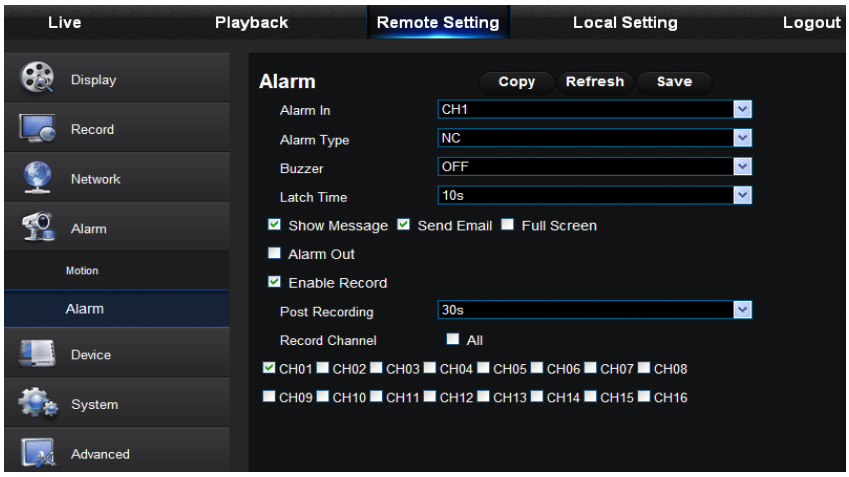
Configure Sensitivity, Alarm out, Alarm Record and Alarm Capture, etc. Detailed setting should be consistent with DVR local setting (See Picture 6-24).



Picture 6-24

2. I/O Alarm

Set parameters for I/O Alarm, Alarm Out, Alarm Record, Send Email, etc. Detailed setting should be consistent with DVR local setting (See Picture 6-25).



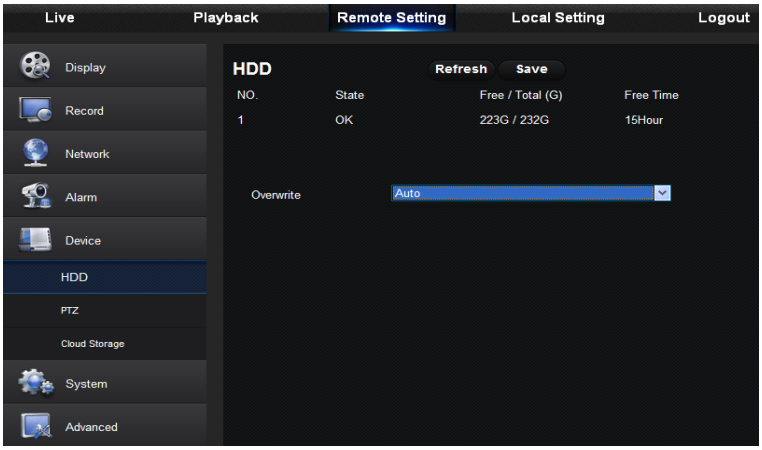
Picture 6-25

6.3.6 Device

Click <Device> to unfold its sub-options: HDD and PTZ

1. HDD

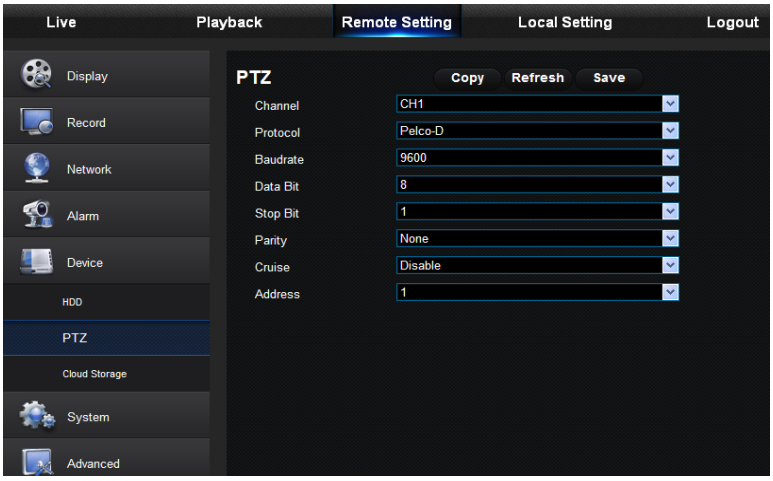
User may check HDD status of DVR and overwritten time. Detail setting should be consistent with DVR local setting. Please refer to Picture 6-26.



Picture 6-26

2. PTZ

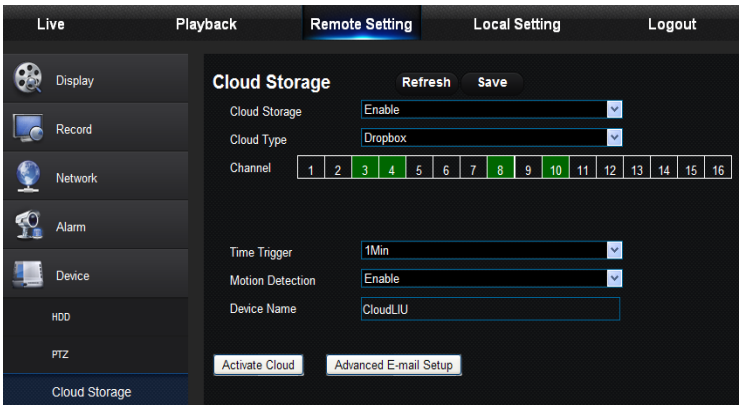
User may set the relevant parameters of PTZ. Detail setting should be consistent with DVR local setting. Please refer to Picture 6-27.



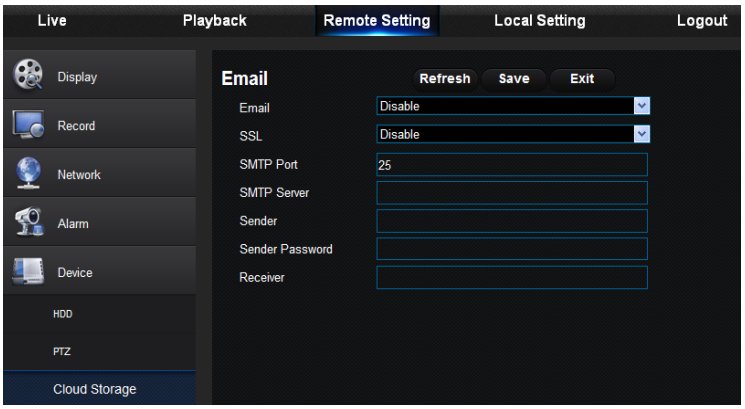
Picture 6-27

3. Cloud Storage

User may set the relevant parameters of Cloud Storage. Detail setting should be consistent with DVR local setting. Please refer to Picture 6-28-1 and 6-28-2.



Picture 6-28-1



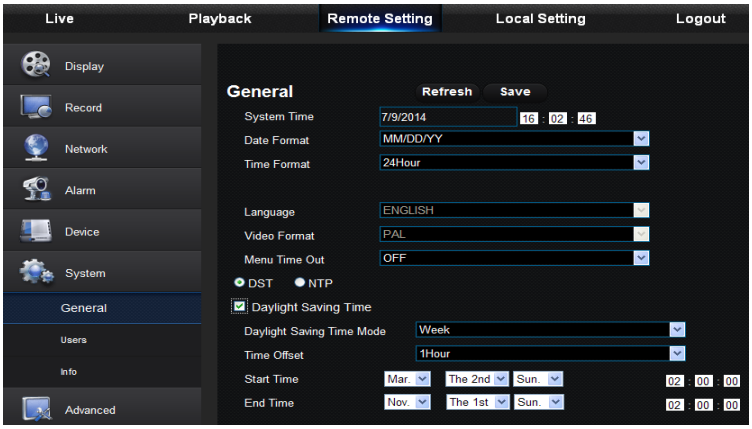
Picture 6-28-2

6.3.7 System

Click <System> option to unfold its sub-options: General, Users and Information.

1. General

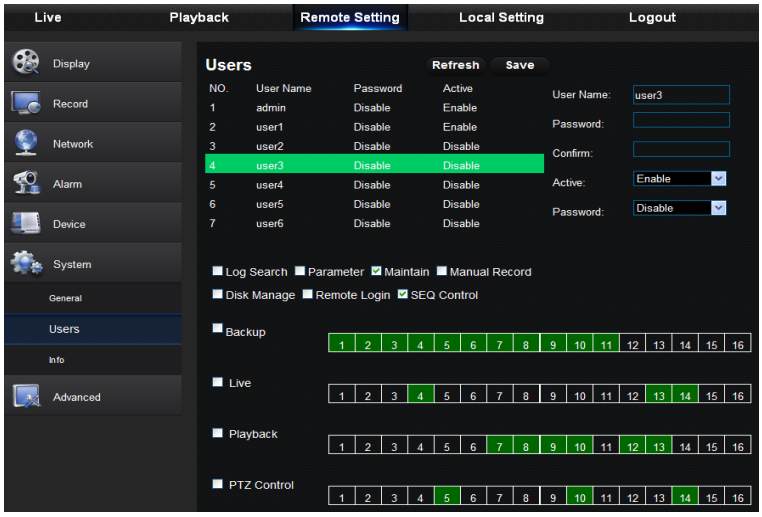
User may check DVR language and video system and set system time, date/time format, menu display time, DST and NTP parameters shown as Picture 6-29. Detailed setting should be consistent with DVR local setting.



Picture 6-29

2. Users

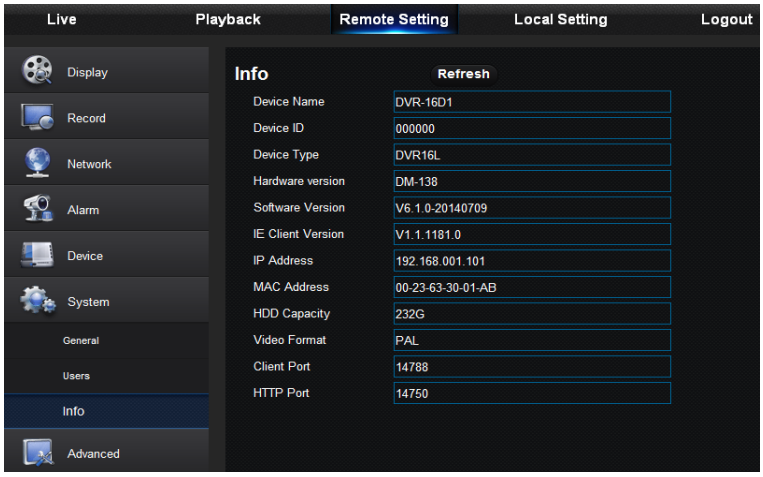
User may configure user name and password and detailed setting should be consistent with DVR local setting. Please refer to Picture 6-30.



Picture 6-30

3. Information

User may search device name, device number, device type, MAC address, software version, IE version and hardware version of DVR shown as Picture 6-31.



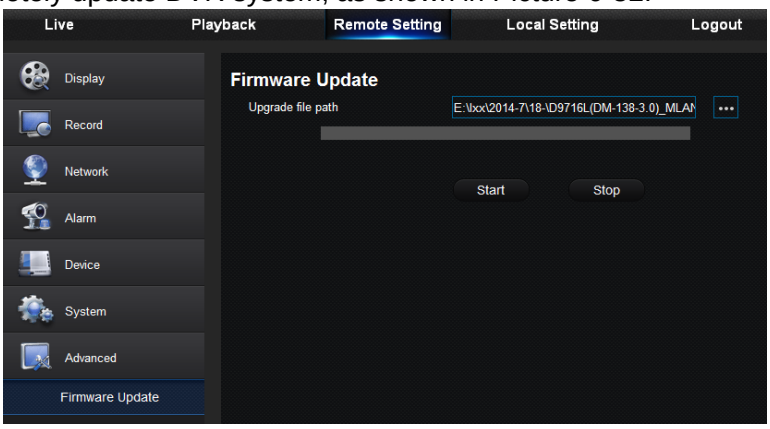
Picture 6-31

6.3.8 Advanced

Click Advance to unfold its sub-options: Firmware Update, Load default, Events and Maintain.

1. Firmware Update

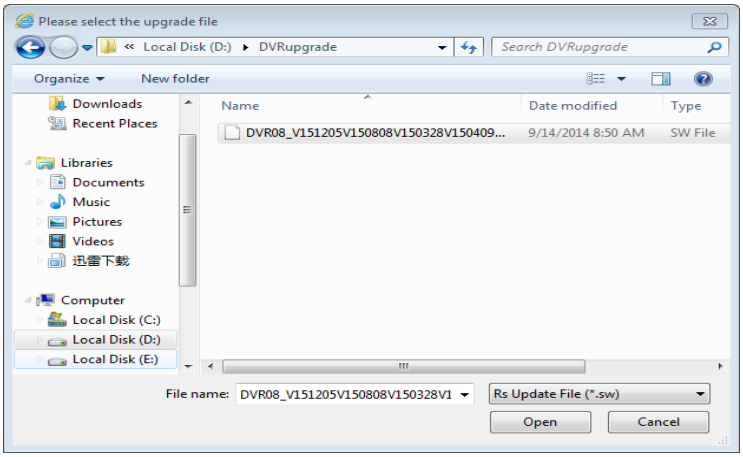
User may remotely update DVR system, as shown in Picture 6-32.



Picture 6-32

Updating procedure:

Firstly, select the update file path. The file format is .sw. Please refer to Picture 6-33.

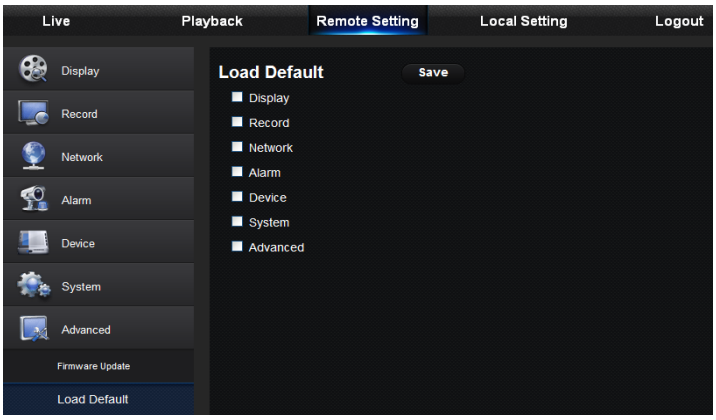


Picture 6-33

Secondly, click “Start” to start updating. The updating progress can be seen on the screen.

2. Load Default

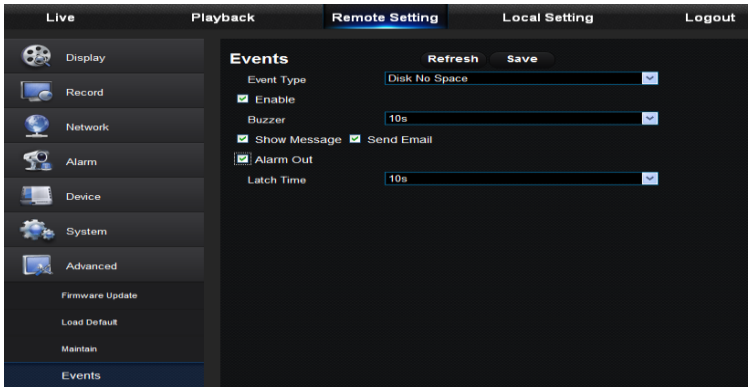
User may remotely restore default parameters of DVR, with same setting method as that of DVR, shown as Picture 6-34.



Picture 6-34

3. Events

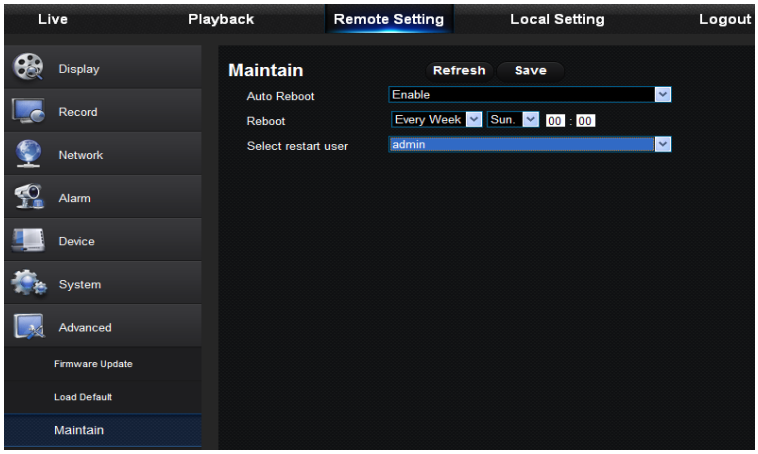
User may configure Event Type, Buzzer, Send Email, Show Message and other parameters shown as Picture 6-35. Detailed setting should be consistent with DVR local setting.



Picture 6-35

4. Maintain

Allow you remotely set auto maintain time for DVR shown as Picture 6-36. Detailed setting should be consistent with DVR local setting.



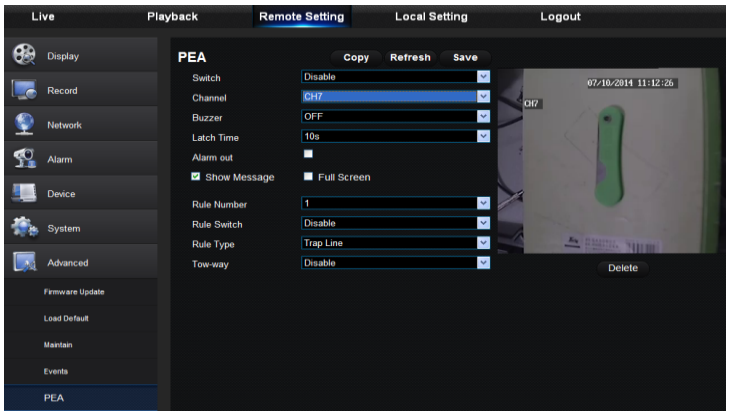
Picture 6-36

5. PEA, Perimeter and Trip Line setting

Perimeter: It refers to the prohibited area with any shape set by user in the field of view. In the area, the appearance and entry of the specified type of target will be detected. The specified area and type of target can be set in the client.

Trip line: It is also called Guard Line, set by user to mark prohibited direction in the field of view. When the specified type of target crosses the line and move in the same direction as the prohibited direction, it will alarm.

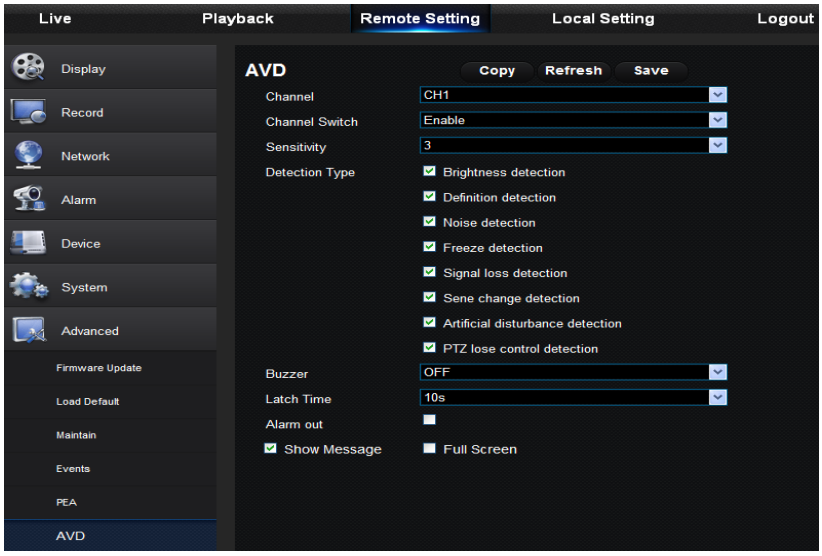
Detailed setting should be consistent with DVR local setting. Refer to Picture 6-37.



Picture 6-37

6. AVD Exception Detection

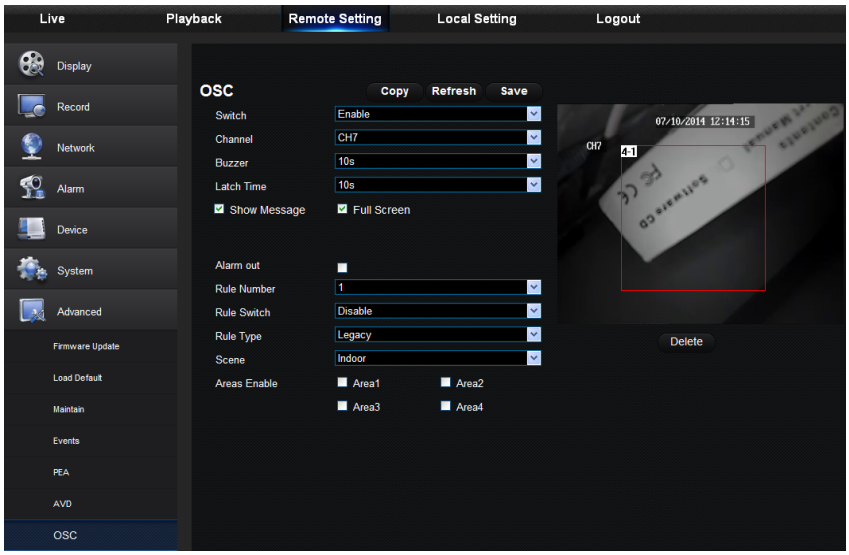
Totally 8 kinds of detection items: Brightness detection, Definition, Noise, Freeze, Signal loss, Scene change, Artificial disturbance, PTZ lose control. Detailed setting should be consistent with DVR local setting. Refer to Picture 6-38.



Picture 6-38

7. OSC Exception Detection

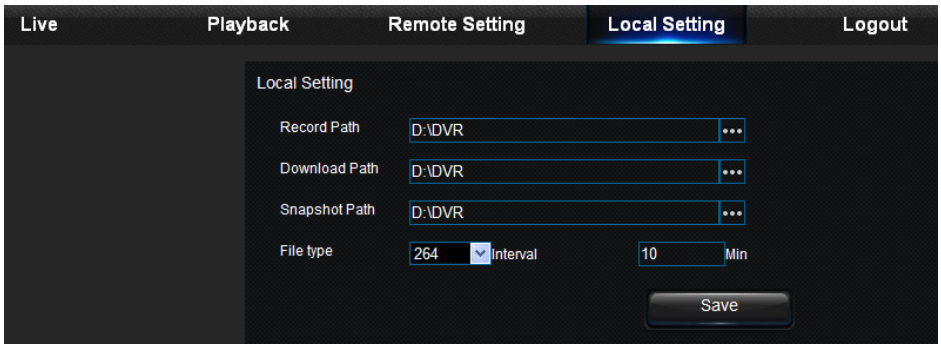
OSC includes two functions, i.e. legacy detection and lost detection. OSC can set up to 4 rules in a channel and each rule can be set as either legacy or lost. It can set up to 4 monitoring areas for each rule, so it can set up to 16 detection areas for each channel. Detailed setting should be consistent with DVR local setting. Refer to Picture 6-39.



Picture 6-39

6.3.9 Local Setting

User may set Record Path (save Live record and Playback clip file), Download Path for remote file, Snapshot Path for captured pictures, Interval for switching record files (Packaging time), and File type (H264 and AVI) shown as Picture 6-40.



Picture 6-40

6.3.10 Logout

Click Logout to log out and return to the login interface.

Chapter 7 Appendix

7.1 Troubleshooting

1. Q: What can I do if the system does not detect the HDD?
   A: Check if the power supply system is properly connected and data cord and power cables are securely connected, and if something wrong with the HDD interface. Or you may check if your HDD is supported by referring to the specifications or descriptions.
2. Q: I have changed the password but forget the new password, how can I access the system?
   A: If you forget system password, please consult with our technical personnel. We strongly suggest user to set password easy to be remembered and relatively safe. If you have safety requirement, please do not set very simply password, such as 000000.
3. Q: We see abnormal video signal or even no video signal by connecting the DVR and camera together. Power supply for both devices is OK. What is wrong?
   A: Check network cable at DVR side to see if the cable is firmly connected and if it is worn out and needs to be replaced, or to check if NTSC or PAL is selected consistently.
4. Q: How to prevent DVR from being influenced by heat?
   A: The DVR needs to dissipate heat while it is running. Please place the DVR in a place with good air circulation and away from heat sources to ensure stability and life of the DVR.
5. Q: The remote controller of DVR doesn't work while the monitor screen is OK and panel keys are functional. Why?
   A: Operate again by aiming the remote controller at the IR receiver on front panel. If it still doesn't work, please check if the batteries in the remote controller are dying. If not, check if the remote controller is broken.
6. Q: I want to take out HDD from my PC and install it in DVR. Can it work?
   A: All HDDs supported by the system can be used. But remember, once DVR runs, the data on your HDD will be lost.
7. Q: Can I playback while recording?
   A: Yes. The system supports the function of playing while recording.
8. Q: Can I clear some records on HDD of DVR?
   A: In consideration of the file security, you may not clear part of records. If you want to remove all the records, you can format HDD.
9. Q: Why can't I log in DVR client?
   A: Please check if the network connection settings are correct and RJ-45 port is with good contact. And check if your account and password are correctly input.
10. Q: Why can't I find any records during playback?
    A: Please check if the data line connection for HDD is OK and system time is properly adjusted. Try a few times and restart. If it still doesn't work, check if the HDD is broken.
11. Q: Why DVR cannot control PTZ?
    A: Please check if:
    1. PTZ in the front side is malfunctioned.
    2. Setting, connection and installation of PTZ decoder are not correct.
    3. PTZ setting of DVR is not correct.
    4. Protocol of PTZ decoder does not match that of DVR.
    5. Address of PTZ decoder does not match that of DVR.
    6. If many decoders are connected, the farthest side of AB line of PTZ decoder should be added 120Ω resistance to realize reflection suppression and impedance matching. Otherwise, PTZ control will be unstable.

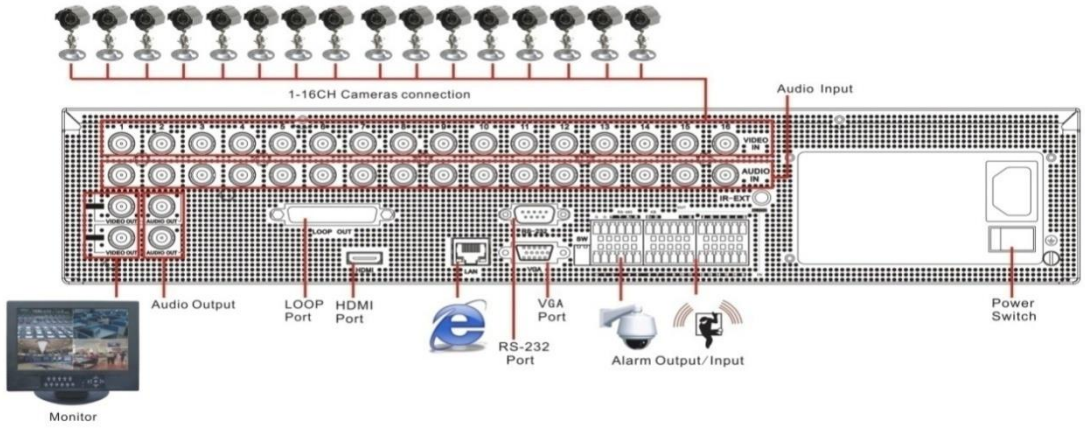
12. Q: Why doesn't dynamic detection work?
    A: Please check if the motion detection time and motion detection regional setting are correct and if the sensitivity is set too low.
13. Q: Why doesn't alarm work?
    A: Please check if the alarm setting, alarm connection and alarm input signals are correct.
14. Q: Why does buzzer keep alarming?
    A: Please check the alarm setting, check if motion detection function is enabled and object motion is detected all the time and if I/O alarm is set as Always Off. Besides, refer to corresponding HDD alarm setting.
15. Q: Why can't I stop recording by pressing "STOP" button or click "Stop Recording" in context menu?
    A: Pressing Stop or Stop Recording can only stop manual record. If you want to stop Scheduled recording in certain time quantum, please change the setting to No Record. To stop Startup recording, please change record mode to scheduled recording or manual recording. Then you may stop recording by the prescribed methods. And another way of stopping recording is to set channel as Off status in record setting.

7.2 Usage Maintenance

1. To shut down DVR, please firstly shut down the system and then turn off the power. Do not turn off the power directly or HDD data will be lost or damaged.
2. Please keep DVR away from heat sources or places.
3. Clean the internal dust regularly. Make sure the good ventilation of DVR so as to ensure the good heat dissipation.
4. Please do not hot plugging audio and video cables, or cables connected to ports like RS-232 or RS-485. Otherwise the ports will be damaged.
5. Please check the HDD cable and data cable regularly to see if they are ageing.
6. Please prevent the audio and video signals of DVR from being intervened by other electronic devices, and prevent the HDD from being damaged by static electricity and induced voltage.

If the network cable is frequently plugged, it is suggested to replace connecting line regularly, or the input signal may be unstable.

7.3 System Connection Diagram



7.4 USB 3G Dongle Support List:

- Huawei E173
- Huawei E367
- Huawei E352
- Huawei E1820
- Huawei E172

Hinweis: Bei falscher Installation und unsachgemäßem Gebrauch im Wohnbereich kann das Gerät Störungen bei Rundfunkgeräten und anderen elektronischen Geräten verursachen. Ein sachgemäßer Gebrauch liegt vor, wenn das Gerät, soweit durchführbar, mit geschirmten Anschlusskabeln betrieben wird (bei Netzwerkprodukten zusätzlich geschirmter Kabel der Kategorie 5e und höher). Das Gerät wurde getestet und liegt innerhalb der Grenzen für Computerzubehör der Klasse A gemäß den Anforderungen nach EN 55022. Warnung: Dieses Produkt entspricht der Prüfklasse A –es kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen. Konformitätserklärung: Das Gerät erfüllt die EMV-Anforderungen nach EN 55022 Klasse A für ITE und EN 55024. Geräte mit externer oder eingebauter Spannungsversorgung erfüllen weiterhin die Anforderungen nach EN 61000-3-2 und EN 61000-3-3. Damit sind die grundlegenden Schutzanforderungen der EMV-Richtlinie 2004/108/EC erfüllt. Die CE-Konformität wurde nachgewiesen. Die entsprechenden Erklärungen sind beim Hersteller hinterlegt.

www.assmann.com
ASSMANN Electronic GmbH
Auf dem Schüffel 3
58513 Lüdenscheid
Germany