

NVR - 10
User's Manual

201104 Revised Version

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NVR -10 includes group management, real time monitoring, recording, playback, and authorized remote playback viewing.

<1> Group Management

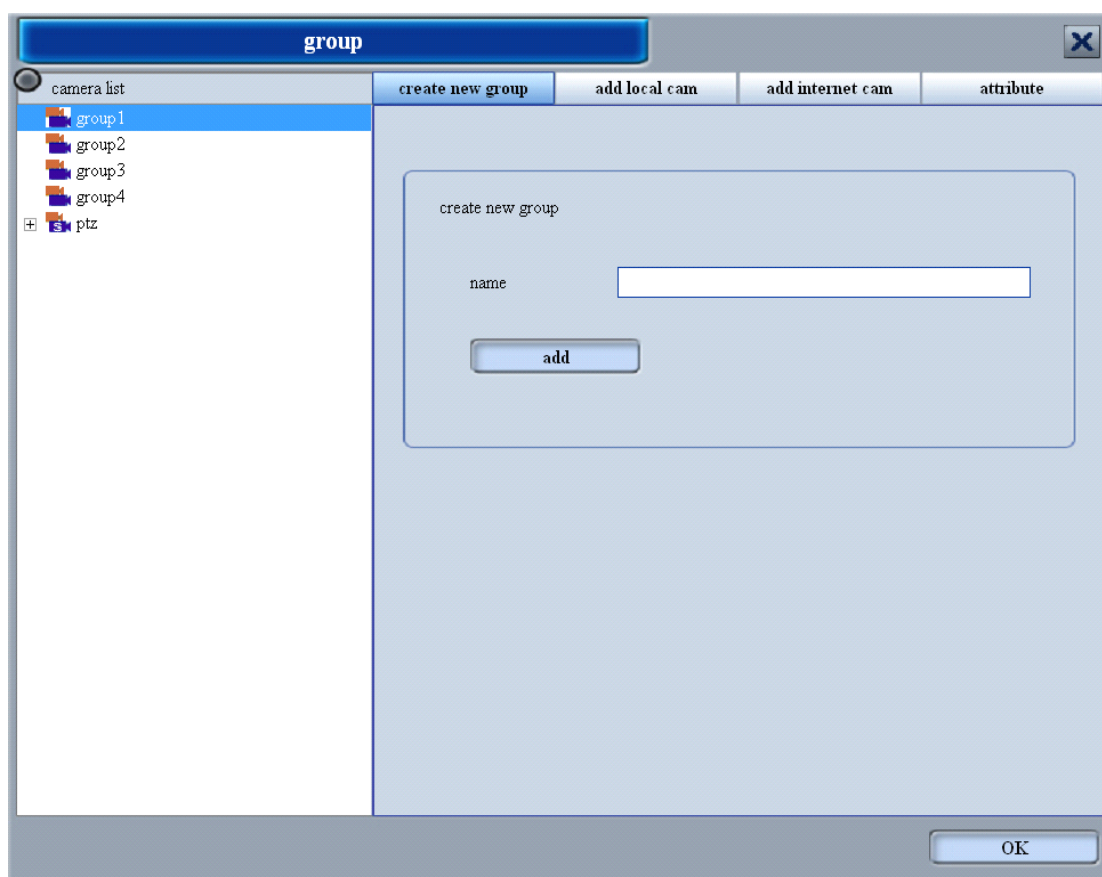
Before using NVR functions, user must add cameras and manage them into groups.

Group management allows users to add groups, local cameras, and network cameras. User may also modify group attributes. (Camera and account attributes)

<1.1> Adding Groups

Before adding cameras, you must add a group first. Put group name into name column, then click add.

Adding Groups



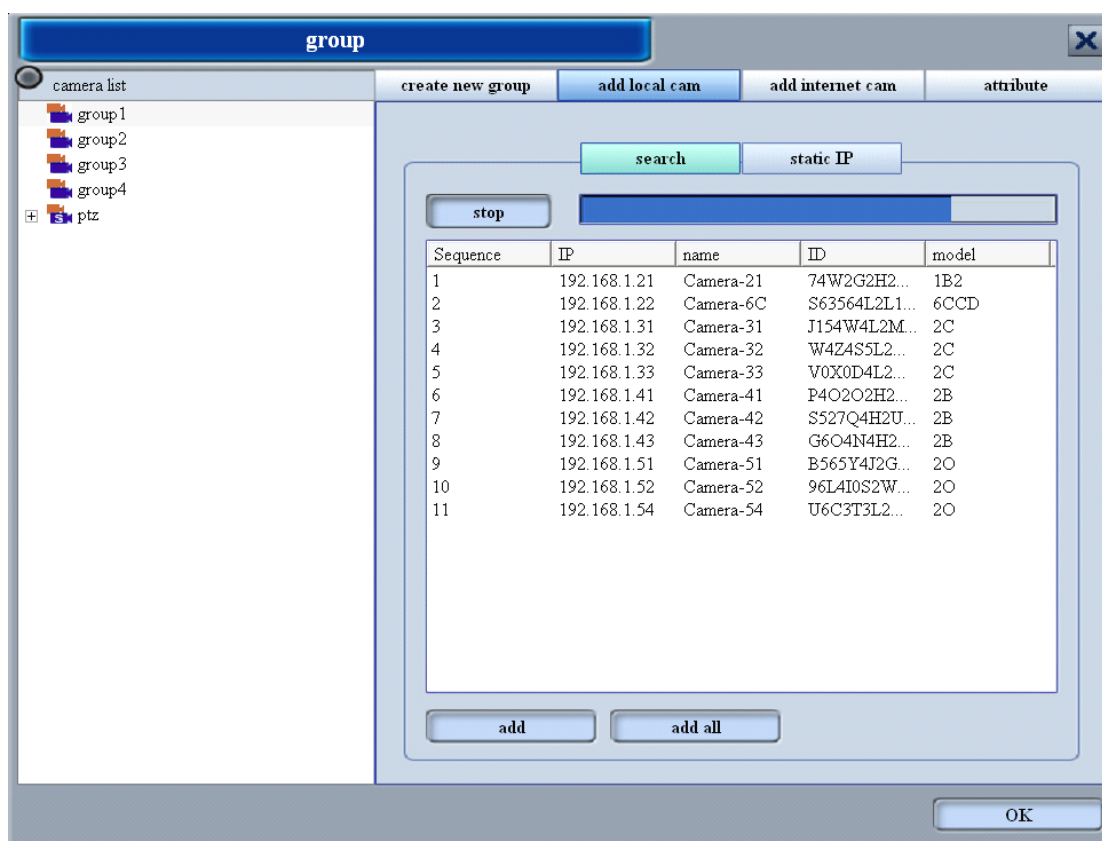
<1.2> Adding local cameras

Local camera can be added in two ways, by searching or adding the static IP.

By Searching:

Click Search, NVR will search for all cameras in LAN, user can add camera one by one or all at once to specific group.

Camera may be sorted by its IP, name, serial number, or model.



By adding static IP:

Input camera IP, name, and camera password and select the group to be added in.

The screenshot shows the 'group' configuration window. The 'camera list' tab is active, displaying a tree structure of camera groups. The 'add internet cam' tab is selected, showing a form for adding a camera with static IP. The form includes fields for IP (192.168.1.34), name (camera-34), password (masked with asterisks), and confirm (masked with asterisks). There are 'search' and 'static IP' buttons at the top of the form area, and an 'add' button at the bottom. An 'OK' button is located at the bottom right of the window.

<1.3>Adding network camera

Network camera can be added in two ways, by account or IP (Port) .

Account:

Select the desired group, then input name, account, password, and server to add.

Groups added by account can not be mixed with groups added by IP.

The screenshot shows a software window titled "group" with a close button (X) in the top right corner. On the left is a "camera list" pane containing a tree view with "group1", "group2", "group3", "group4", and "ptz". The main area has four tabs: "create new group", "add local cam", "add internet cam" (which is selected), and "attribute". Inside the "add internet cam" tab, there are two sub-tabs: "account" (selected) and "IP (Port)". The "account" sub-tab contains four input fields: "account" (with "ptz" entered), "server" (with a dropdown menu showing "China"), "password" (with "***" entered), and "confirm" (with "***" entered). Below these fields is an "add" button. At the bottom right of the main window is an "OK" button.

IP (Port) :

To add a network camera through IP (port) , it is required to add a group first.

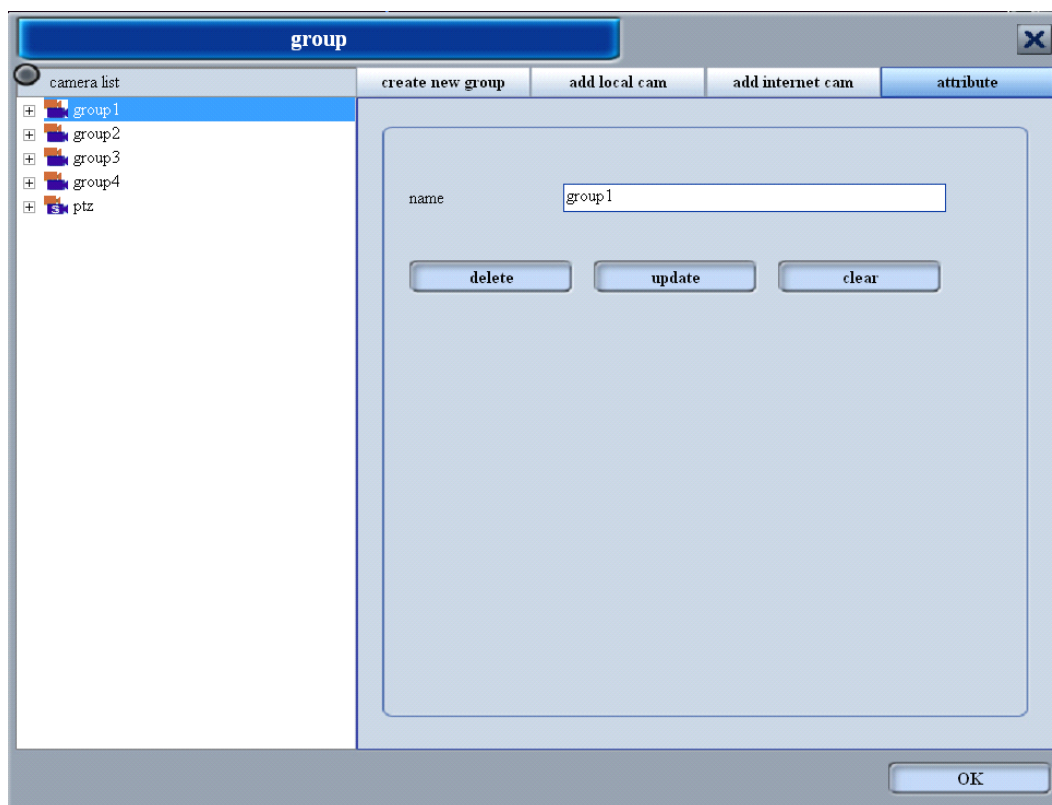
Input remote router or camera IP (router or camera is directly connected to public network) , Port number (default as 3478), name, and camera password.

The screenshot shows the 'group' configuration window. The 'camera list' tab is active, displaying a list of camera groups: group1, group2, group3, group4, and ptz. The 'add internet cam' tab is selected, showing a form for adding a new internet camera. The form has two sub-tabs: 'account' and 'IP (Port)'. The 'IP (Port)' sub-tab is active, showing fields for 'IP' (60.191.34.155), 'port' (3478), 'name' (Camera-15), 'password' (*****), and 'confirm' (*****). An 'add' button is at the bottom of the form. An 'OK' button is at the bottom right of the window.

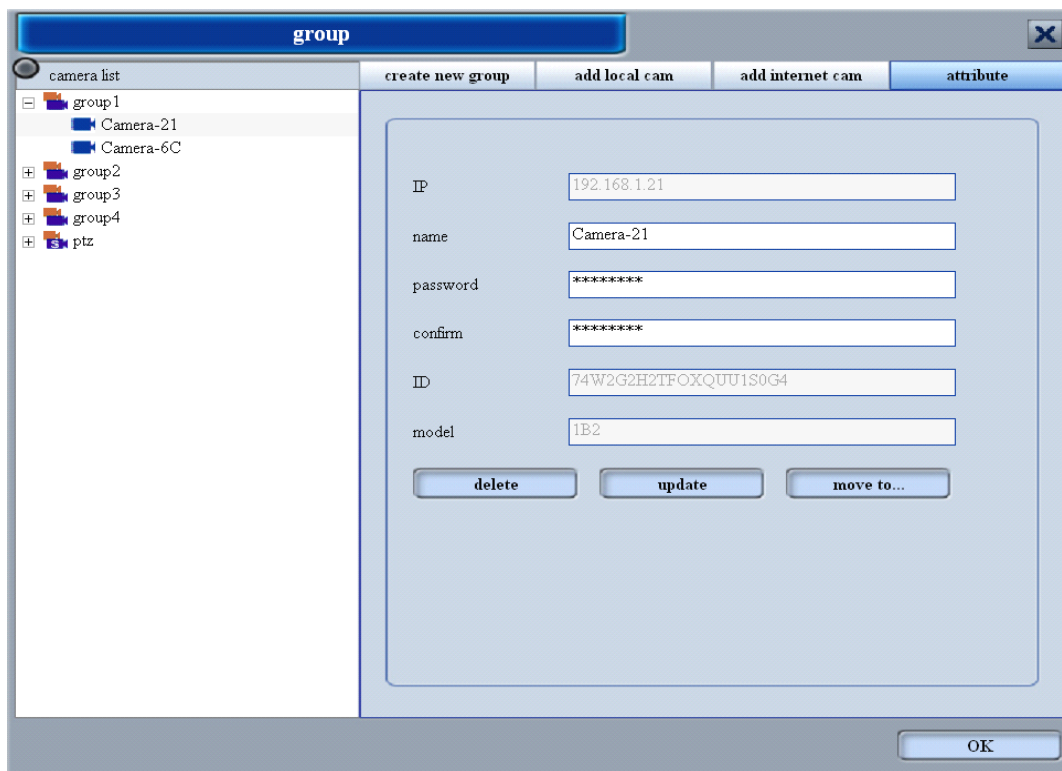
<1.4>Attributes

User may modify local groups, local cameras, account, and network cameras.

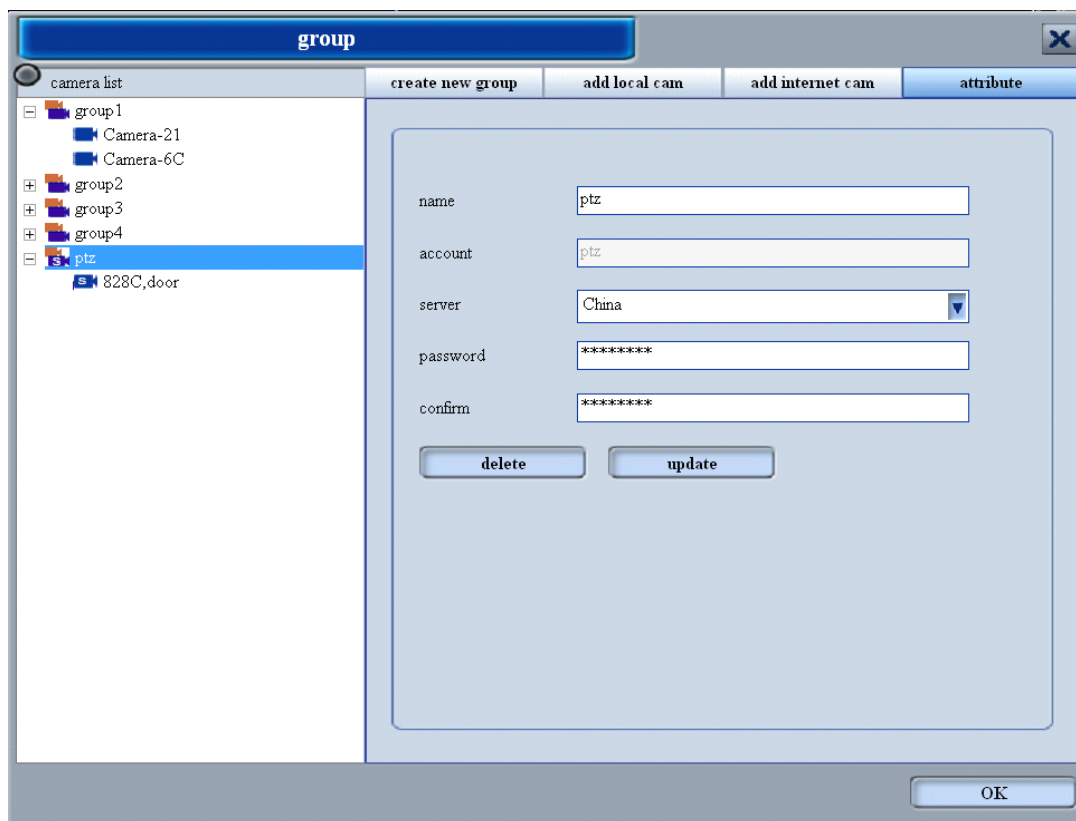
User may modify group names, delete groups, and clear camera operations.



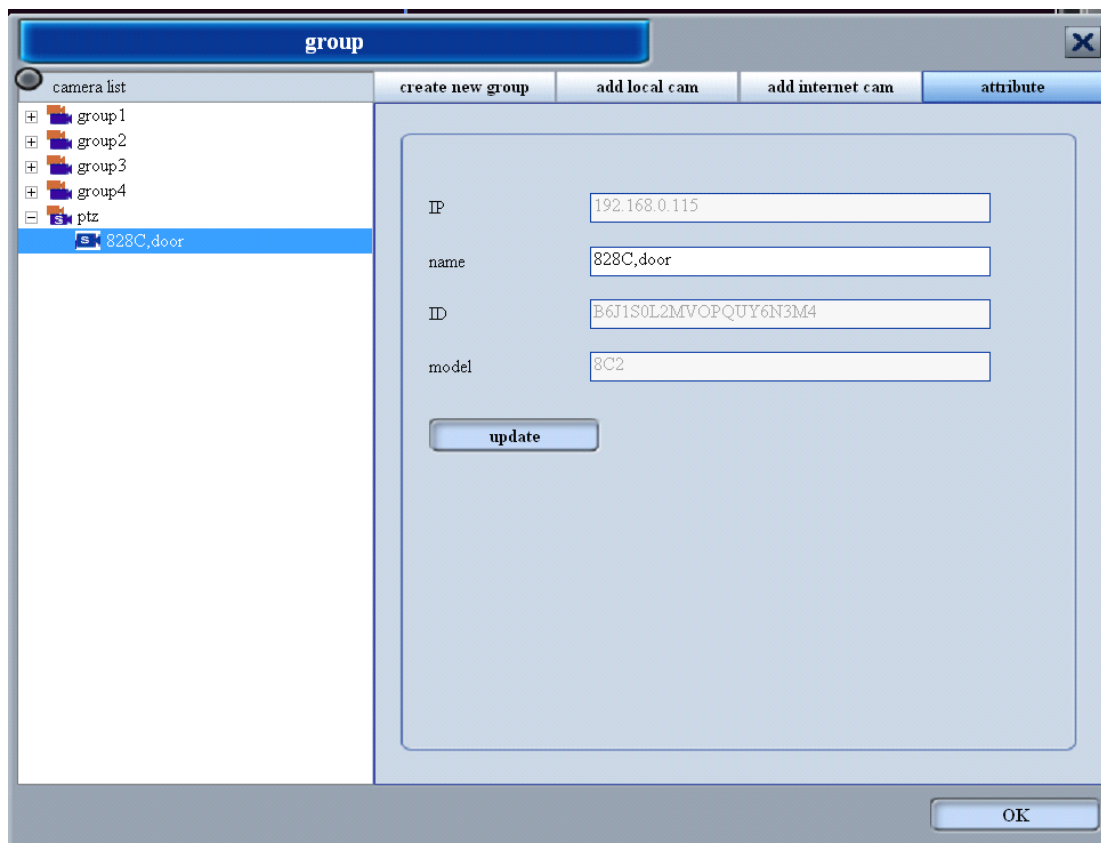
User may modify camera name, delete camera, or move camera to another group.



User may modify account name, server, or delete account.



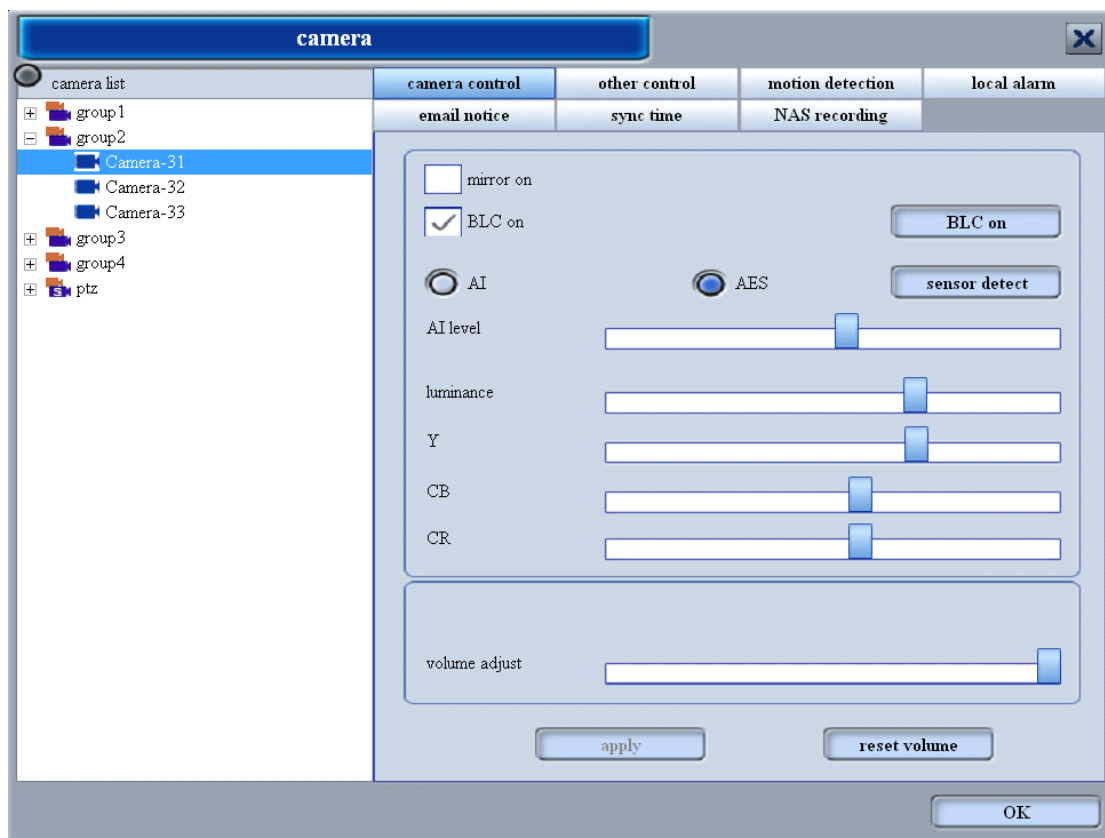
User may modify camera name



<2>Camera settings

The camera settings include six major functions: camera control, other controls, motion detection, local alarm, E-mail alarm and synchronization. Before setup, user must select camera wished to be modified.

<2.1>Camera control



The two types of camera control: CMOS和CCD

CMOS camera controls:

- **Mode:** User may choose out of the four environment modes.
- **Zoom:** User may adjust the zoom of the image
- **Banding Filter:** User may choose between 50Hz or 60Hz.
- **Sharpness, brightness, gain:** May be adjusted by user.
- **Effect:** Special effects for the image

mode

☐ indoor mode ☒ outdoor mode

☐ night mode ☐ auto

☒ banding filter

☐ 50 HZ ☒ 60 HZ

☐ vert mirror ☐ hori mirror

sharpness

brightness

gain

volume adjust

special filters normal ▼

apply reset volume

CCD camera controls:

mode

☐ indoor mode ☒ outdoor mode

☐ night mode ☐ auto

☒ banding filter

☐ 50 HZ ☒ 60 HZ

☐ vert mirror ☐ hori mirror

sharpness

brightness

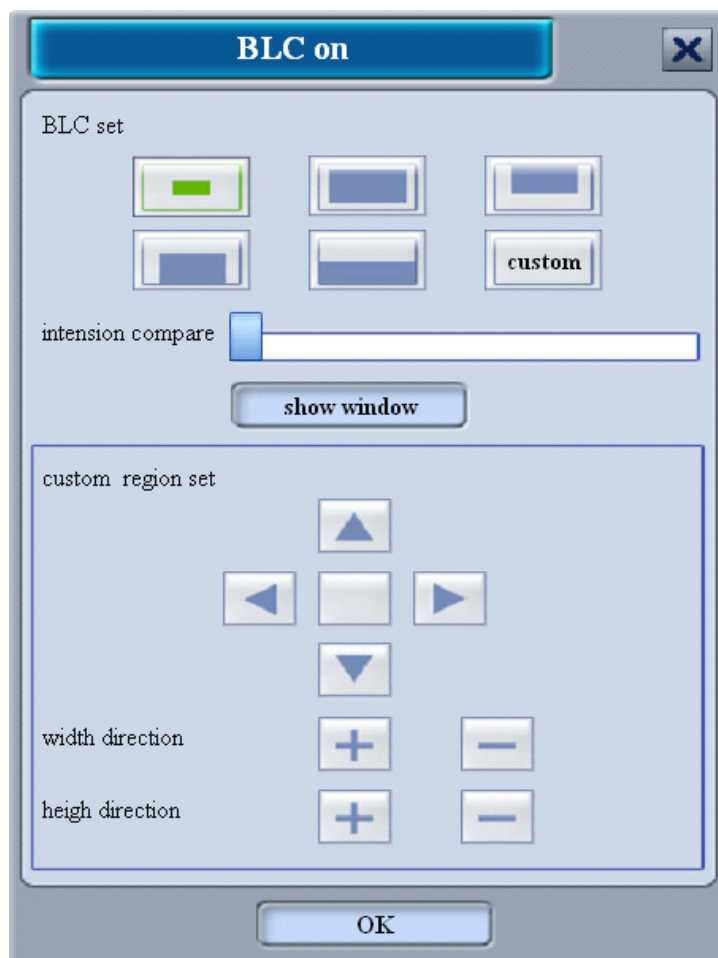
gain

volume adjust

special filters normal ▼

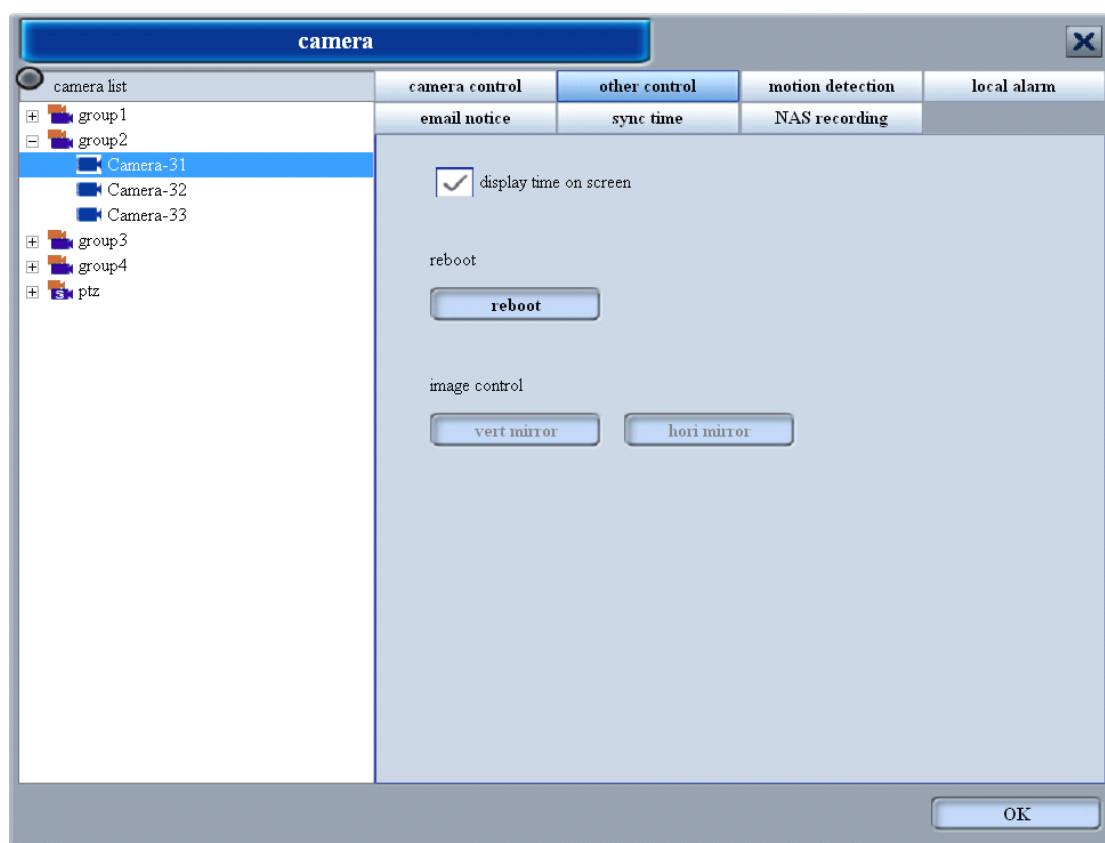
apply reset volume

- Backlight Compensation: There are six regional backlight compensation set as default, user may also customize backlight compensation. After choosing desired region, user may adjust the strength of the backlight compensation.



- **AI:** Auto aperture. When external, AI must be selected. After AI is selected, you may adjust it.
- **AES:** Automatic electronic shutter
- **Y:** Brightness combination
- **CB:** Blue polarized light
- **CY:** Yellow polarized light

<2.2>Other Controls



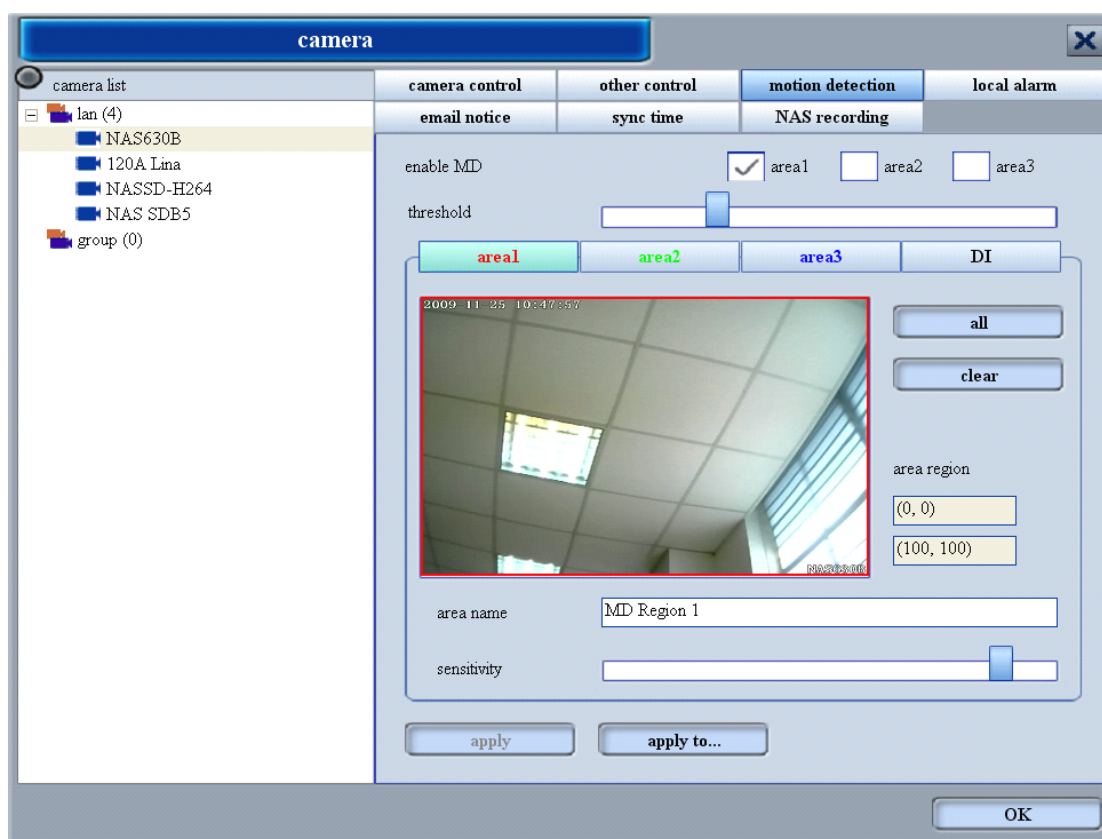
User may switch on or switch off the timer on the camera screen.

Video input source: User may choose between Composite or S-Video.

System control: User may reboot camera.

Vertical and Horizontal mirror: User may adjust image.

<2.3>Motion Detector



Regional Choice: User may choose up to three regions.

Opening motion detector: Check the region wished to open.


Threshold: User may adjust the threshold of the motion detector.


Sensitivity: User may adjust the sensitivity of the motion detector.

Regional name: User may have a name for a regional motion detector, that name will be used on the e-mail alarm.

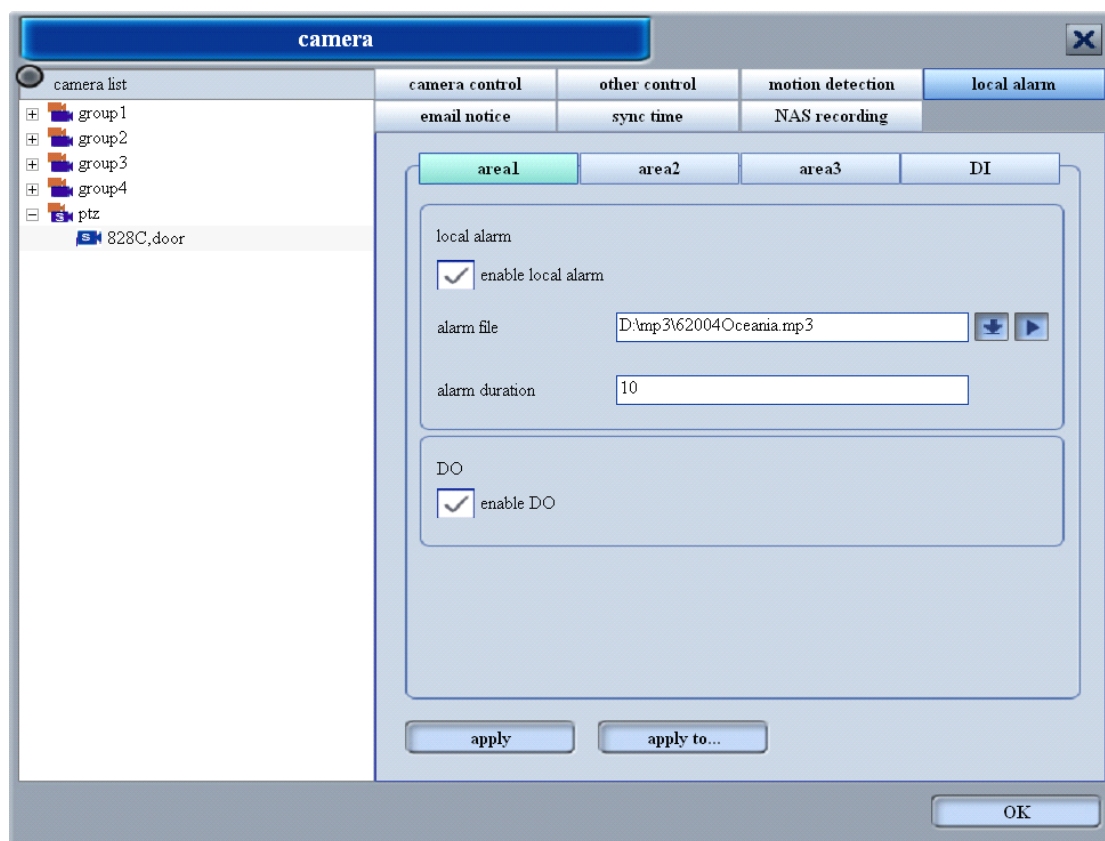
If user wishes to do the same for other cameras, user may use the “apply to...” function.

After Setup, selected camera will show three little men at the bottom-left corner.

: represents all regions are detecting motion, different colors represent different regions.

: When the all lights go off, that means no motion is detected.

<2.4>Local Alarm



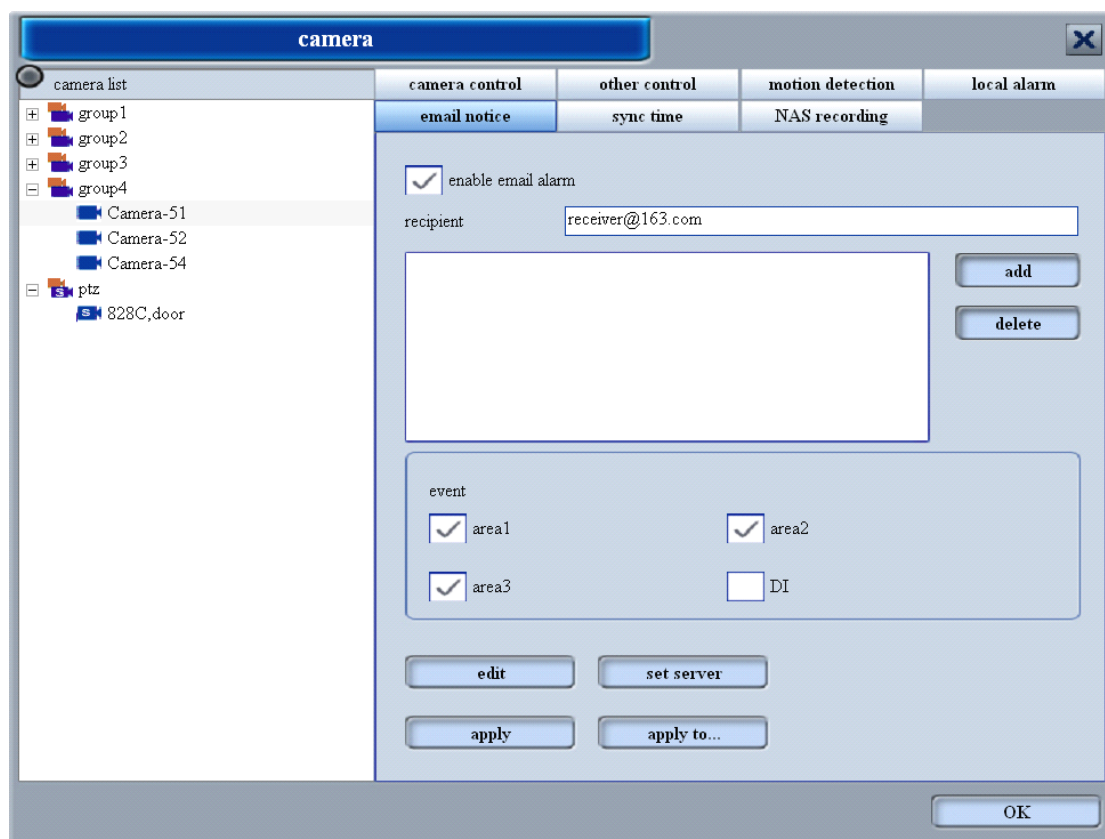
Once alarm is activated, the alarm will notice user once motion is detected

Alarm sound can be chosen by user. User may setup the alarm length, if not, default is around 5 seconds.

User may setup the alarm output after DO input.

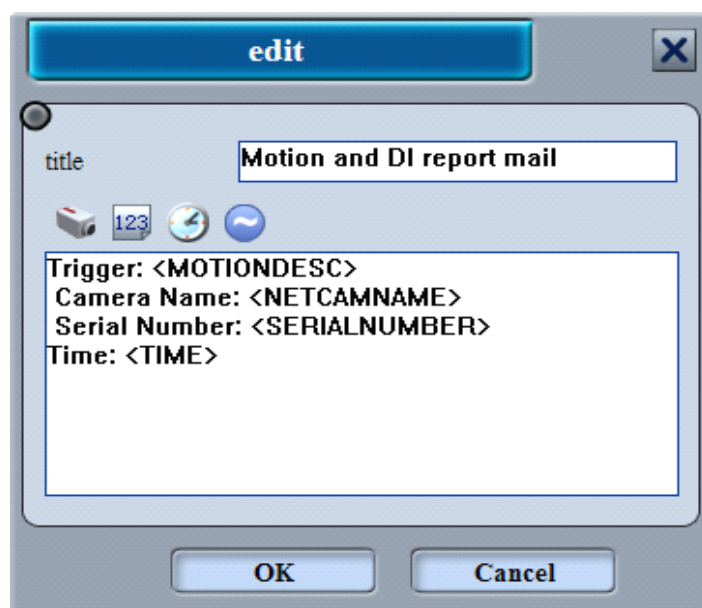
<2.5> E-mail Alarm

If e-mail alarm is activated, the system will send an e-mail alarm when motion is detected.



User may add or delete e-mail recipients.

Click “E-mail edit” to change the subject of the mail.



The four icons are as following: camera name, serial number, alarm time, and alarm region.

System has a default setting:

Server Settings: Verification is needed for the sender. Input mail server, sender, and sender's account and password.



The image shows a 'set server' dialog box with the following fields and values:

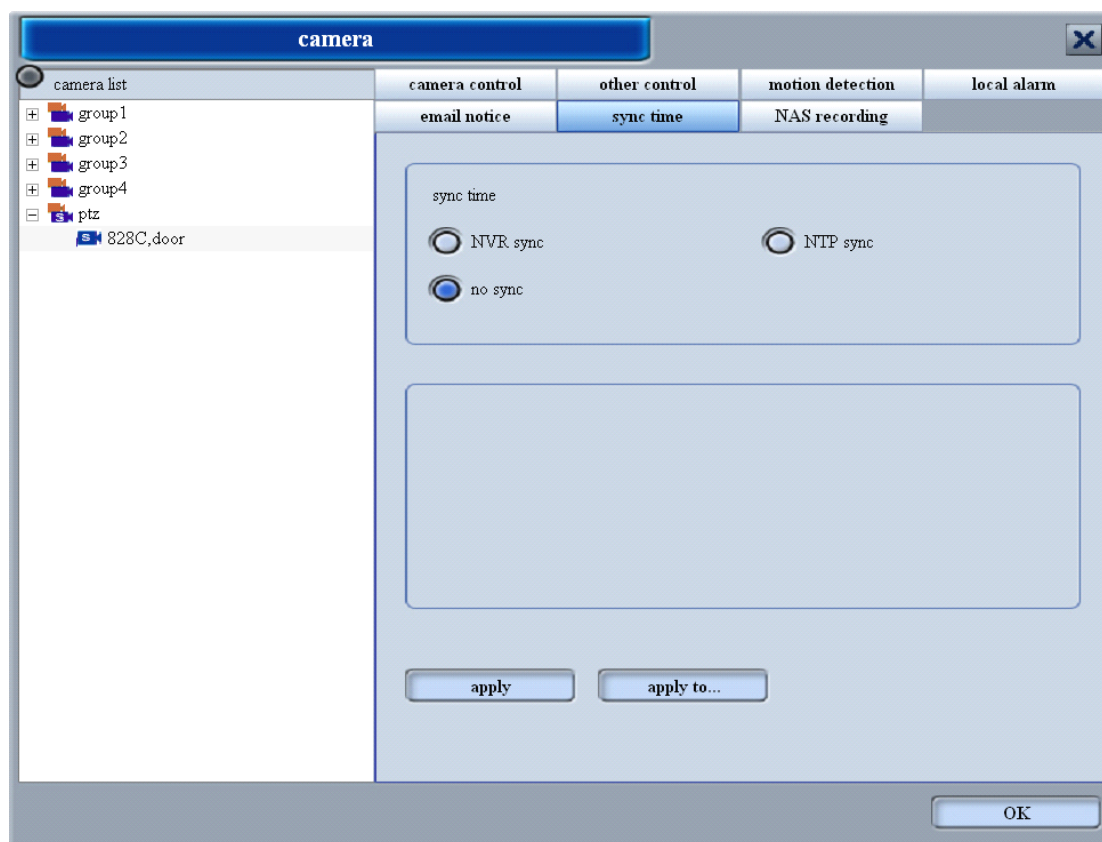
Field	Value
server	smtp.sina.com.cn
sender	mdsender@sina.com.cn
verify	<input checked="" type="checkbox"/>
account	mdsender
password	*****
confirm	*****

At the bottom of the dialog are 'OK' and 'Cancel' buttons.

<2.6> Time Synchronization

There are three ways to set time synchronization: NVR time sync., NTP time sync., and no time sync.

When it is set as no time sync., nothing will change.



When using NVR time sync., NVR automatically reads the clock displayed on the computer. If the time is still not correct, modify the time on the computer.

The screenshot shows a web-based interface for NVR time synchronization. It features two main sections. The top section, titled 'sync time', contains three radio buttons: 'NVR sync' (which is selected), 'NTP sync', and 'no sync'. The bottom section, titled 'NVR time', contains a text input field displaying the date and time '2008-08-21 11:31:49'. At the bottom of the interface are two buttons: 'apply' and 'apply to...'.

sync time

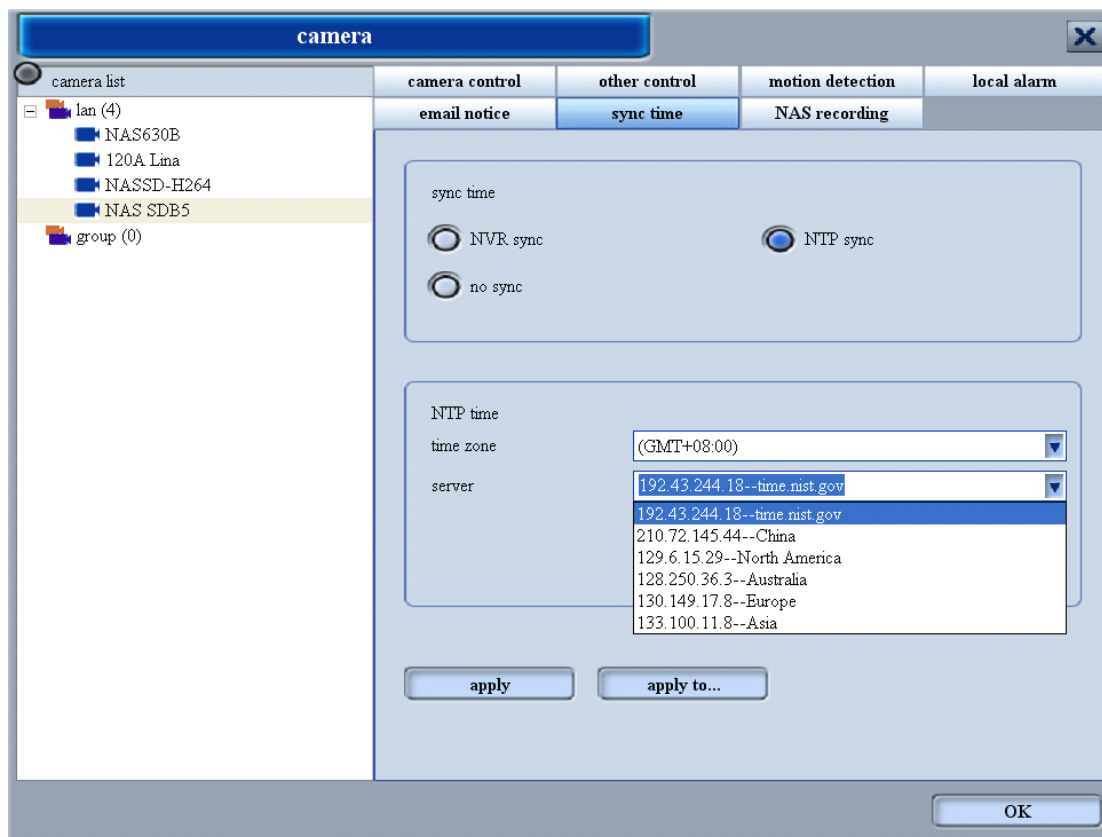
☒ NVR sync ☐ NTP sync ☐ no sync

NVR time

2008-08-21 11:31:49

apply apply to...

When using NTP time sync., it is only required to setup time zone and time server.



After setup, use “Apply to...” to apply to another camera.

<2.7>NAS Recording

The screenshot shows the 'NAS recording' configuration window. On the left, the 'camera list' shows a tree structure with 'lan (4)' containing several cameras, with 'NAS SDB5' selected. The main panel has tabs for 'camera control', 'other control', 'motion detection', and 'local alarm'. The 'motion detection' tab is active, and within it, the 'NAS recording' sub-tab is selected. The configuration options include:

- ☒ start NAS recording
- ☒ enable audio
- storage limit (MB): 5000
- storage policy: ☒ overwrite, ☐ stop when full
- recording mode: ☒ normal recording, ☐ event recording
- motion detection areas: area1, area2, area3, DI (each with a small square icon)
- FPS: 1/4 of max FPS (dropdown)
- RES: mid resolution (dropdown)
- BPS: a slider bar
- NAS connection fields: IP (192.168.0.23), path (nas), account (guest), password (empty), and confirm (empty)

 At the bottom right are buttons for 'apply', 'apply to...', and 'OK'.

When launched NAS recording, the recorded file will be saved to the NAS device.

NAS settings:

IP: NAS IP address

Path: NAS recording save path.

Account: Username of save folder.

Password: Password of save folder.

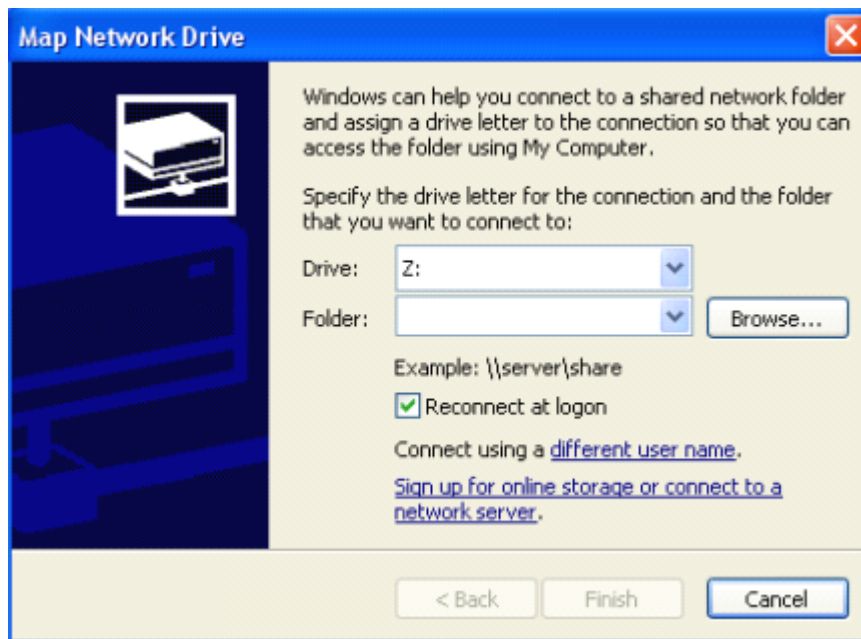
When normal recording is selected, directly starts real-time recording on NAS device.

When event recording, you must set the regions for motion detection before hand.

When motion is detected, the image will be recorded on the NAS device.

NAS playback: Makes NAS save path mapped to local drive

Open "My computer", and select "Network device mapping (N) " under "tools"



Insert the NAS save path.

Ex: \\192.168.1.253\record

Click finish to map to local drive. Then add the driver on the selection window when playback.

NAS image quality is affected by the following:

- 1> Only under the circumstances of NAS recording, the image quality is determined according to the FPS and RES in video settings.
- 2> When recording on SD card and NAS at the same time, the image quality is determined according to the recording quality of miniDVR in setup.
- 3> When NVR is enabled during NAS recording, the image quality of NAS is determined according to the quality of NVR.

<3>Recording settings

The recording settings are for group operation, not for the operation of a single camera. Thus, you may not have two different camera recording mode in a same group.

The recording settings are split into two parts: basic settings and group settings.

<3.1>Basic Settings

Including recording path, retention time, storage policy and holiday setup.

The screenshot shows the 'storage' settings window. It features a table for recording paths with columns 'ID' and 'path'. The first row shows ID '1' and path 'E:'. To the right of the table is a 'local path' radio button and a 'path' dropdown menu. Below these are 'add' and 'delete' buttons. Further down is a 'retention (days)' input field set to '10'. Below that is a 'storage policy' section with two radio buttons: 'overwrite' (selected) and 'stop when full'. Below the storage policy are two dropdown menus: 'pre recording time (s)' set to '5' and 'post recording time (s)' set to '50'. At the bottom left is a 'holiday setup' button, and at the bottom right is an 'apply' button. The very bottom of the window has 'OK' and 'cancel' buttons.

ID	path
1	E:

The local drive is directly used for local save path. the recording order will be decided by capacity when there is an extra drive.

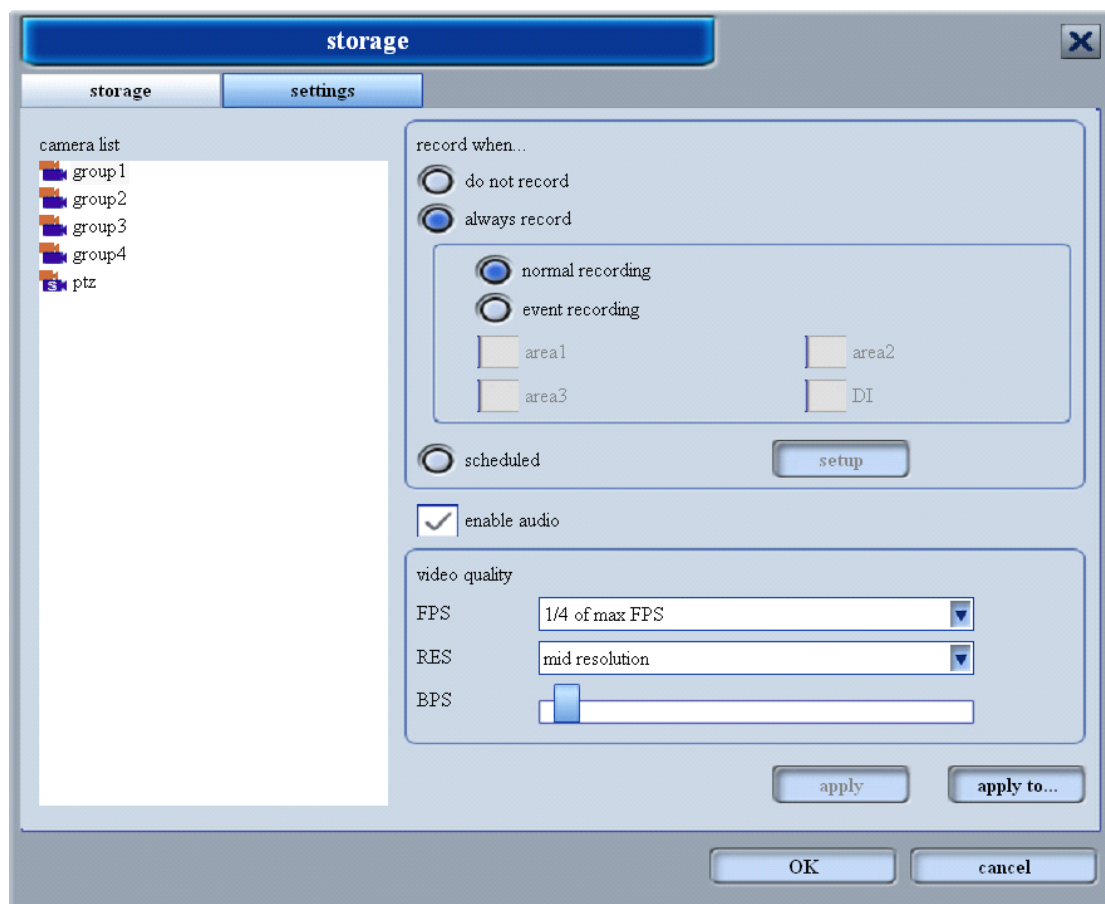
Retention time: The days of recording retention.

Storage policy: User may choose between to overwrite or to stop when maximum capacity is reached.

Holiday setup: choose holiday ,then setting event recording.

Click “apply” to finish and move on the group settings.

<3.2>Group settings

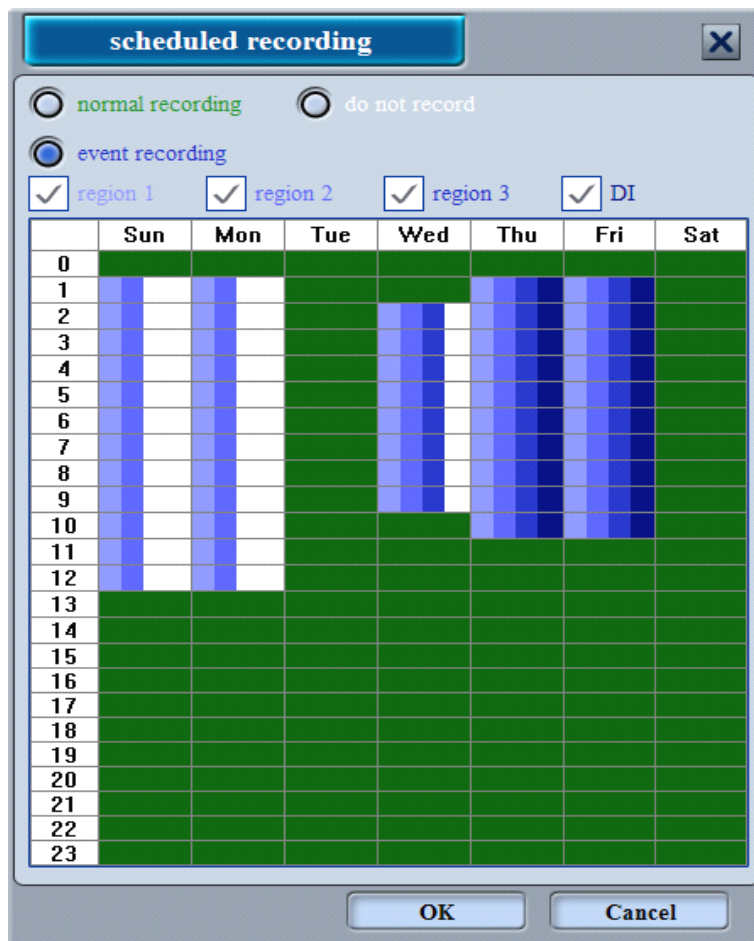


Choose a camera group from the group list. User may adjust the audio, FPS, RES, and BPS of the camera.

Two ways to enable: Always recording and scheduled recording.

Always record have two functions: Regular recording and event recording. Regular recording is set as default. It is required for users to set motion detection for event recording. The camera will record once motion is detected.

Scheduled recording requires schedule settings.



Regular recording: Select the time-frame wished to be recorded. The selected ones will turn bright green.

Event recording: Select the detection region, then select the time-frame wished to be recorded. The selected region will turn into different colors of blue.

If user wishes to cancel the time-frame, user must select no recording first.

Recording schedule chart shows the week (7 days) and time (24 hours).

User can choose to include audio or not.

When recording quality and screen size is set, and the camera is recording, User may not modify camera settings. You must stop recording, then modify.

<4>Authorization management

Authorization management is used to authorize user visit of NVR.including administrator, common user and remote user.

Administrator and common user are used to manager NVR.

Remote user is used to visit NVR by client.

The screenshot shows a software window titled "user" with a close button in the top right corner. Inside the window, there are three tabs: "user list", "add user", and "attributes". The "add user" tab is currently selected. On the left side of the "add user" tab, there is a "user list" section showing three entries: "administrator", "comm user", and "remote user". The main area of the "add user" tab contains several form fields: "user type" (a dropdown menu set to "remote user"), "new user" (a text input field), "password" (a text input field), "confirm" (a text input field), and "priority" (a dropdown menu set to "high"). To the right of the "priority" field is an "add" button. At the bottom right of the window, there is an "OK" button.

<4.1>Add account

Before client visits NVR, it is required to add account in the authorization management, like below, select user type, insert account and password to finish.

user

user list

administrator

comm user

remote user

add user

attributes

grant

user type

remote user

new user

password

confirm

priority

high

add

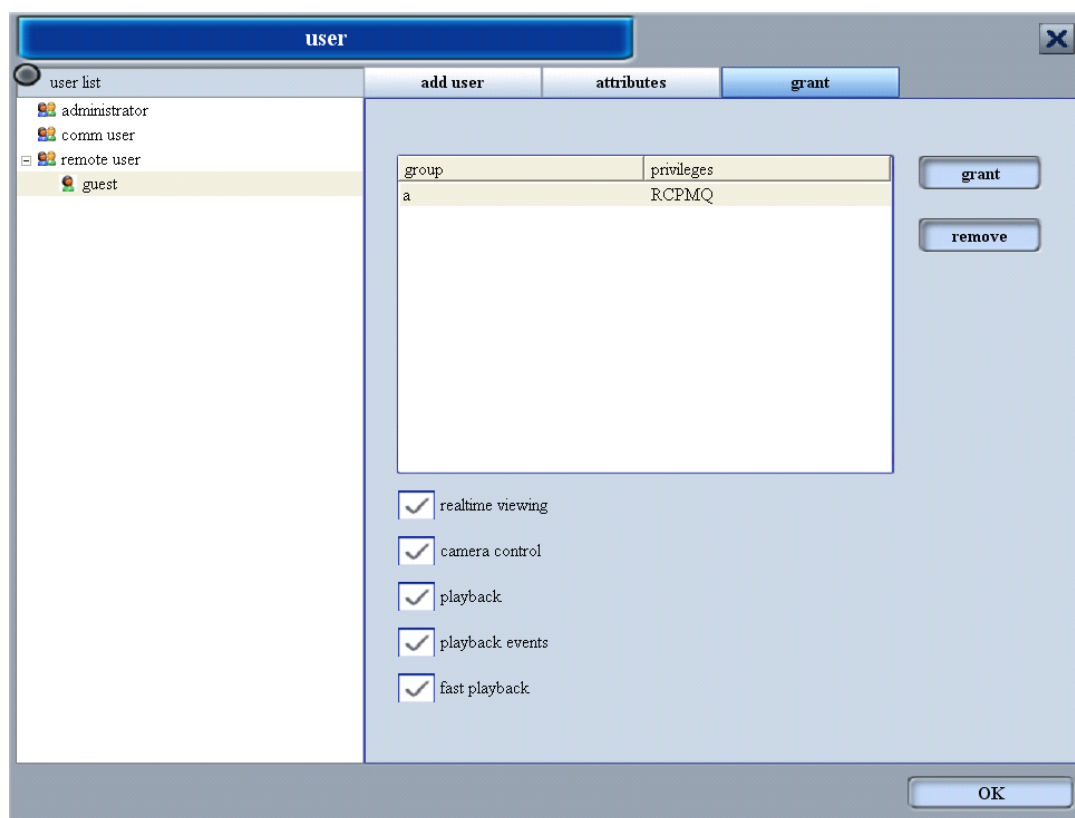
OK

<4.2>Account attributes

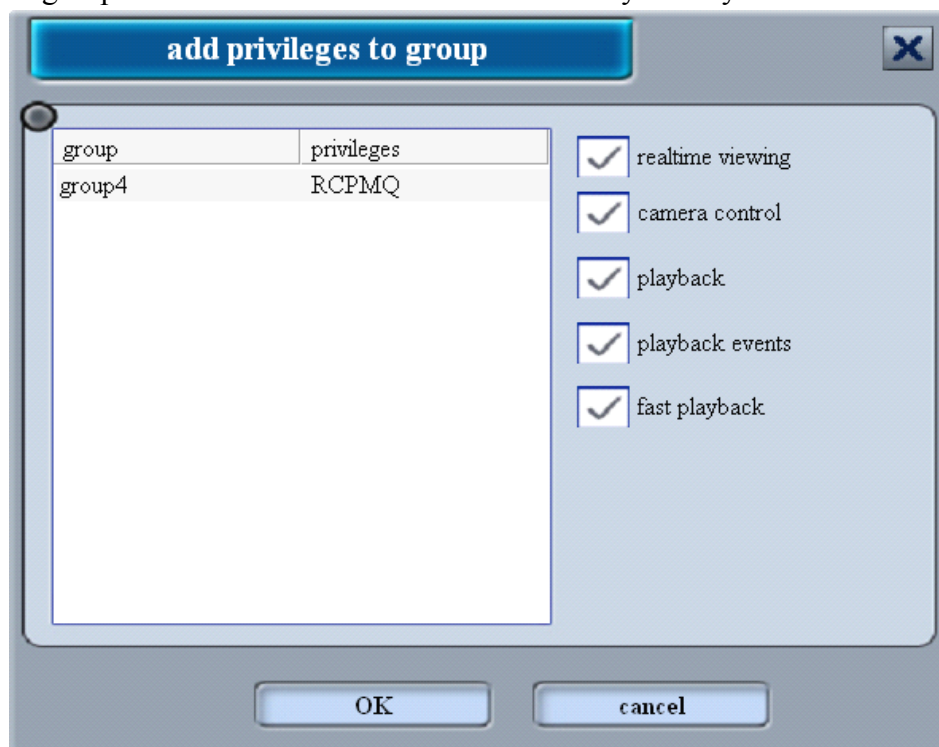
Select added account. Then user may change the password in account attributes.

The screenshot shows a window titled 'user' with a close button in the top right corner. Inside the window, there are three tabs: 'add user', 'attributes' (which is selected), and 'grant'. On the left side, there is a 'user list' panel containing four entries: 'administrator', 'comm user', 'remote user', and 'guest'. The 'remote user' entry is highlighted. The main area of the window displays the attributes for the selected user. These attributes include: 'user type' (a dropdown menu set to 'remote user'), 'user' (a text field containing 'guest'), 'password' (a text field with masked characters '*****'), 'confirm' (a text field with masked characters '*****'), and 'priority' (a dropdown menu set to 'high'). Below these fields are two buttons: 'delete' and 'update'. At the bottom right of the window is an 'OK' button.

<4.3> Authorization



Click the authorize button, select group, then select the authority of the client. Selected group will show a list of authorities. User may modify the authorities.



The following page shows the authorized groups. User may edit the group authorization.

<5>System settings

System settings include startup, M-Server setup and other settings

<5.1>startup

startup setting selects the default each time NVR launches.

The screenshot shows a window titled 'system' with a close button (X) in the top right corner. Below the title bar are three tabs: 'startup' (selected), 'M-Server setup', and 'other settings'. The 'startup' tab contains the following settings:

- ☐ start NVR when bootup
- ☐ enable preview mode
- ☒ open the same group when startup nextti

Below these settings is a section with:

- ☐ enable joystick when startup
- A button labeled 're-enable joystick' to the right of the checkbox.
- A label 'COM port for joystick' followed by a dropdown menu.
- A button labeled 'update' to the right of the dropdown menu.

At the bottom right of the window is an 'OK' button.

User can choose to autorun NVR when windows start.

User can choose to set preview mode as default.

User can choose to allow utility to preserve custom settings each time NVR reboots.

User can choose to open joystick when startup to control speed camera.

Click "ok" to finish setup.

<5.2>M-Server settings

The screenshot shows the 'system' settings window with the 'M-Server setup' tab selected. The 'connect' section includes fields for 'max# of logons' (20), 'max# of links' (100), and 'port of media server' (10005). The 'registration server' section includes an 'availability check' button, an 'IP' field (202.75.218.139), a 'registration name' field (msdnvrccc), and a 'password' field (***). A 'setup' button is located at the bottom left of the tab, and an 'OK' button is at the bottom right of the window.

M-Server include two of the following:

1. The number of authorized users may be controlled by the system. This includes the number of login limitation, the number of camera connection and Media Server port – the port range is 10000~11000.

Login limitation is the maximum number of authorized users that can login the client and view at a time.

2. NVR may be registered on the server. Input a name and password, and it will be registered onto the server.

If selected name inputted is already used, then you may still use it for another NVR, but the password must be the same as the first.

<5.3> Other settings

Auto-flip: the time gap between the flipping of pages, the default is set as 10 seconds.

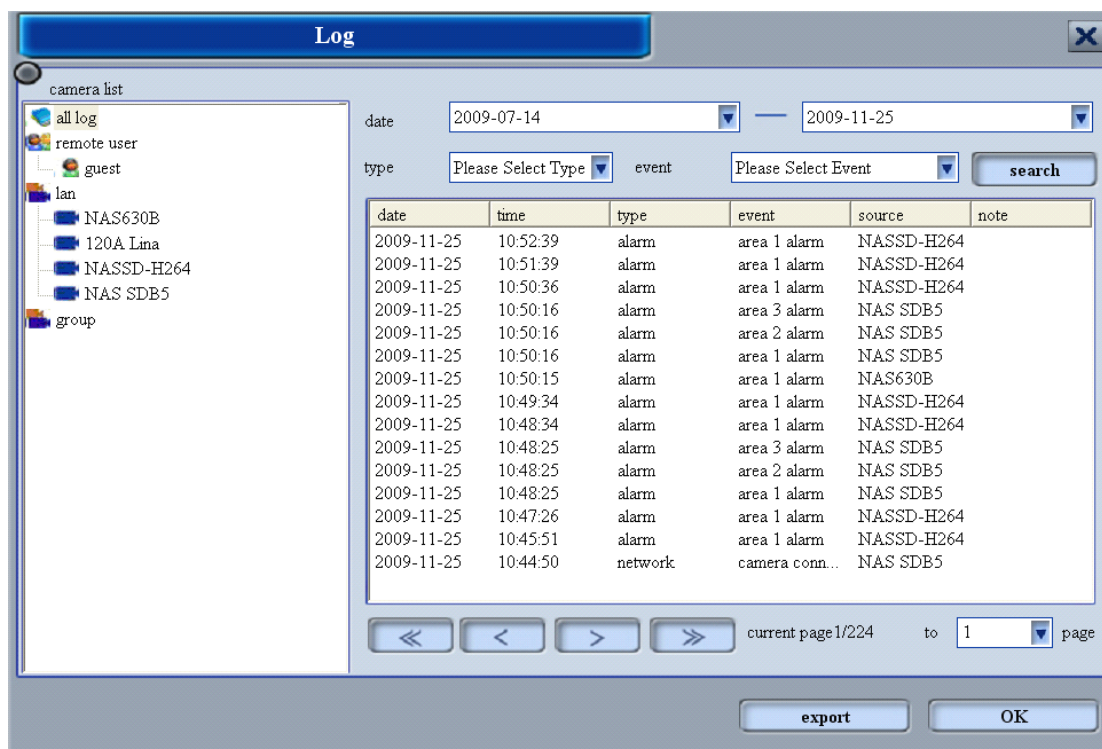
Log retention time: The time of log retention of system, the default is set as 30 days.

Auto lock time: choose auto lock NVR, after auto lock time, no people option NVR, NVR will lock.

The screenshot shows a web-based configuration interface for a system. At the top, there is a blue header bar with the word 'system' in white. Below the header, there are three tabs: 'startup', 'M-Server setup', and 'other settings'. The 'other settings' tab is currently selected. The main content area is light blue and contains several settings. At the top, there is a section labeled 'config NVR'. Below this, there are three input fields: 'auto flip rate (S)' with the value '10', 'retention (days) of log' with the value '30', and 'auto lock time(min)' with the value '10'. To the right of these fields is a checkbox labeled 'auto lock NVR'. Below the input fields is a blue button labeled 'update'. At the bottom of the main content area, there is a checkbox labeled 'shutdown OS', a text box showing the time '11:29:47', and another blue button labeled 'update'. At the very bottom of the window, there is a large blue button labeled 'OK'.

Setting	Value
auto flip rate (S)	10
retention (days) of log	30
auto lock time(min)	10
auto lock NVR	<input type="checkbox"/>
shutdown OS	<input type="checkbox"/>
Time	11:29:47

<6>Log



Users can use the Event Log data base to retrieve the **System, Network, Alarm, and Recording status** and each event happened in each Event Type.

System Type: Start NVR, Close NVR, Logon, Logout, Add User, Remove User, Change Password, Change Rights, Change Privileges, Setup Camera, Add Camera, Remove Camera, Change Camera Name, Add Group, Delete Group, Change Group Name, Change Account Attribute

Network Type: Camera is Offline, Camera Connect Fail, Camera Disconnected, Camera Password Error, Camera Mode Invalid, Camera Connect Successful, Account Connect Fail, Account Login Fail, Account is Occupied

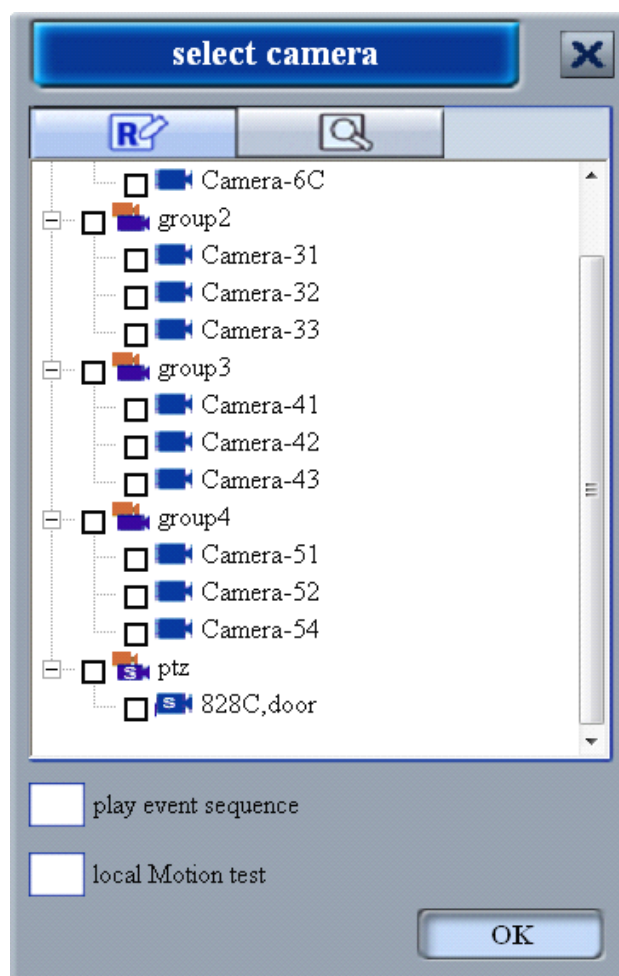
Alarm Type: Area 1 Alarm, Area 2 Alarm, Area 3 Alarm, DI Alarm, Video Loss, Video On,

Recording Type: Enable Recording, Disable Recording, Start Recording, Stop Recording, Disk is Full, Memory is Shortage, Disk IO Error, Disk Full, Stop Recording, Change Recording Policy, Change Recording Setting

When uses hit “Export” icon, the event log list can be exported to PC and saved as a text file.

<7>Playback

Click “select camera” to obtain the camera list.



The camera list has two sources: the group recordings set by NVR and the

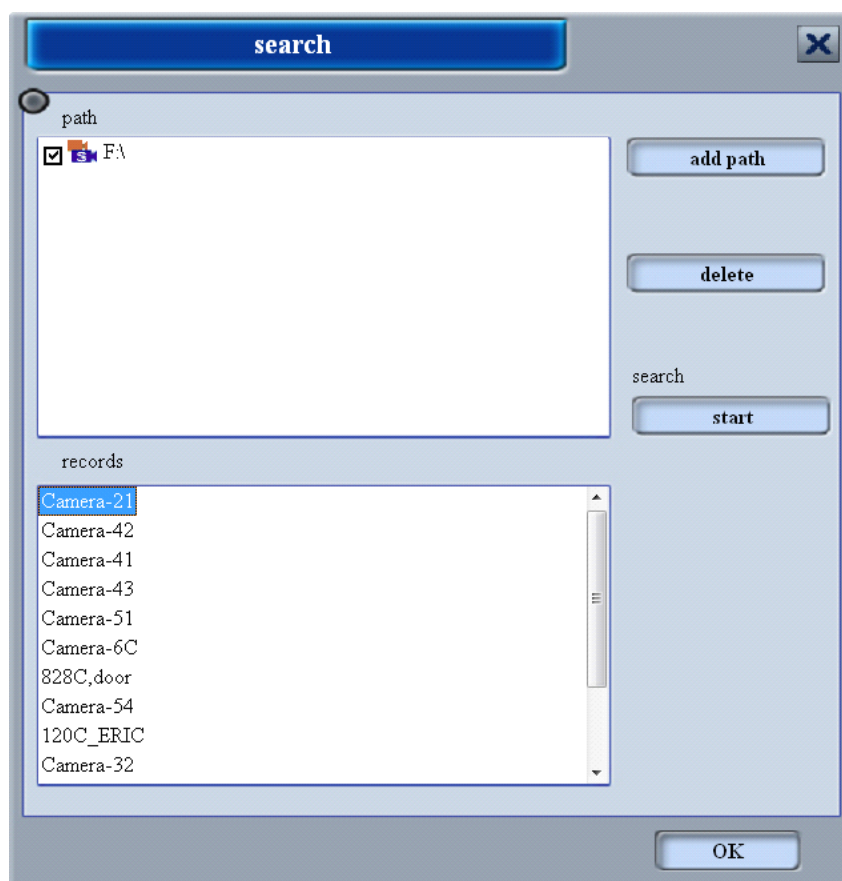
recordings that were searched.

<7.1>Group playback

After selected camera, click the camera icon to view its single playback. You may also view multiple playbacks at once, select multi-channel playback – it supports up to 4 channels. The default of the playback date is the most recent date of recording. User may adjust the time and progress.

<7.2>Search playback

Click  icon, to search.

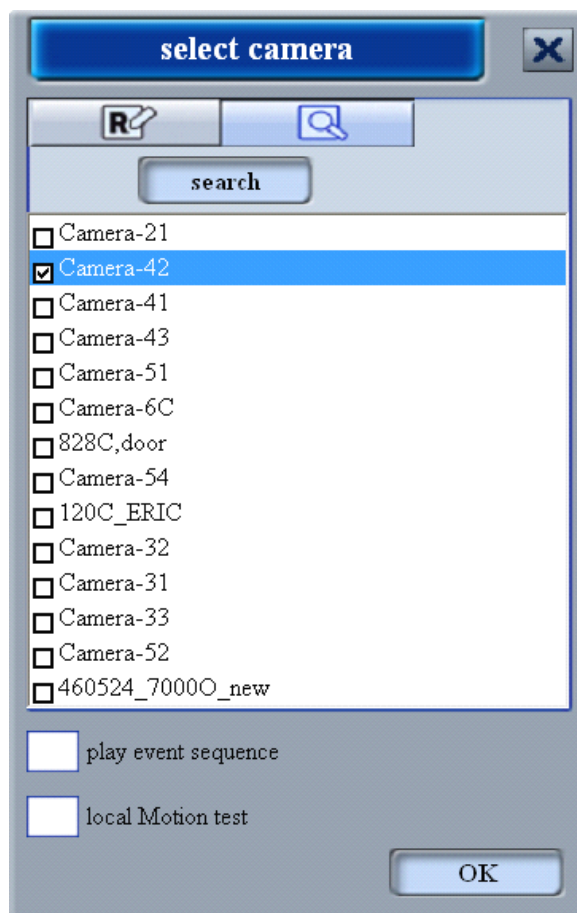


Add path: add recording save path.

Delete: delete recording save path.

start: start searching recording files.

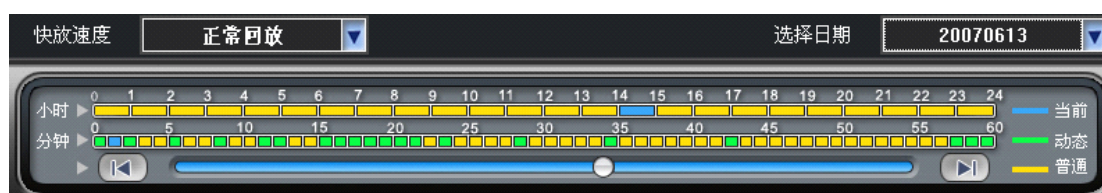
Select save path, then click start, after finding recording files, the list will display at the bottom.



The following functions are also included during playback:

Play Motion Sequence: The camera will record once it detects motion, this function is to only play the recording when motion is detected.

Local Motion Detector: This function is only for single playback. User may draw a region with the cursor and detect motion.



Switchable playback speed: Standard, 2xSpeed, 3xSpeed, 4xSpeed, 6xSpeed, 8xSpeed, 12xSpeed, 16xSpeed.

- Blue bar states broadcast time
- Green bar states the motion detection
- Yellow bar states normal recording

Drag in the blue bar to adjust the time

<8>AVI conversion

AVI Conversion feature is to allow users to convert the recorded video into .avi format. Select the camera group or cameras in the “Camera List” column for AVI conversion.

“Convert to standard avi file” → When you select, the video will be converted into standard .avi file, which can be displayed by any H.264-supported multimedia players.

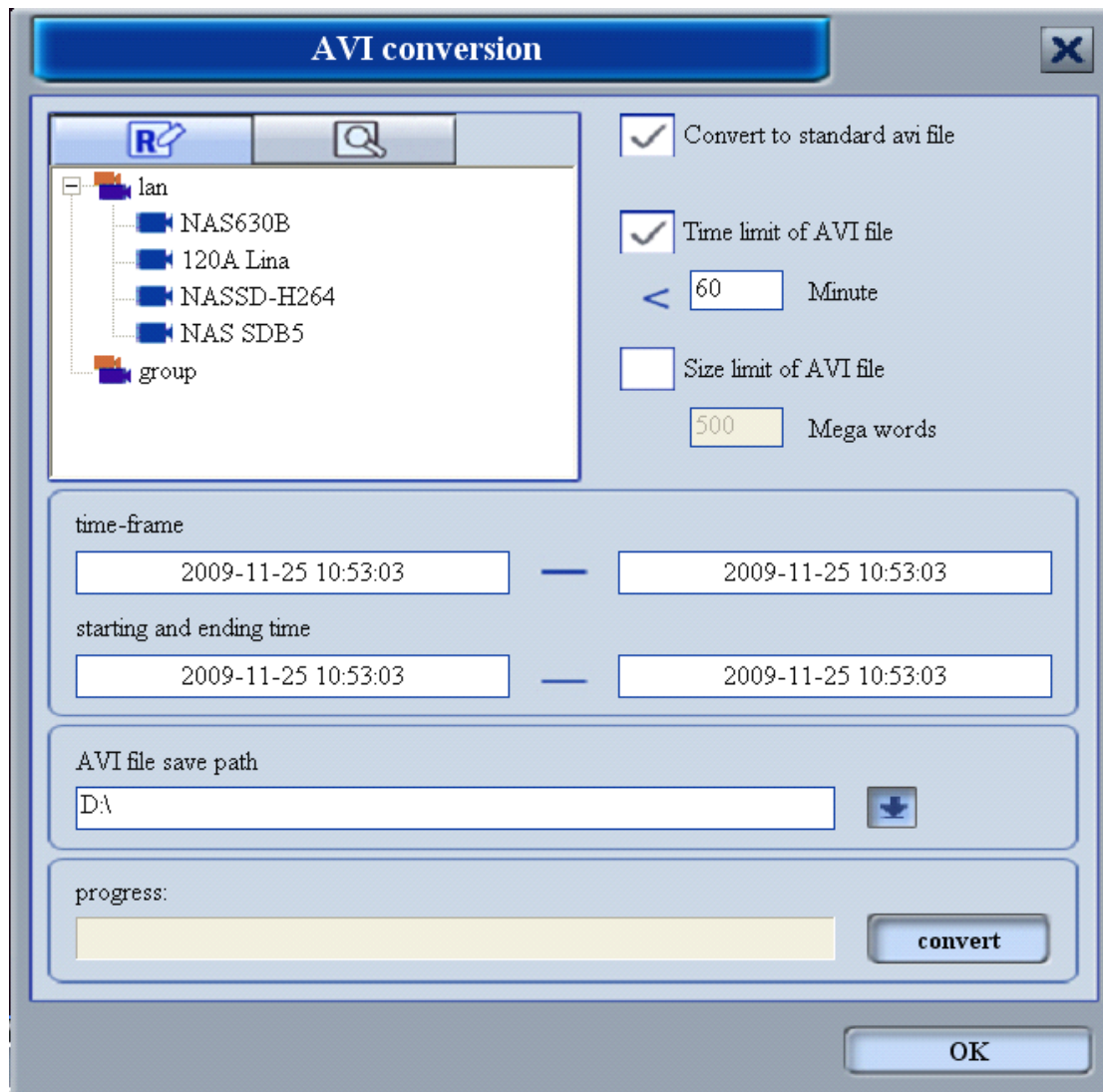
“Time Limit of AVI File” → When you select the time limit of the AVI conversion video, the AVI conversion files are in the same folder if the File size is not larger than 2GB.

“Size limit of AVI file” → When you select the size limitation, when the AVI final destination folder is exceeding the size limitation, it creates another final destination folder.

“Time-Frame” → Recorded video starting time and ending time.

“Starting and ending time” → AVI conversion starting and ending time.

“AVI file save path” → Storage destination of the AVI conversion.



<9>Other

The right list shows all groups and account, double click group or account to see all the camera icons of this group. At the same time, the left side will show all cameras within the group.

For normal groups, when you right click the group icon, four shortcuts appear, replace, add, close, info.

The replace shortcut is used replace the camera group playing now with the selected camera group. The add shortcut is to add selected group into list. The close shortcut is to close selected group. The info shortcut is allows user to check group name, type, number of cameras, and status of cameras.

When user right clicks account group, five shortcuts appear as the following, replace, add, close, reconnect, info. Reconnect is used when account is snatched, it connects directly to account group without the requirement to reboot NVR.

Camera-32

IP:192.168.1.32
model:2C
ID:W4Z4S5L2M8OTQU24C1Y5
status:normal
status:normal
group:group2
FPS:full FPS,BPS:100,RES:Tiny Resolution

Right click any camera icon to show camera information. The information shows camera IP address, series, serial number, status, group, and image quality.

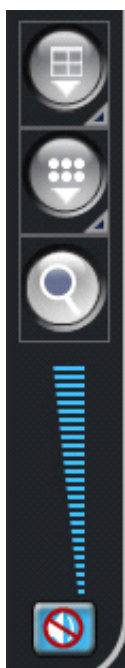
Video Split Screens: User can chose any format anytime. Press “esc” to quit full screen.

Split screens: User can choose up to 28, 36, 49 or even 64 split screens.

Page/Group flip: This function includes flipping upwards, downwards, or auto-flip.

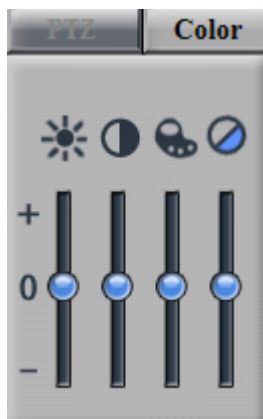
Mode switch: Click icon to switch preview mode or play mode. Preview mode displays one image per a few seconds, to save PC performance.

Volume Adjustment: User can adjust volume or mute.



adjusting

- 1.
- 2.
- 3.
- 4.



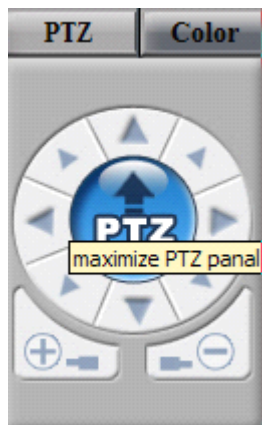
Color Adjustments: User can adjust image effects by the color adjustment.

Brightness: Brightness adjustment of image

Contrast: Contrast adjustment of image.

Color: Color adjustment of image

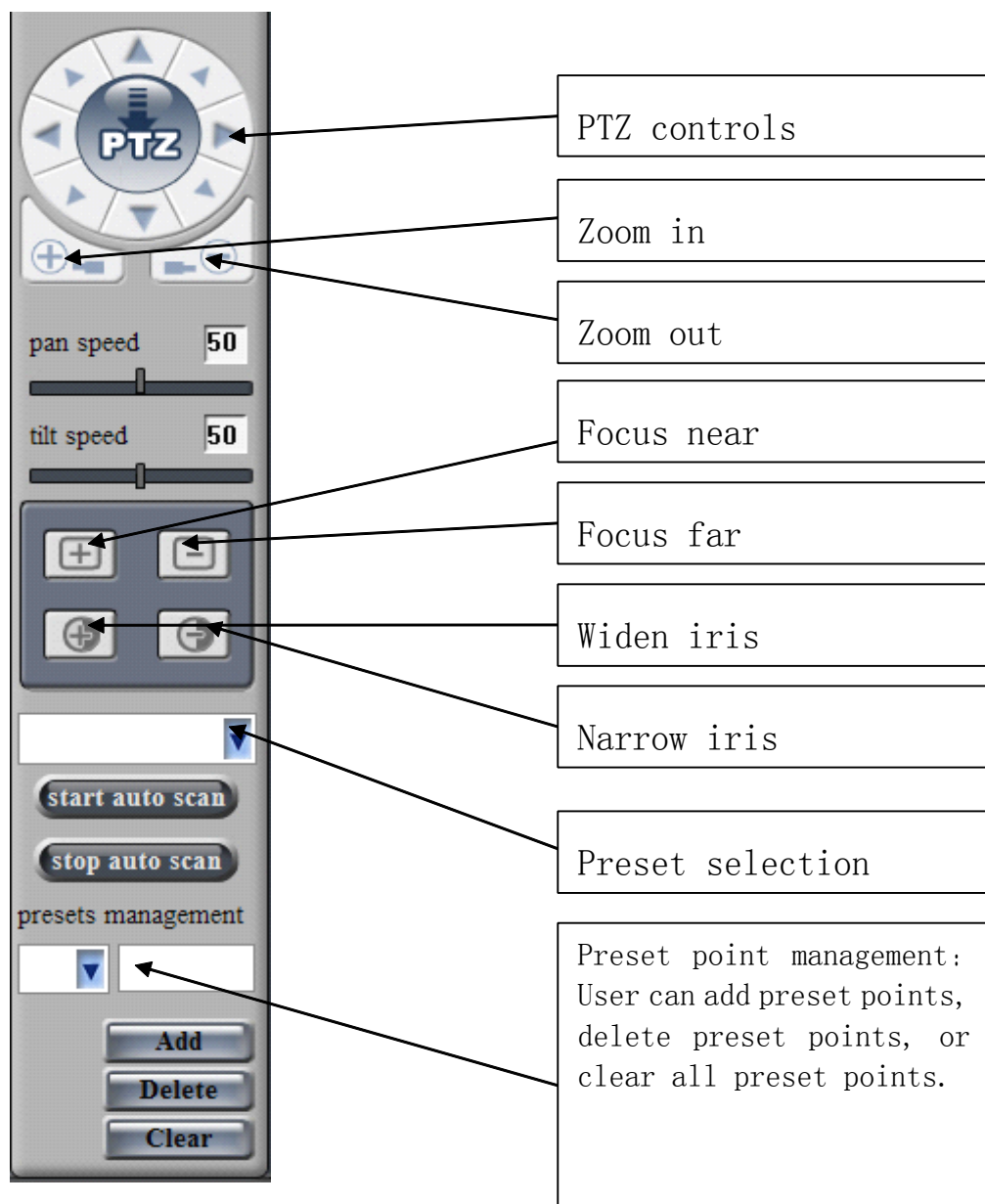
Saturation: Saturation adjustment of image.



PTZ control: when selected camera have PTZ functions included, then “PTZ controls” can be used.

Click “PTZ” to maximize PTZ interface.

Click “PTZ” located in the center of the circle to access advanced PTZ control.





Screen lock: Unlocking requires NVR password. If there is no password, system will remind you to set one.

Stop recording: When setting image quality, user can stop recording, then modify.

Snapshot



User can use cameras to take pictures

Click the snapshot icon to take a photo of the current screen of selected camera.

The picture can be either printed or be saved on the hard disk of the computer.

<9>Icon definition:

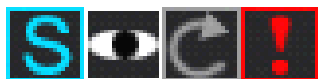
From left to right

1. Camera is recording
2. Scheduled recording, not now.
3. Recording error
4. Unknown status
5. Offline
6. Password error
7. Connecting
8. Connection failure
9. Connection error
10. Connected, awaiting data
11. Normal status
12. Account snatched
13. Camera deleted



From left to right

1. Account group
2. Regular group
3. Cameras in account
4. Cameras added by IP (Port)
5. Local cameras (added by IP and search)



From left to right

1. This is an account group
 2. Account snatched
 3. Connection failure
 4. Camera error in group (connection error or recording error.)
- 1,2,3 are specialized for group accounts, 4 is for all accounts.

