

# Linux-Embedded NVR

**User Manual**

**Version NV6.61**

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## 1. Introduction

### 1-1 Product Characteristics

#### ■ Optimum Replacement for Time-lapse Recorder

Traditional Time-lapse Recorder is a mechanical device. It is very easy to break down after long-term operation and it causes many problems such as: the overly used magnetic heads which cause blurred image; tapes need to be changed often and manually; the recording time is not long enough; the management of recorded tapes is complicated; inefficient when trying to locate the needed data; recording a huge amount of useless images, etc.

*This NVR system* adopts digital recording technology. The quality of images will not deteriorate with time. With its high compression rate, the storage time can last for months under normal applications. The overwrite operation mode will overwrite the earliest data, and no more tape change is required. Motion detection function will enable the recording only when there is motion of the objective, and makes the system and data retrieval more efficient.

#### ■ High Reliability

Normal PC digital surveillance system adopts the MS-Windows OS (Operating Systems). Such kind of system is so often to crash. It usually makes a negative impression which digital surveillance system is unreliable.

*This NVR system* adopts Embedded-Linux OS. Our advanced embedded technology condenses the entire system into a tiny flash module, which makes the system more reliable. Even when the power fails, the system will re-boot and return to normal operation in less than one minute.

#### ■ Longer Recording Days

*This NVR system* adopts the advanced MPEG-4 compression to store the video images. It allows you to record more data on the same capacity of hard disks.

#### ■ Ease of Operation

Mouse clicking on the Graphical User Interface controls all the operations. No keyboard is needed so that it is most suitable for the security guards and normal non-IT based users to use.

#### ■ Multi-Function

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Function of one set of *NVR system* = Time-lapse Video Cassette Recorder + Multiplexer processor + Motion Detection Processor

You can backup the data to CD-R/RW, remotely monitor the images and still recording the current video data at the same time.

## ■ IP Surveillance

Instead of only analog camera, from V5.03, this DVR system also supports IP camera connections to build IP surveillance systems to enjoy higher scalability, lower deployment cost, and greater intelligence of IP surveillance compared to CCTV.

## ■ High Resolution Display and Wide Screen Support

To provide better screen quality, DVR supports 1024\*768 and above high resolution and supports 16:9 wide screen display without picture distortion. User can select best DVR display resolution according to the monitor he uses.

## ■ 64 High Channel DVR Solution

From V6.00, DVR supports max 64-channel camera connections with 32 channel analog cameras and 32 channel IP cameras to build up 64 ch hybrid DVR system or pure 64 channel IP cameras to build up 64 ch NVR system. With this 64 high channel camera connection capability, customer can considerably save DVR construction cost.

# Linux-Embedded DVR

## 1-2 Package Content



2U

4U

Linux-Embedded NVR System



Mouse



Power Cord



Key (for HDD Tray)



CD-RW

(CMS, User Manual, DVR Player)



Screw

Please keep original carton and all packages undamaged for contingent use.  
If any of the above items is damaged or missing, contact your retailer.



## 1-3 Main Features

Items		Description
<b>System</b>	OS	Embedded Linux
	Video Input	Optional IP camera Inputs (Max. 64 Channels)
<b>Display</b>	Resolution	1024*768 and above resolutions
	Display Splits	4:3 monitor: 4, 6, 8, 9, 10, 13, 16, 25, 36, 49, 64 16:9 monitor: 4, 6, 8, 9, 14, 17, 24, 36, 48, 65
	Sequencer	1, 4, 16
	HDD Usage Display	Yes
	Hidden Camera	Yes
	Video Loss Detection	Yes
	Display Password Protection	Yes
	Color Adjustment	Brightness/Contrast/Hue/Saturation for each camera
<b>Recording</b>	Support IP Camera video Format	MJPEG, MPEG-4, H.264 (Depend on IP camera)
	Resolution	Support various resolutions (Depend on IP camera) Max. 1280*1024
	Frame rate per channel	Max 30fps (Depend on IP camera & Network bandwidth)
	Pre-Schedule Recording	By 7days x 24hours, set each hour as: recording by events, continuously recording, non-recording
	Motion detection area	Define any 8x8 cell for motion detection. Free combinations of detected areas. No limitation on the number of detection areas.
	Motion detection sensitivity	10 ranges per camera
	Smart Motion Recording	Automatically adjust recording frame rate according to motion occurring to save HDD space. (Low frame rate recording w/o motion occurring and high frame rate recording with motion occurring)
	Pre-Recording	0~20 sec
	Post-Recording	0~600 sec
	Watermark	Yes
	Date Code	Recording includes time/date information. To prevent date code from being modified
<b>Playback</b>	Playback channels	Max 16 channel Sync playback
	Playback mode	Play, Pause, frame by frame play, fast forward, fast backward

# Linux-Embedded DVR

	Search	Search by time, date, event and smart search.
	Digital Zoom	Yes
	Image Adjustment	Brightness/Contrast
<b>Remote Functions</b>	Networking	Internet/PSTN/LAN by Ethernet/ Modem
		Static IP, PPPoE, DDNS, DHCP
	3G/GPRS/Wi-Fi	Remote monitoring
	Web Viewer	Remote monitoring via JPEG or MPEG 4 streaming.
		Max. 16 clients access simultaneously
		Max. 16 channels sync playback
		Remote playback
	Central Management System	Remote backup
		Max. 64 NVR connections with 1024 Ch
		Remote monitoring
		Remote playback
	Control Center	Remote backup (One time backup or periodical backup)
		E-MAP
		Max 1000 NVR connections
Remote Backup	Remote NVR Health Check	
	Remote Time Sync.	
Alarm Behavior	by Windows Network Neighborhood	
<b>Storage &amp; Backup</b>	HDD Interface	Alarm to Zoom, Alarm to recording, Alarm to Notice (by Email / FTP / SMS)
	RAID support	Support SATA HDDs with Max 24TB
	Backup	*Support RAID 0~5, RAID event notification & RAID configuration
	HDD SMART Diagnostics	USB/ SATA burning device (CD-R/RW, DVD±R/RW); USB storage (Pen Drive, HDD)
<b>Other</b>	Password protection	Yes
		128 user accounts
		Multiple levels user authority (Admin/Supervisor/User)
	PTZ camera support	Password expiry management
	Power Down Management	Yes
	Watchdog	Yes. Auto-recovery when power back
	Time Zone/Daylight Saving	Yes Hardware Watchdog.
		Yes

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	AVI Format Export	Yes
	Time Sync	Support Time Server, FM and RTC Time Sync
	POS	Support POS integration.
	UI Language	10 languages in single software: English, French, German, Japanese, Portuguese, Spanish, Dutch, Russia, Traditional Chinese and Simplified Chinese.

\* Specifications subject to change without notice

## 1-4 System Specification

- **Model: NV00XXX Series-B(2U)**

### System

<b>Front Side</b>	HDD	Support 3*Internal HDD
	DVD-RW	Built-in 5.25" DVD-RW
	USB 2.0	2*USB
<b>Rear Side</b>	Video Input	Optional IP camera Inputs (Max. 32 Channels)
	VGA Output	15 pin D-Sub
	PS2	1* Keyboard, 1*Mouse
	Ethernet	1*RJ45 Gigabit Ethernet ports
	COM Port	1*RS232
<b>Environment</b>	Operating Temperature	0 <sup>0</sup> ~40 <sup>0</sup> C
	Humidity	5%~95%, non-condensing
	Power	100~230V AC
<b>Physical</b>	Color	Black
	Dimension	410mm(W)*480mm(D)*90mm(H)
	Gross Weight	10KG

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- **Model: NV00XXX Series-C(4U)**

System		
<b>Front Side</b>	HDD	2*HDD tray
	DVD-RW	Built-in 5.25" DVD-RW
	USB 2.0	2*USB
<b>Rear Side</b>	Video Input	Optional IP camera Inputs (Max. 64 Channels)
	VGA Output	15 pin D-Sub
	PS2	1* Keyboard, 1*Mouse
	Ethernet	1*RJ45 Gigabit Ethernet ports
	COM Port	1*RS232
<b>Environment</b>	Operating Temperature	0 <sup>0</sup> ~40 <sup>0</sup> C
	Humidity	5%~95%, non-condensing
	Power	100~230V AC
<b>Physical</b>	Color	Black
	Dimension	480mm(W)*530mm(D)*175mm(H)
	Gross Weight	25.4KG

# Linux-Embedded DVR

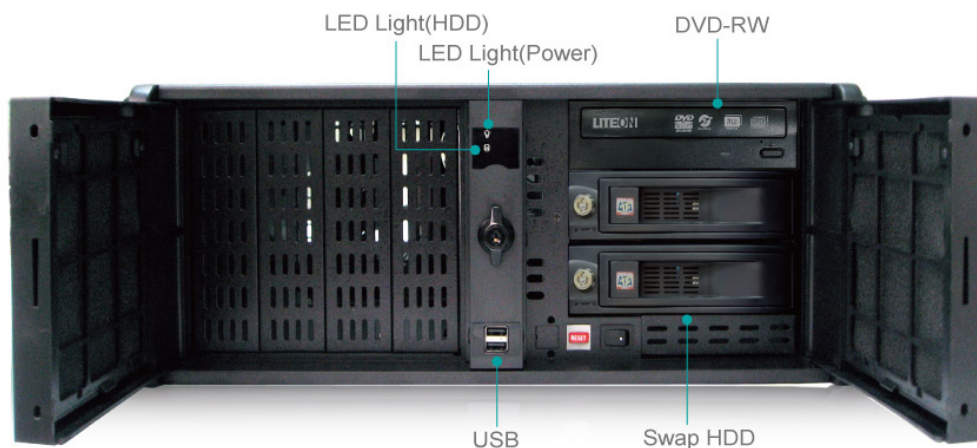
## 1-5 Outlook

### □ Front View

2U



4U

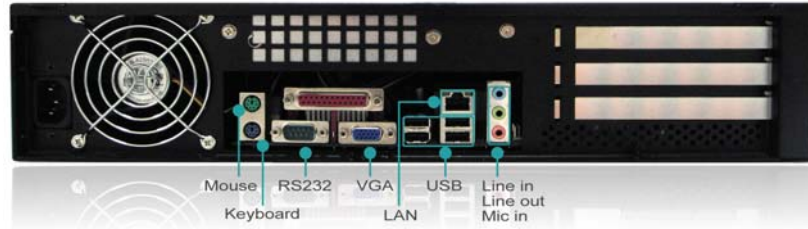


Items	Description
Alarm Light Indicators	Power Signal: <ul style="list-style-type: none"> <li>• Indicate “Green” when unit is switched on.</li> <li>• No light when power off.</li> </ul>
	HDD Signal: <ul style="list-style-type: none"> <li>• Indicate “ Red” and “Blinking” when <b>NVR System</b> is recording</li> </ul>

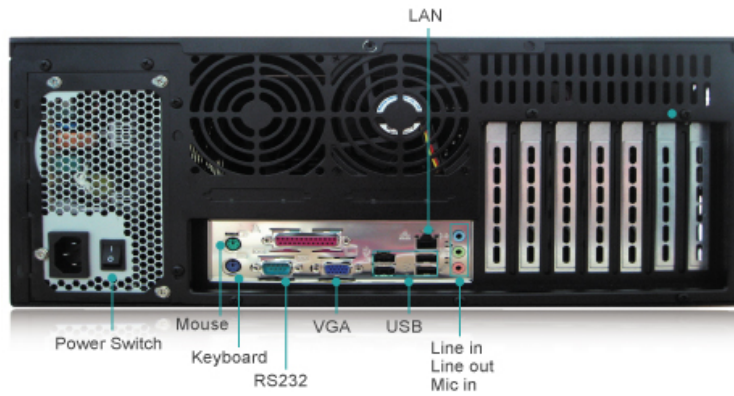
# Linux-Embedded DVR

## □ Rear View

2U



4U



## 2. Installation

### 2-1 Hard Disk Installation

- 2U

This **SYSTEM** supports two internal SATA HDDs.

Step 1. Unscrew the screws to open **SYSTEM** Upper Cover.



Step 2 Plug the connector of SATA cable and power connector to the HDD.



Connect power cable to the SATA HDD    Connect SATA cable to the HDD

Step 3 Screw the HDD to the internal HDD rack.



Step 4 Screw back the **SYSTEM** Upper Cover.

# Linux-Embedded DVR

## - 4U

The system equipped with one 5-bays RAID box can be installed with 5 SATA HDDs at the same time.

**Step 1** Grip the handle of HDD tray and open the door.



**Step 2** Insert the HDD to the HDD tray



**Step 3** Close the door of HDD tray.





## 2-2 Video and Audio Input Connections

- **Audio Input**

**Step 1** This **DVR System** supports audio inputs on all analog channels. Connect the Audio input device (ex. Microphone) to the RCA connector of AV cable

- **Audio Output**

This system also provides one channel audio output from “Line out” connector. This audio output function includes “Live audio” and “Playback audio”. Please connect your audio device (ex. Speaker) to the “Line out” connector.

2U



4U



## 2-3 Monitor Connections (Video Output)

For the video outputs, this **System** supports one VGA and five TV outputs with multiplex function.

- **VGA output**

Connect the VGA cable (with D-type, high density, 15 pins plug) to the **System** VGA port.

2U



4U



## 2-4 Other Connections

- Connect the power cord to the power socket on the back panel.
- Keyboard and mouse connections. This **NVR System** supports PS/2 and USB interface for keyboard and mouse. Please connect to the correct connectors according to the types of your keyboard and mouse.
- If you use Modem to connect to Internet, connect the Modem to COM 1 (RS232 socket).
- If you have a PTZ camera, connect it into COM 2 through the RS485 adaptor provided in the **NVR System** accessory package.

## 2-5 The First Time Start

When starting NVR for the first time, you should have following configurations,



	Function	Description
1	Start DVR	Quick access to DVR main screen. If you don't click this button, DVR will automatically go into Main screen after 5 seconds
2	Play Recorded Video	Playback only. Quick access to playback mode.
3	Disk Tool	Tools for HDD storage device including Scan Disk, S.M.A.R.T Diagnostic, Disk manager to assign camera to HDD and RAID configuration.
4	System Tool	Reset Configuration

# Linux-Embedded DVR

5	Select Language	Select preferred language (Traditional Chinese, English, Japanese, French, German, Portuguese, Dutch and Spanish)
6	Camera Signal	Switch DVR to NTSC or PAL mode according to camera signal type
7	Display Resolution	Select the best display resolution among the resolutions that monitor supports
8	Power Off	To turn off the DVR

# Linux-Embedded DVR

- **Select Language**

This DVR system supports ten kinds of languages that including Traditional Chinese, Simplified Chinese, Russia, English, Japanese, French, German, Portuguese, Dutch and Spanish. You can select your preferred display language before starting DVR system.

- **Select Camera Signal**

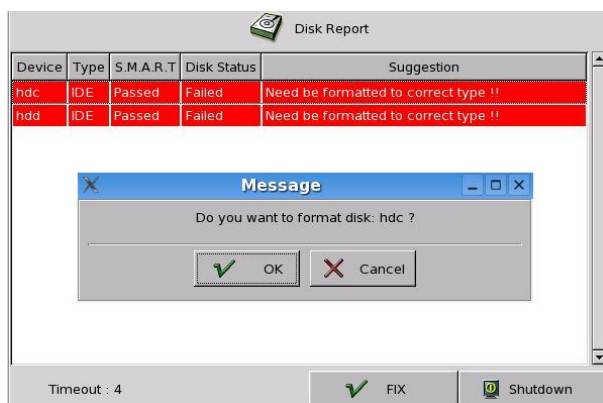
Before you enter DVR monitor screen, you should select correct camera signal, NTSC or PAL according to the cameras connected to the DVR. Please be noted that incorrect camera signal will cause abnormal image format.

- **Select Display Resolution**

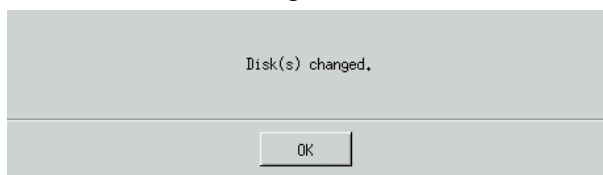
To provide better display screen quality, this DVR system supports multiple display resolutions. DVR will automatically detect the resolutions that monitor supports and list them in the menu. We suggest to select the highest resolution listed in the menu.

- **Disk Tool-Format HDD**

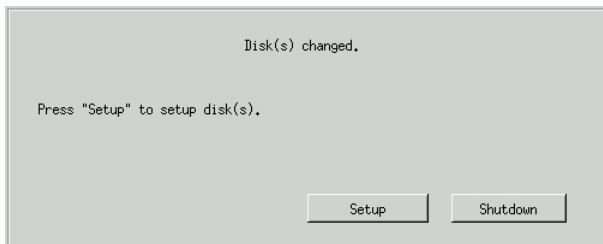
If DVR is not equipped with an install ARECA internal RAID Box, wait 5 seconds for time out and then the system will detect new hard disks and ask if you want to format hard disk.



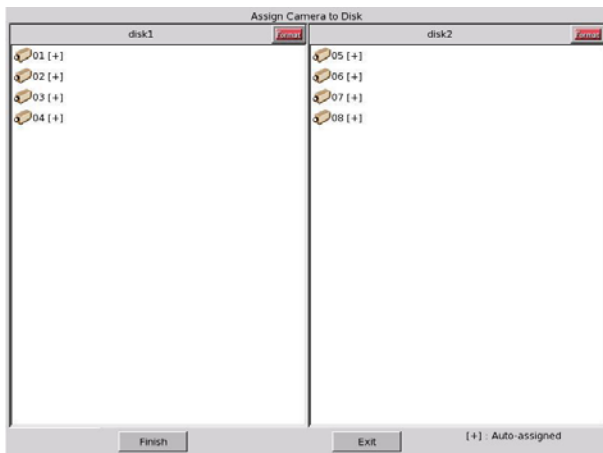
Click “OK” to start formatting. Follow the on-screen instruction to continue.



# Linux-Embedded DVR



Click "Setup" to see the figure below.

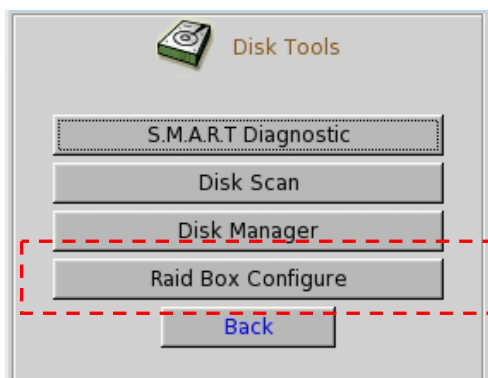


Click "Finish" to complete the setting and the system will restart automatically.

- **Disk Tool-RAID Box Configuration**

If DVR is equipped with ARECA RAID Box, you should have RAID configuration before you start to assign camera to disk in "DISK Manger" of "Main Menu".

**(1) Step 1: Go to Main Menu>Disk Tool>RAID Box Configure**



# Linux-Embedded DVR

## (2) Step 2: Select RAID Model & COM Port

Please Select “ARECA AREC5030” as RAID Model and select “USB COM 1” as COM Port interface to sent RAID alarm message to DVR.



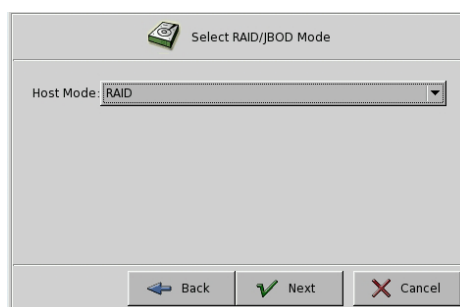
## (3) Step 3: Authentication

The default password is “0000”.



## (4) Step 4: Select RAID/JBOD mode

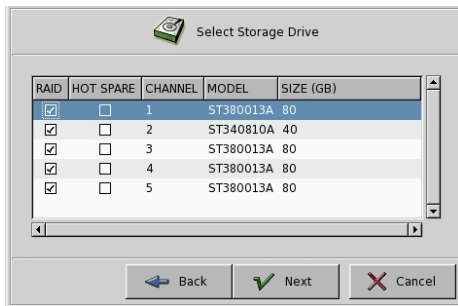
Because ARECA 5030 RAID Box is SATA interface with host, please select RAID mode. JBOD is for IDE interface.



## (5) Step 5: Select RAID mode

Please assign each disk (Channel) as “ Hot Spare” or “RAID” disk.

# Linux-Embedded DVR



<b>!</b>	<p><b>Note</b></p> <ol style="list-style-type: none"> <li><b>RAID and Hot spare can't be selected in the same channel(HDD).</b></li> <li><b>Only one Hot spare HDD can be selected.</b></li> <li><b>It's meaningless to select Hot spare in RAID Level 0</b></li> </ol>
----------	---

## (6) Step 6: Select RAID Level

EV5000 support RAID 0~5 levels. Below please see the comparison between RAID 0, 0+1, 3 and 5. With properly configured, the RAID can provide non-stop service with high degree of fault tolerance. The RAID function allows two HDD failures without impact on the existing data stored in the HDD and failed drive data can be reconstructed from the remaining data and parity drives. Please have the proper configuration according to your requirement.

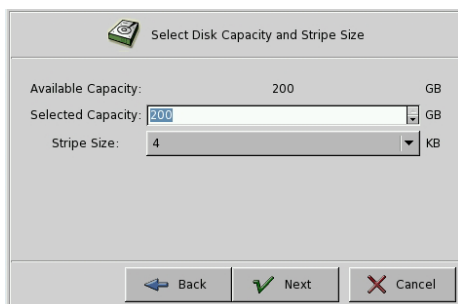
RAID Level	Description	Min Drives	Max. Drives	Data Reliability
0	<ul style="list-style-type: none"> <li>Also known as striping.</li> <li>Data distributed across multiple drives in the array.</li> <li>There is no data protection</li> </ul>	1	5	No data protection
1	<ul style="list-style-type: none"> <li>Also known as mirroring</li> <li>All data replicated on N separated disk. N is always 2.</li> <li>There is a high availability solution but due to the 100% duplication, it is also a costly solution.</li> </ul>	2	2	High than RAID 3, 5.
3	<ul style="list-style-type: none"> <li>Also known Bit-Interleaved parity.</li> <li>Data and parity information is subdivided and distributed across all disk.</li> </ul>	3	5	*Lower than RAID 1. *High than a single drive

# Linux-Embedded DVR

	<ul style="list-style-type: none"> <li>● Parity must be the equal to the smallest disk capacity in the array.</li> <li>● Parity information normally stored on a dedicated parity disk.</li> </ul>			
5	<ul style="list-style-type: none"> <li>● Also known Block-Interleaved Distributed Parity.</li> <li>● Data and parity information is subdivided and distributed across all disk. Parity must be the equal to the smallest disk capacity in the array.</li> <li>● Parity information normally stored on a dedicated parity disk.</li> </ul>	3	5	*Lower than RAID 1 *Higher than a signal drive.

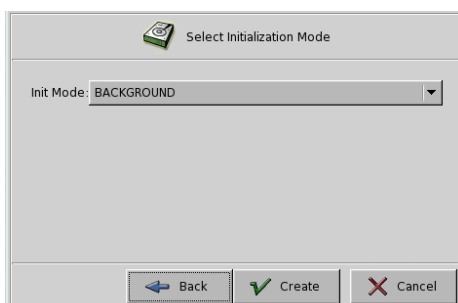
## (7) Step 7: Select capacity and stripe size

“ Available Capacity” means the max capacity that can be used in the RAID disk. You can select how much disk space that you want to use. The RAID box provides the options of Strip size that you use.



## (8) Step 8: Initialization

The final step is initializing the RAID Box. There are two modes for selection-**Foreground** and **Background**. **Foreground** means disk can be used after finishing the RAID configuration. Background means disk can be used during executing RAID configuration.





# Linux-Embedded DVR

## 3. Main Screen




The controls in the main screen including:

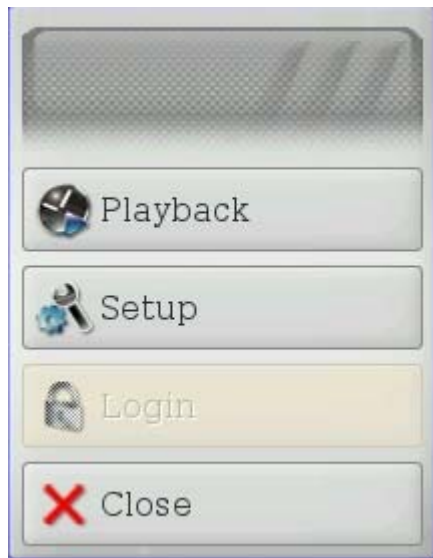
	Function	Description
1	Display Screen Style	List “ Full Screen”, “Event to Zoom”, “Sequencer” and multiple “Display Split” styles.
2	PTZ Control	List PTZ Control Menu
3	Color Adjustment	List four color parameters including Contrast, Brightness, Chroma and Saturation
4	Digital Zoom	Enlarge an image area in Screen
5	Audio Volume Setting	Adjust live audio volume
6	Control Window	Control Window for “Display Screen Style”, “PTZ Control”, “Color Adjustment” & “Audio Volume” function
7	Camera List	List all of DVR channels and each camera status
8	Alarm Input	List all of alarm input devices and status of each alarm device.
9	Alarm Output	List all of alarm output devices and status of each alarm device.
10	HDD Status	Display HDD status
11	Status Window	Camera, Alarm Input, Alarm Output HDD Status Window
12	Date/Time	Display current date and time
13	Access Menu	List Access functions including “ Playback”, “ Setup” and “ Monitor Login” function

## 3-1 Display Screen Style


If “**Monitor Password Protection**” function is enabled (Please refer to Chapter 5-3 User Account Management and Chapter 5-8-2 Security), the system will request you to enter User

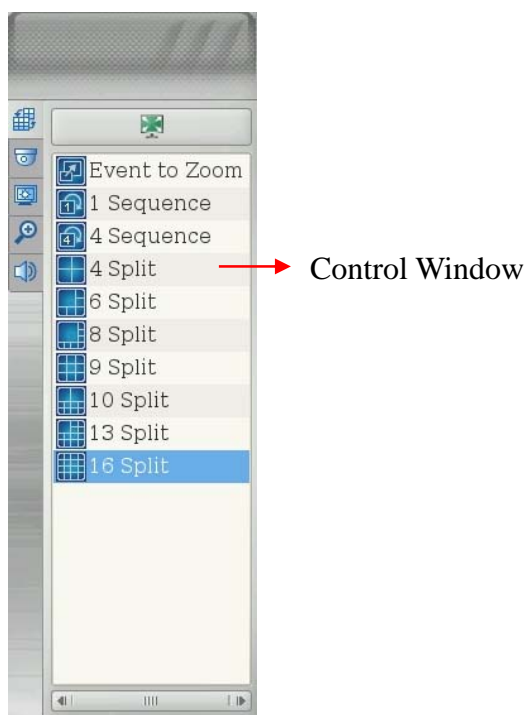
name and Password before seeing the live monitor. Click the **Access** button  on the bottom right of main screen and it will show the DVR Access Menu as below,

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Click “Login” tab and enter username and password to login to DVR monitor screen.

When you click “Display Screen” , it will show four major screen styles including “Full Screen”, “Event to Zoom”, “Sequencer” and “Split Style” in the Control window. You just click any screen option in the Control Window to switch to the screen style you want.



## 3-1-1 Split Styles

This DVR system supports two types of split styles according to the monitor you install. For the 4:3 monitor, it will support 4, 6, 8, 9, 10, 13, 16, 25, 36, 49 and 64-split styles. For the 16:9 wide screen, it will support 4, 6, 8, 9, 14, 17, 24, 33, 36, 48 and 65-split styles. The split styles that DVR supports will be listed in the Control Window. You just need to click on any split style in the Control Window and the screen will switch to the split style you select. You can also click any channel to enlarge the screen picture by two steps and click it again to back to the original split style. The order of cameras displayed on each split style can be configured in the system setting menu.

## 3-1-2 Sequencer

This DVR provides three types of sequencer styles including 1, 4 and 16. Just click one of the Sequence styles and it will display camera screen in sequence. You can set up the “Sequencer Order” and the “Sequencer Duration” in the “Display Setting” menu. Please refer to the Chapter 5-2-1 Sequencer.

## 3-1-3 Event to Zoom

There are two types of Events to trigger camera zooming. One is Motion event and the other one is Alarm event.

If you want to enable this function, firstly you should go to Setup> “Alarm” menu to set up “Motion to Zoom” or “Alarm (DI) to Zoom” Rule. Please refer to “Chapter 5-4 Alarm”.

Click  Event to Zoom icon in the Control Window to switch to “Event to Zoom” display style.

### 3-1-3-1 Rule of Event Zooming

(1). When the DVR detects motion or alarm on the channel set with Motion to Zoom or Event

to Zoom, it will immediately pop up this channel picture to the “**Zoom-in Window**” and the original position of that channel will be replaced with a “ Motion/Alarm” legend and marked with a red frame.

Any channel without set with “ Motion/Alarm to Zoom” function will not be popped up to the “**Zoom-in Window**” or marked in red frame even DVR detects motion or alarm in this channel.

(2). If DVR doesn't detect any other motion or alarm, the current zooming channel will be continually displayed in “**Zoom-in Window**”. If yes, the zooming channel will keep displaying in “**Zoom-in Window**” for three seconds and then, will be replaced by any channel waiting for zooming. If DVR detects more than one motion or alarm channels simultaneously, the zooming rule will be as below,

- The current zooming channel will be the first priority for zooming in again for another three seconds and others will stay in their positions and be marked in red frames to wait for zooming in after three seconds. However, the max zooming time for the same channel is nine seconds. After nine seconds, even DVR detects motion or alarm on this channel, it will not be popped up to the **Zoom-in Window** again until there are no other concurrent motion/alarm channels and other channels with motion/alarm will replace it to be popped up in **Zoom-in Window** according this rule.
- If the channel stayed in it's position waits for popping up but motion/alarm on this channel disappears during the waiting time, it will not be zoomed in and the red frame marked in this channel will disappear.
- If DVR doesn't detect the current zooming channel with motion or alarm again, the first priority of the zooming-in channel in waiting list is the one of which channel number is the smallest. For example, if DVR detects concurrent motions or alarms on channel #3 and channel #4, the channel #3 will be zoomed in to the **Zoom-in Window** firstly for three seconds and the channel #7 marked in red frame will keep to stay in it's position waiting for zooming in after three seconds.

### 3-1-3-2 Zoom in a Specific Channel

If you want to focus on a specific channel, you can set up just to zoom in that channel. In the Event-to-Zoom mode, click any channel you only want to zoom in and this channel will be popped up to the **Zoom-in Window** immediately marked in **yellow** color frame and the

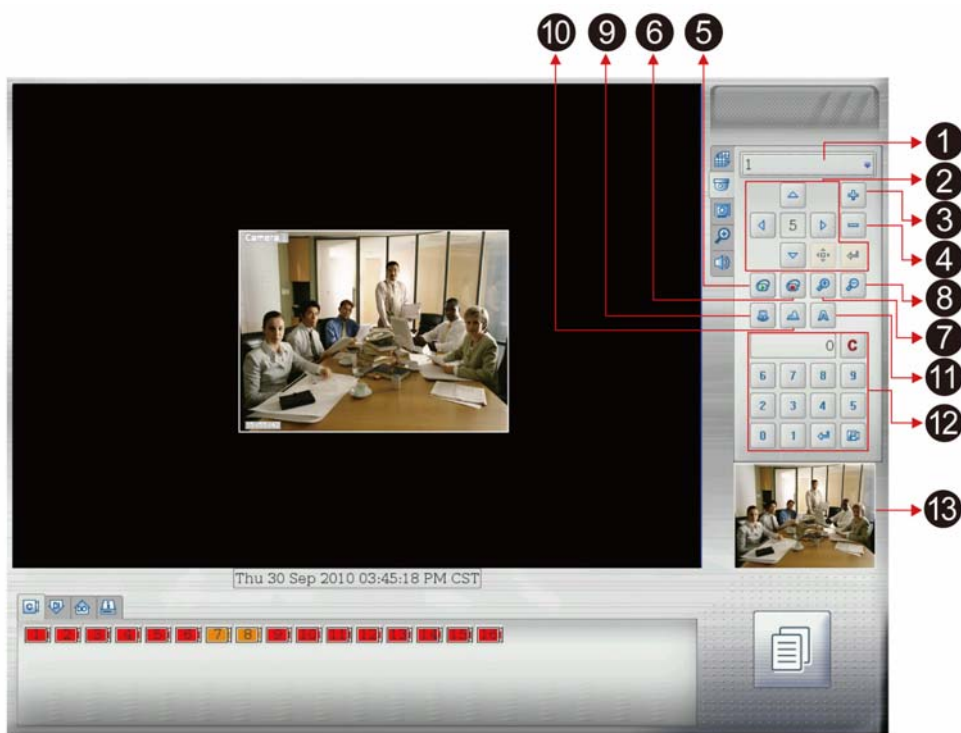
# Linux-Embedded DVR

original position of this channel will be replaced by a **“locked picture”** legend. In this configuration, even DVR detects other channels with motions or alarms, these channel will not be popped up to the **Zoom-in Window** but just stay in their positions marked in red color frames. You can click the **Zoom-in Window** to cancel the configuration of **“ Zooming in a Specific Channel”**.

## 3-1-4 Full Screen

When you click “Full Screen” function in Control Window, DVR will maximize the display screen to full screen without user interface.

## 3-2 PTZ Control



	Function
1	PTZ Channel
2	OSD Menu
3	Speed Up PTZ
4	Slow Down PTZ
5	Start Auto-pan
6	Stop Auto-pan
7	Zoom Out
8	Zoom In
9	Focus Near
10	Focus Far
11	Auto Focus
12	Preset Point
13	Preview Window

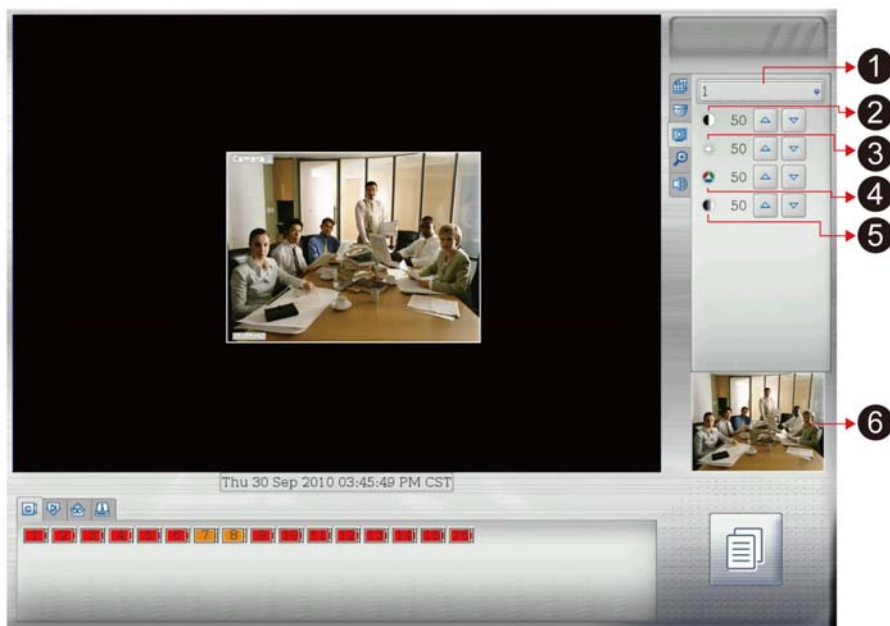
# Linux-Embedded DVR

When you click “PTZ Control” Tab, it will show PTZ Control Menu in Control Window. Click PTZ Channel bar and below channel menu will list for your selection.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32

By selecting any channel that with PTZ function (Please refer to Chapter 5-1-6 PTZ Camera Setting), PTZ Control menu will show in the Control Window. You can see each button definition in above PTZ control table.

## 3-3 Color Adjustment



	Function
1	Camera Channel
2	Contrast
3	Brightness
4	Chroma
5	Saturation
6	Preview Window



# Linux-Embedded DVR



When you click “Color Adjustment” Tab, it will show “Color Adjustment Parameters” in Control Window. Firstly, click “ Camera Channel” bar and it will list camera channel for your selection.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32

Select any channel and then adjust each color parameter according to your requirement. If you don't want to provide “Color Adjustment” function in Monitor mode, you can disable this function in the “System Setting” menu. Please refer to Chapter 5-8-2 Security Setting.

## 3-4 Digital Zoom in Monitor

When you click “Digital Zoom” Tab, it will show Digital Zoom Control Menu in Control Window. The function of “Digital Zoom” is used to enlarge the image in the screen in single channel view.

Step 1: Click  Zoom-in icon to enlarge the image or  Zoom-out icon to shrink the enlarged image.

Step 2: Select the index in the Control Window for Zoom-in or Zoom-out. Then, you can start to Zoom-in or Zoom-out the image in screen according to the index you select by left click the mouse on the image. You can left-click the image again and the image will be zoomed-in or zoomed-out by the next index. For example, if you select 125% index to start to zoom-in image, the first time you left click the mouse on the image, the screen will be zoom-in by 125% times of the original size. Once you click again, the image will be zoom-in again by 150% times (the next index of 125%) of the original size. Below is the index list for Zoom-in or Zoom-out.

100%
119% Fit visible
125%
150%
175%
200%
250%
300%
350%
450%
550%
700%
850%
1000%
1200%
1400%
1600%

Index List

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!	<p><b>Note</b></p> <ol style="list-style-type: none"> <li>1. The index of “Fit Visible” means that the image is enlarged to fit the size of screen.</li> <li>2. The max index number is 16 times of the original size and the min index number is 100% equal to original size.</li> <li>3. Digital Zoom function only works in single channel view.</li> </ol>
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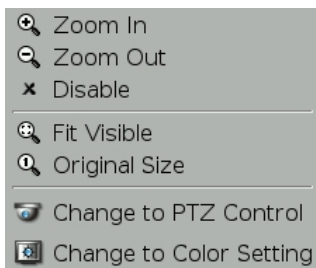
Step 3: By right click mouse and drag it, you can move the zoom-in area shown in the screen. In the preview window, you can see that the red frame marks the location of current Zoom-in area on the image.



→ Location of Zoom-in area

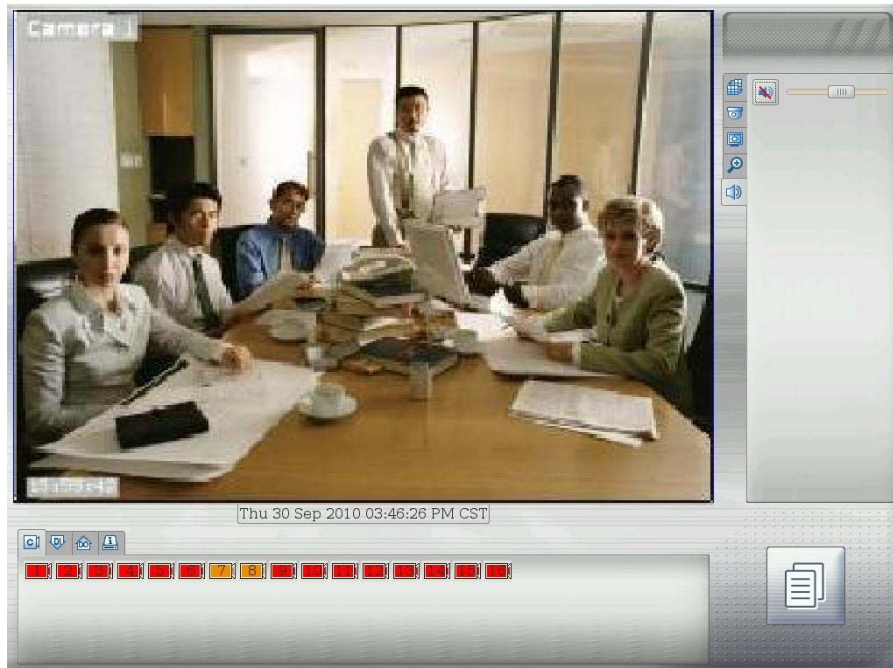
Preview Window

Step 4: By right clicking the mouse on the image, it will show the control menu as below.



Function	Description
Zoom in	Enable the function of enlarging the image
Zoom out	Enable the function of shrinking the enlarged image
Disable	Disable Zoom-in or Zoom-out function
Fit Visible	Enlarge the image to fit the screen size
Original Size	Shrink the image to original size
Change to PTZ Control	Change to PTZ Control mode
Change to Color Setting	Change to Color Setting mode

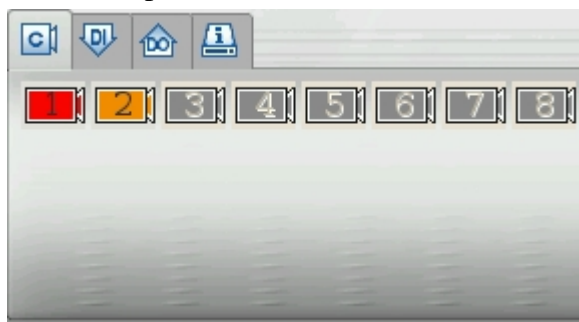
## 3-5 Live Audio Volume Adjustment



When you click “Audio Volume” adjustment Tab, it will show the tool bar for the adjustment of Live Audio Volume. The source of Live Audio comes from the microphone connected to the DVR Mic-in connector.

## 3-6 Camera Status

The Status Window shows total camera channels that DVR can be connected and each camera status as below picture.



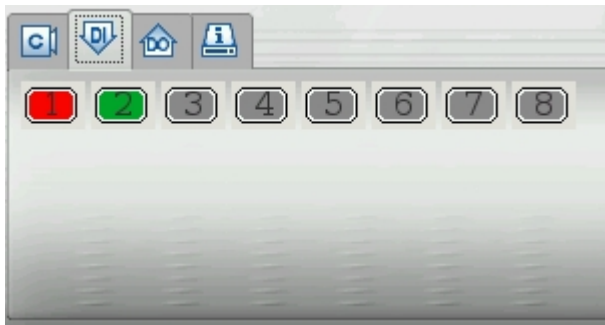
The number marked in each camera legend represents the number of camera channel. The

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color of each camera legend indicates camera status as below definition.

Color	Recording Mode	Status
Orange (■)	Full recording	
Green (■)	Motion-sensor	Motion not detected
Red (■)	Motion-sensor	Motion detected & recording
Gray (■)	No recording	

## 3-7 Alarm Input Status



When you click Alarm Input Status Tab, the Status Window will show the total Alarm Input devices that this DVR can be connected and the status of each device as below.

Color	Status
Gray (■)	Alarm Input device is disabled
Green (■)	Alarm Input device is enabled but alarm device is not activated
Red (■)	Alarm Input device is enabled and alarm device is activated

## 3-8 Alarm Output Status

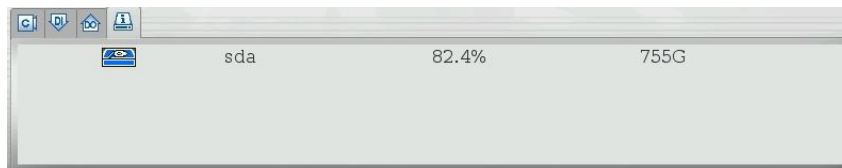
When you click Alarm Output Status Tab, the Status Window will show the total Alarm Output devices that this DVR supports and the status of each device as below.

# Linux-Embedded DVR

Color	Status
Gray (■)	Alarm Output device is disabled
Green (■)	Alarm Output device is enabled but alarm device is not activated
Red (■)	Alarm Output device is enabled and alarm device is activated

## 3-9 HDD Status

When you click HDD Status Tab, the Status Window will display HDD status as below.




Each row in the Status Window represents each HDD status. The 3<sup>rd</sup> Column lists the percentage of HDD free space and the 4<sup>th</sup> column shows the rest of HDD space. When you start using a new hard disk (for example, a hard disk with capacity 80GB), the percentage of free space will be very close to 100% (e.g. 99%), and the color will be **BLUE**.

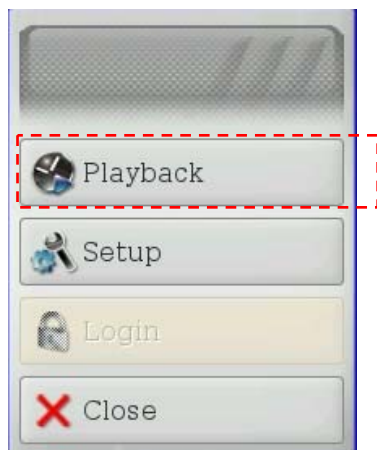
However, as recording continues, the available space will diminish. When the remaining available space is less than **4GB**, the display color will change to **ORANGE**. This serves as a warning message that the system will soon enter the **Recycle Mode**; which means, the earliest recorded data will be replaced by the newest recording data. If you would like to keep all the data, this is the time to swap a new hard disk.

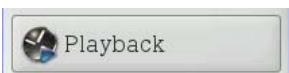
If the disk has not been changed and the recording continues, the system will go into **Recycle Mode** when the hard disk free space is less than 2.5GB. The color of “Hard Disk Free Space” will turn **RED**.

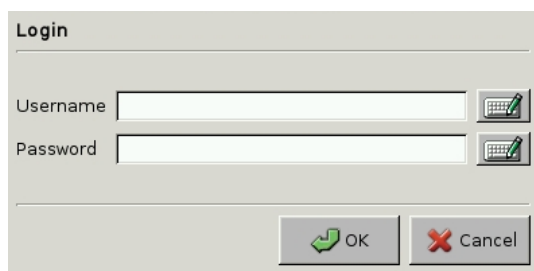
<b>!</b>	<b>Note</b> <ul style="list-style-type: none"><li>• Without RAID device, this DVR system can support maximum six HDDs.</li><li>• With RAID device, this DVR system supports maximum three HDDs volumes with 8TB per volume. Therefore, the maximum HDD capacity that DVR supports is 24TB.</li></ul>
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## 4. Playback

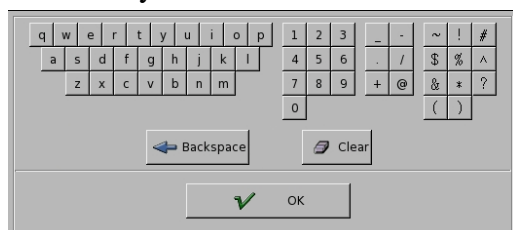
By clicking the button of Access Menu  on the bottom right of main screen, it will pop up the Access Menu as below.



Click “ Playback”  tab and it will prompt you to enter username and password to login to the Playback Menu as below.

A screenshot of the Login dialog box. It has a title bar 'Login'. Below it are two input fields: 'Username' and 'Password'. Each field has a keyboard icon to its right. At the bottom, there are two buttons: 'OK' (with a green checkmark) and 'Cancel' (with a red 'X').

Click on the keyboard icon to enter the user name and password of “ Administrator”.

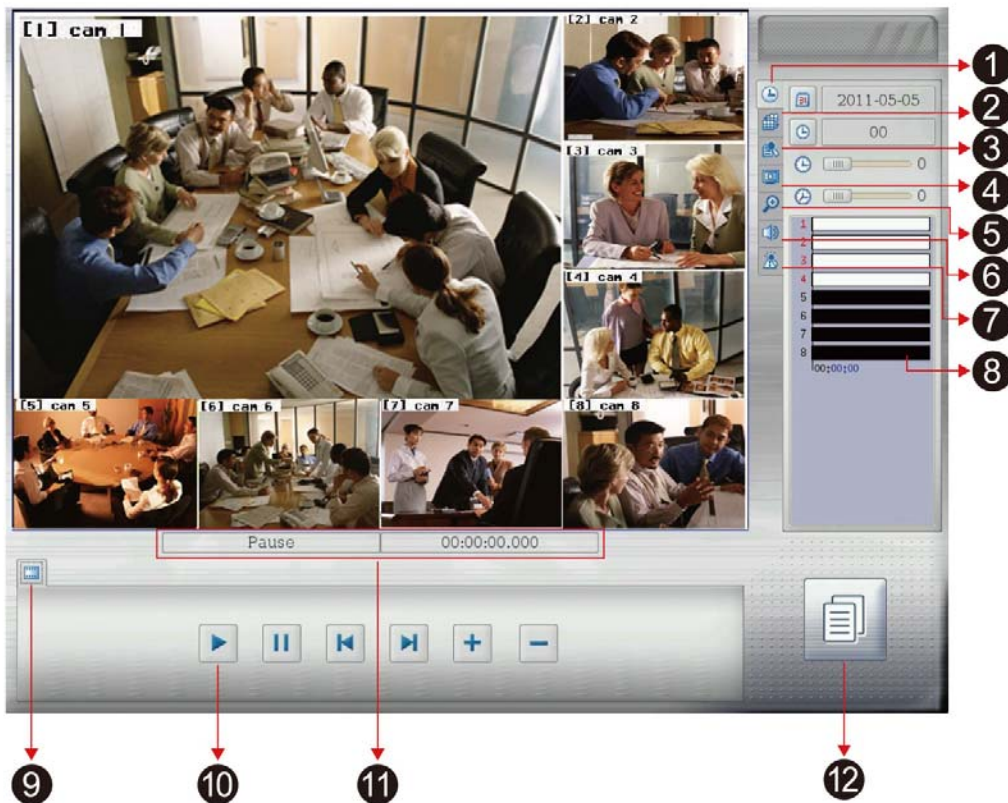




## Note

1. The preset user name and password of Administrator are as below,
  - Preset user name: admin
  - Preset password: **1111**
2. If “Playback Password Protection” function is enabled, you need to enter administrator user name and password for Login authorization. Please refer to Chapter 5-8-2 System->Security for the authorization of playback.

# Linux-Embedded DVR




The controls of Playback functions are as below,

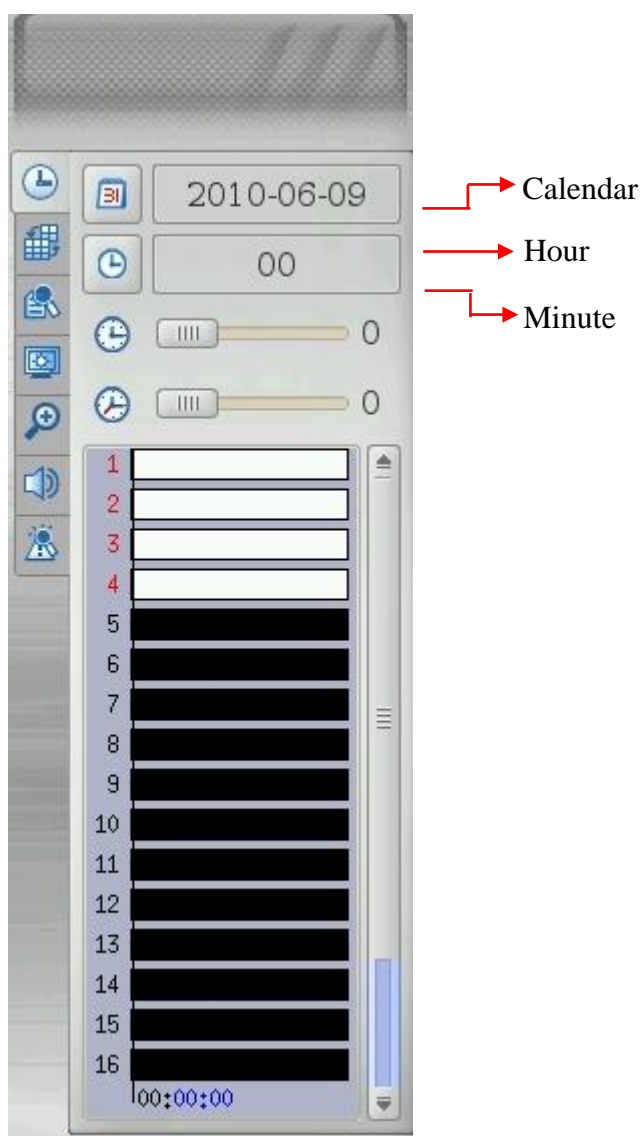
Item	Function	Description
1	Time Search	Search recorded data by time conditions.
2	Screen Style	Select playback screen style including Full screen and split styles.
3	Event Search	Search recorded data by event conditions.
4	Playback Color Setting	Set the playback
5	Digital Zoom	Enlarge the image area in the screen
6	Playback Audio Setting	Set playback audio volume.
7	Smart Search	Search video files by detected motion in specific region
8	Playback Control Window	Control Window for “Time Search”, “Split Type“, “Event Search”, “Color Setting” & “Audio Volume
9	Playback Control Panel	Set playback functions including “ Play”, “Pause”, “adjust Playback Speed”, “Rewind” & “Next Frame”.
10	Access Menu	List Playback Access functions including “ Monitor/Exit”, “Snapshot”, “Export Log”, “Export Video” & “ Setup”.



## 4-1 Search Recorded Data by Time

This DVR system provides two ways of “Searching for Recorded Data”. One is “Search by Time” and the other one is “Search by Event”.

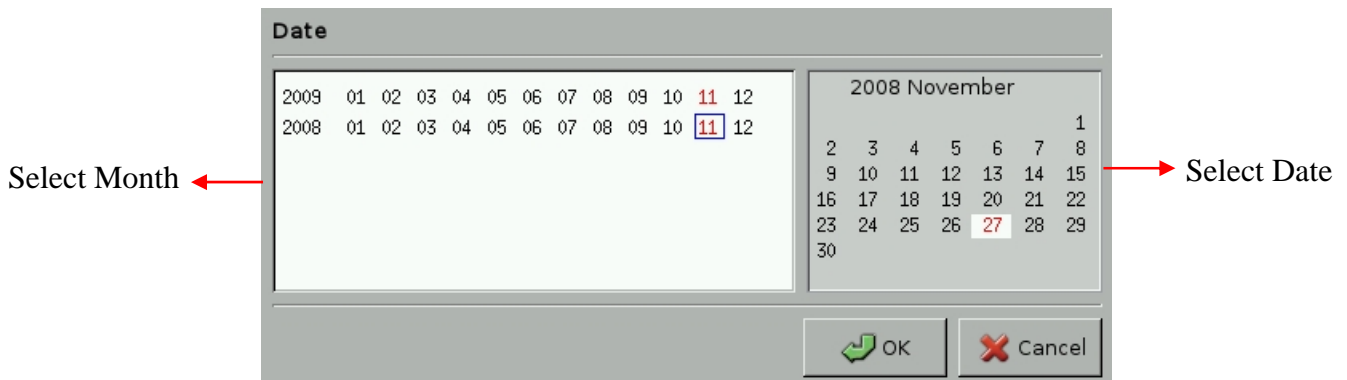
When you click the tab of “Time Search”  , it will show three kinds of time parameters for selecting and jump to the recorded data by time directly including “Calendar, Hour and Minute”.



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## (1) Step 1: Select Calendar

Click on the “Calendar” 2008-11-27 tab and it will pop up a calendar. If there is recorded data, the date will show red color for selection.



- Select a Month in the left window of Calendar. The months with recorded data will be marked in red color for selection. Just use mouse to click the month.
- Select a Date in the right window of Calendar. The dates of the selected month will be shown in the right window of Calendar. The dates with recorded data will be marked in red color for selection. Just use mouse to click the month.

## (2) Step 2: Select Hour

Click “Hour ” Hr 00 tab and it will show the pull-down menu providing 0~23 hours for selection. If there is recorded data in the hour, it will show red color for selection, otherwise it will show black color. If it is daylight saving time with extra one hour, the color in that hour will show yellow color.

00	01	02	03	04
05	06	07	08	09
10	11	12	13	14
15	16	17	18	19
20	21	22	23	

## (3) Step 3: Select Minute

Click “Min ” Min 00 tab and it will show the pull-down menu providing 0~59 minutes for selection. If there is recorded data in the minute, it will show red color for selection, otherwise it will show black color. Click any minute that you want to play the recorded data and then click “Cancel” Cancel tab to close the pull-down menu after selection.

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✖ Cancel				
00	01	02	03	04
05	06	07	08	09
10	11	12	13	14
15	16	17	18	19
20	21	22	23	24
25	26	27	28	29
30	31	32	33	34
35	36	37	38	39
40	41	42	43	44
45	46	47	48	49
50	51	52	53	54
55	56	57	58	59

Then, you can see the recorded data in the playback window.




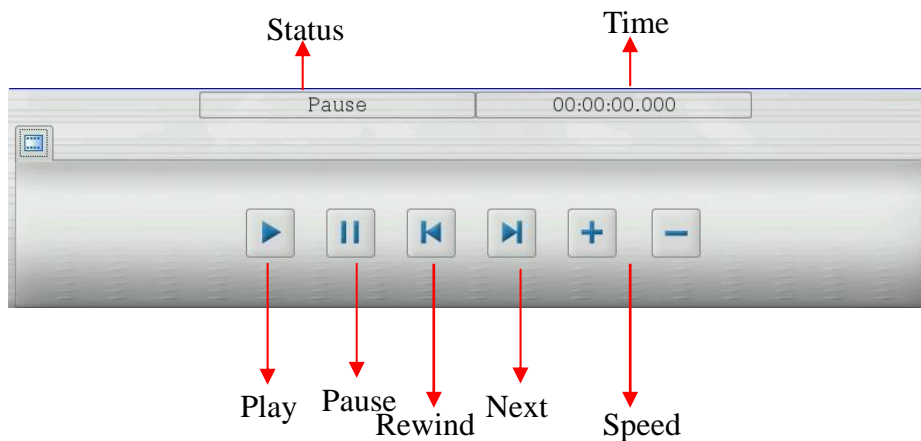
# Linux-Embedded DVR





## Note


1. If the time bar in Timemap shows green color, it means the recorded data with video and audio.
2. If the time bar in Timemap shows red color, it means the recorded data with video only.

(4) **Step 4:** Click “ Play”  button in the “Playback Control Panel” to start playback video.




You can adjust the speed of “Play” or “Rewind” by clicking “ **Speed**” button. The “+”  button is speeding up the Play or Rewind speed and the range is from 1X, 1.5X, 2X, 3X, 4X, 6X to 8X. The “-“  button is slowing down the Play or Rewind speed and the range is from 1/8, 1/7, 1/6, 1/5, 1/4, 1/3, 1/2, to 2/3. Next Frame button allows you to play picture by picture.

**(5) Step 5: Change playback split style.**


The default split style when entering Playback mode is 4-split. This DVR totally supports 4, 8, 9, 10 and 16 split styles in 4:3 monitor and 4, 8, 9, 14 and 17 split styles in 16:9 monitor. If you want to see more playback channels at the same time, you can click “Split”  Tab to change Playback Split style. (Please refer to “Chapter 4-3 Playback Screen Styles”).

## 4-2 Event Search

Besides Time Search, this DVR also provides the function of “ Event Search” to help you to find the recorded data more quickly.

When you click the tab of “ Event Search”  , the Playback Control Window will show the “ Search” template as below.

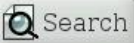




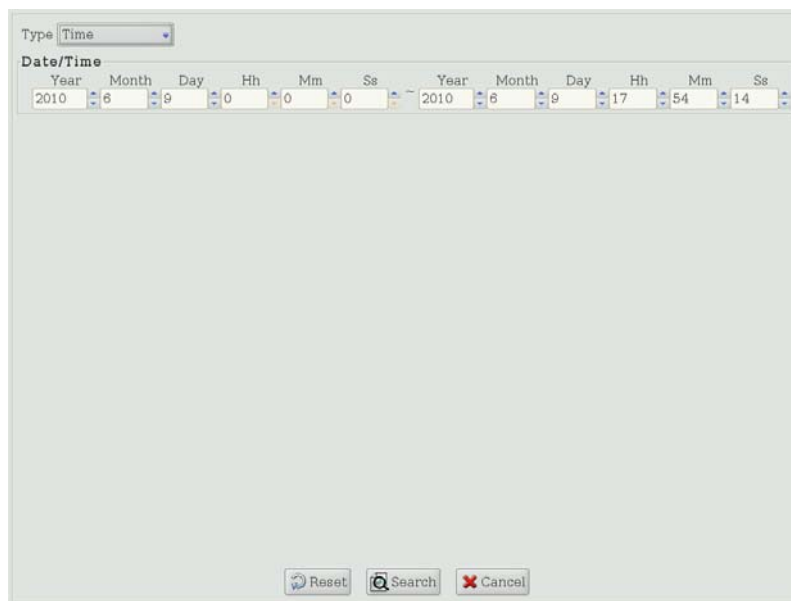
By clicking the “ Search”  tab, it will pop up the “**Search Window**” for your searching. There are four kinds of event search modes, “ **Time, System, Device and POS**”.

Search Mode	Description
Time	Search all of the events within the time range you set up.
System	*Search all of the <b>System</b> events within time range which you set up by ticking the “ Time Search” at the same time or *Search all of the <b>System</b> events without time boundary by disabling the “ Time Search”.
Device	* Search all of the <b>Device</b> events within time range which you set up by marking the “ Time Search” at the same time or *Search all of the <b>Device</b> events without time boundary by disabling the “ Time Search”.
POS	* Search all of the <b>POS</b> events within time range which you set up by ticking the “ Time Search” and POS transaction conditions at the same time or

\*Search all of the **Device** events without time boundary by disabling the “ Time Search”.

## 4-2-1 Event Search by Time

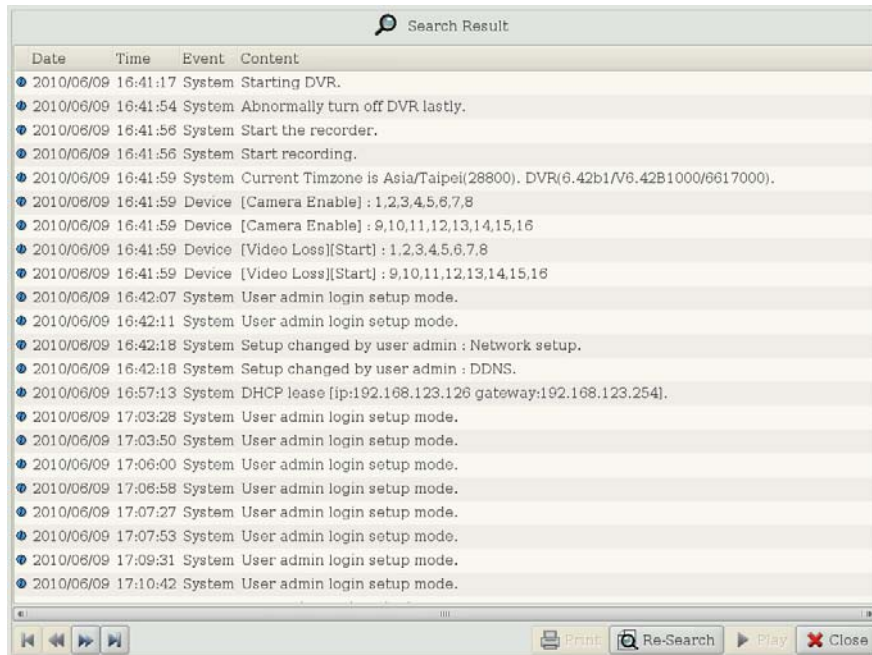
- (1) **Step 1:** Select “ **Time**” mode in the item of Search type in Search Window.
- (2) **Step 2:** Set up the time range of **starting point** and **end point** including Year, Month, Day, Hour, Minute and Second.
- (3) **Step 3:** Click “ **Search**”  tab to start the “ Event Search”. Click “ **Reset**”  tab to go back to Default time range. Click “**Cancel**”  tab to stop the event search.



The screenshot displays a search window titled "Type Time". It features a "Date/Time" section with two rows of spinners for selecting start and end times. The start time is set to 2010-06-09 00:00:00, and the end time is set to 2010-06-09 17:54:14. At the bottom of the window, there are three buttons: "Reset", "Search", and "Cancel".


- (4) **Step 4:** Then, it will show the “**Search Report**” as below.


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Date	Time	Event	Content
2010/06/09	16:41:17	System	Starting DVR.
2010/06/09	16:41:54	System	Abnormally turn off DVR lastly.
2010/06/09	16:41:56	System	Start the recorder.
2010/06/09	16:41:56	System	Start recording.
2010/06/09	16:41:59	System	Current Timzone is Asia/Taipei(28800). DVR(6.42b1/V6.42B1000/6617000).
2010/06/09	16:41:59	Device	[Camera Enable] : 1,2,3,4,5,6,7,8
2010/06/09	16:41:59	Device	[Camera Enable] : 9,10,11,12,13,14,15,16
2010/06/09	16:41:59	Device	[Video Loss][Start] : 1,2,3,4,5,6,7,8
2010/06/09	16:41:59	Device	[Video Loss][Start] : 9,10,11,12,13,14,15,16
2010/06/09	16:42:07	System	User admin login setup mode.
2010/06/09	16:42:11	System	User admin login setup mode.
2010/06/09	16:42:18	System	Setup changed by user admin : Network setup.
2010/06/09	16:42:18	System	Setup changed by user admin : DDNS.
2010/06/09	16:57:13	System	DHCP lease [ip:192.168.123.126 gateway:192.168.123.254].
2010/06/09	17:03:28	System	User admin login setup mode.
2010/06/09	17:03:50	System	User admin login setup mode.
2010/06/09	17:06:00	System	User admin login setup mode.
2010/06/09	17:06:58	System	User admin login setup mode.
2010/06/09	17:07:27	System	User admin login setup mode.
2010/06/09	17:07:53	System	User admin login setup mode.
2010/06/09	17:09:31	System	User admin login setup mode.
2010/06/09	17:10:42	System	User admin login setup mode.


There are 5 columns in the Search Report including **Event Legend, Date, Time, Event Type, and Content**. The first column uses the legends to indicate Event styles including “Information (🟦)”, “Warning (⚠️)”, or “Error (🔴)” for easy identification. The columns of **Date and Time** list the event time information. **Event** column shows the Event types including “System”, or “Device” event. The **Content** column shows the detail description of System event.

Each page in the search report includes 24 event logs and you can click one of the “Jump button  to go to the event page you want to see.



 : Jump to the first page of event search report.

 : Jump to the preview page of event search report.

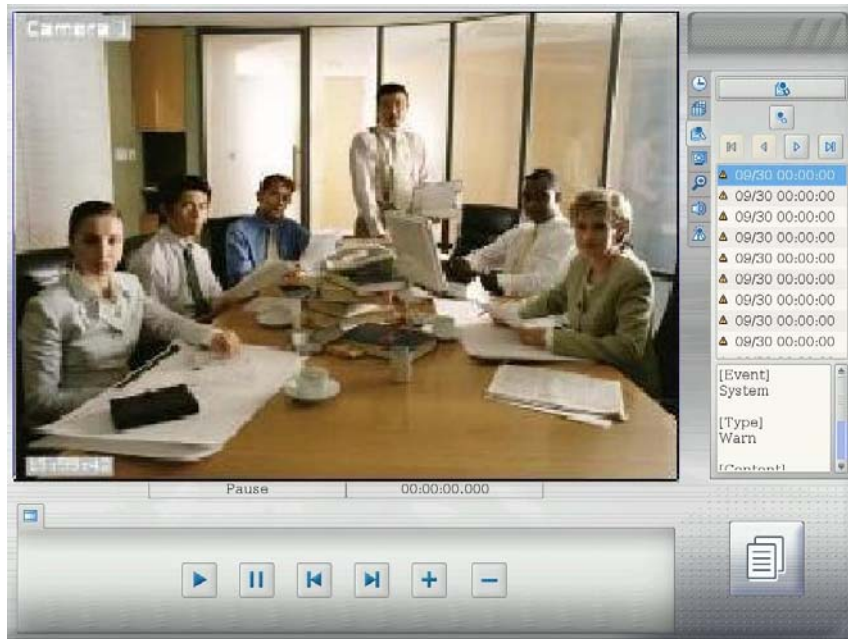
 : Jump to the next page of event search report.

 : Jump to the last page of event search report.


You can click “Print ”  tab to print the logs of search report.

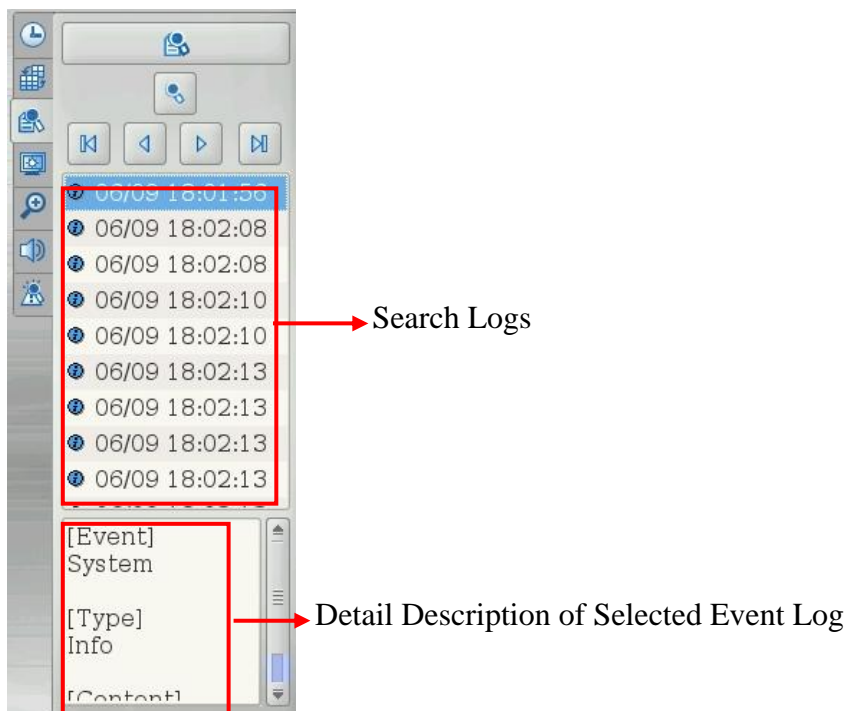
(5) **Step 5:** Click  button. The system will back to “**Playback Window**” as the following picture. The search logs will be shown in the Control Window. Or click “Re-search”  tab and the system will go back to the **Search Window**.

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(6) **Step 6:** There are two parts in the **Control Window**. The up window is the summary report of event search result only with event time information. The down window lists the detail description of selected event log that you select in the up window. Click any log in the up window and the detail information of this log will be shown in the down window. Click

“Goto”  tab to jump to the start point of the event and click “Play” button to start to play the event video.

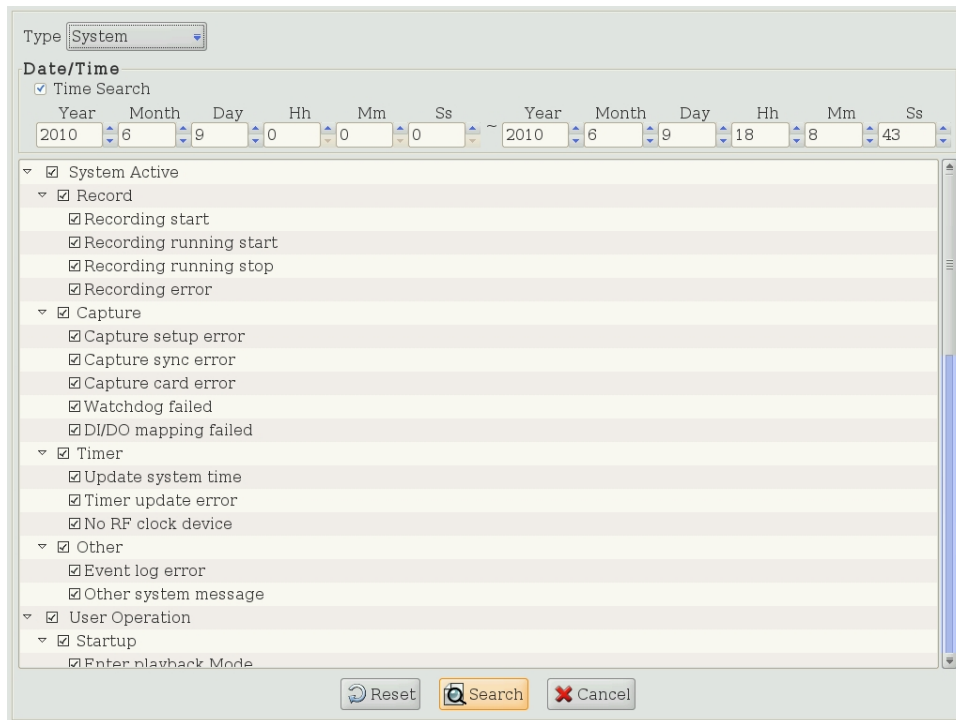




<b>!</b>	<p><b>Note</b></p> <p>In each page, only 10 event logs will be shown in the event window and you can click one of the “ Jump”  button to go to the event page you want to see.</p>
----------	---

## 4-2-2 Event Search by System

You can search the event by “**System**” mode and you can also add the “**Time Search**” condition to narrow the search range. By marking the various **System conditions**, you can decide the search range.



The screenshot shows a search configuration window. At the top, 'Type' is set to 'System'. Below it, 'Date/Time' is expanded, and 'Time Search' is checked. Two date-time pickers are visible, both set to 2010-06-09. The first is at 00:00:00 and the second is at 18:08:43. A scrollable list of system events follows, each with a checked checkbox. The events are grouped into categories: System Active, Record (Recording start, Recording running start, Recording running stop, Recording error), Capture (Capture setup error, Capture sync error, Capture card error, Watchdog failed, DI/DO mapping failed), Timer (Update system time, Timer update error, No RF clock device), Other (Event log error, Other system message), and User Operation (Startup, Enter playback Mode). At the bottom, there are 'Reset', 'Search', and 'Cancel' buttons.

The following table lists all of the “**System Events**”.

Event Group	Rule
Record	Recording Start
	Recording Stop
	Recording running

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	Recording exception
Capture	Capture setup error
	Capture sync error
	Capture card error
	Watchdog Fail
	DIO mapping Fail
Timer	Update time to RF clock
	Update time to RTC clock
	Timer update error
	No RF clock device
Other	Event log error
Startup	Enter play recorded video Mode
	Enter disk tool menu
Monitor	Enter setup mode
	Enter playback mode
	DVR online
	Current Timezone
	Detect camera count error
	System Shutdown: Disk error detected
Setup	System Setup change
	Max user count limit is 128
Playback	Enter monitor
	Enter backup
Storage	No disk found
	Disk error
	Recycle disk
Alarm	FTP alarm
	E-mail alarm
	SMS alarm
	Voice Dialer
Remote	Setup change by remote user
	Remote Setup Fail
	Remote Setup get Fail

Refer to the Step 1 to Step 6 of Event Search by time to search the recorded video.

## 4-2-3 Event Search by Device

You can search the event by “**Device**” mode and you can also add the “**Time Search**” condition to narrow the search range. By marking the various **Device conditions**, you can decide the search range

The following table lists all of the “**Device Type**”

Device Event	Event Type	Log Message
Camera	Camera Motion	Camera Motion: 1, 2, 3...
	Camera Video Loss	Video Loss: 1, 2, 3...
	Camera Enable	Camera Enable: 1, 2, 3
	Camera Mask	Camera Mask: 1, 2..
	Remote Alarm Record	Remote Alarm Record: 1, 2, 3..
	Camera Disable	Camera Disable: 1, 2, 3
DI	DI is triggered or not.	DI is triggered: 1, 2, 3
DO	DO is triggered or not.	DO is triggered: 1, 2, 3...

Refer to the **Step 1 to Step 6 of Time Mode Search** to search the recorded data.

## 4-2-4 Event Search by POS

Because this DVR supports POS application, you can search the POS events when you enable POS integration function. Please refer to Chapter 5-7 POS Setting. When you do the POS event search, you can also add the “**Time Search**” condition to narrow the search range. By marking the various **POS conditions**, you can decide the search range.

DVR provides the following search conditions

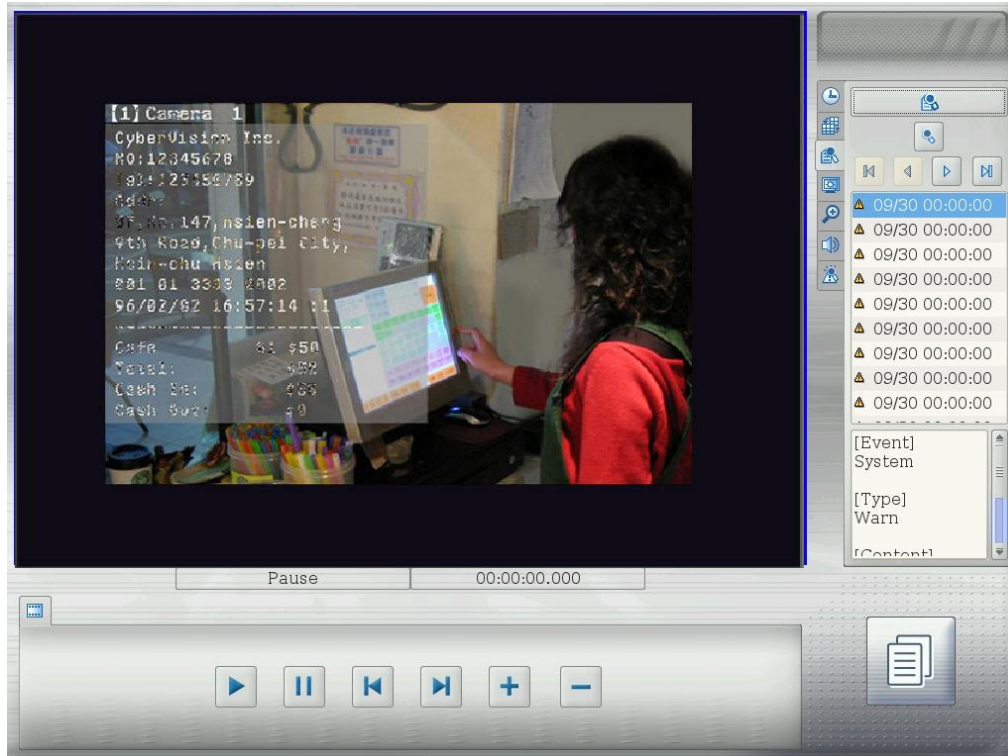
- POS No: Search the video by POS No.
- Transaction Amount: Search the recorded data by setting the transaction amount.
- Total Transactions Quantity: Search the recorded data by setting the transaction quantity.
- Camera No: Search the recorded data by the camera no.
- Keyword: Search the recorded data with the keyword in POS transaction content.

The screenshot shows a search interface for POS events. At the top, the 'Type' is set to 'POS'. Under 'Date/Time', the 'Time Search' checkbox is checked. Two date and time ranges are specified: the first range is from Year 2010, Month 6, Day 9, Hh 0, Mm 0, Ss 0 to Year 2010, Month 6, Day 9, Hh 18, Mm 8, Ss 43. Below this, there are three search criteria sections: 'POS No' with a 'Number' dropdown set to 1; 'Transaction Amount' with a 'Condition' dropdown set to '<=' and an 'Amount' dropdown set to 1; and 'Total Transaction Quantity' with a 'Condition' dropdown set to '<=' and a 'Quantity' dropdown set to 1. There is also a 'Camera No' section with a grid of buttons numbered 1 to 16. At the bottom, there is a 'Keyword' section with an 'Input' field and a search icon. At the very bottom are three buttons: 'Reset', 'Search', and 'Cancel'.


Refer to the **Step 4 to Step 6 of Time Mode Search** to search the recorded data.

Besides the detail POS transaction data is listed in **Control Window**, you can also enable POS Playback OSD function to let POS transaction data overlaid in the screen. Please refer to Chapter 4-6-4 Playback Setting.

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## 4-3 Playback Screen Styles

Like Screen Styles in **Monitor** mode, this DVR also provides multiple screen styles in **Playback** mode including “Full Screen”, “4 Split”, “8 Split”, “9 Split”, “10 Split”, “16 Split (1~16 Ch)” and “16 split (17~32)” for 4:3 monitor or “4 Split”, “8 Split”, “9 Split”, “14 Split”, “17 Split (1~16 Ch)” and “17 split (17~32)” for 16:9 wide screen monitor. Furthermore, you can also self-define a group of playback channels in any split style for quick selection. Just click “Screen Style”  and it will list multiple screen styles in **Playback Control Window**.



- **Full Screen**

When you click “Full Screen”  Full Screen tab in Playback Control Window, DVR will maximize the playback screen to full screen without user interface.

- **Split Styles**

Like Screen Style in Monitor Mode, to maximize the screen display, this DVR system also supports two types of split styles in Playback mode according to the monitor you install. However, the maximum concurrent playback channels are 16 channels. For the 4:3 monitor, it will support “4 Split”, “8 Split”, “9 Split”, “10 Split”, “16 Split (1~16 Ch)” and “16 split (17~32)” screen styles and for 16:9 wide screen monitor, it will provide “4 Split”, “8 Split”, “9 Split”, “14 Split”, “17 Split (1~16 Ch)” and “17 split (17~32)” screen styles. The split styles


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that DVR supports will be listed in the Control Window. You just need to click on any split style in the Control Window and the screen will switch to the split style you select immediately. You can also click any channel to enlarge the screen picture to single screen by two steps and click it again to back to the original split style.


## ● Playback Group

Besides default setting, you can also self-define a group of playback channels for any split style.

 : Add a Group of Playback Channels


 : Edit Name of Playback Group

 : Delete a Group of Playback Channels

- (1) Step 1: Select the Split style that you want to set “Group” in Screen Style Mode. For example, 4 Split Style.
- (2) Step 2: Go to Time Search Mode. The default playback channels for 4 split style are 1, 2, 3, and 4-channel. Click Channel 5 data bar  in Timemap and “Drag and Drop” it to the screen location of channel 1. Then, the screen picture of channel 1 will be replaced by channel 5. Repeat this step to replace channel 2 with channel 6, channel 3 with channel 7 and channel 4 with channel 8.



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- (3) Step 3: Back to the Screen Style Mode and click Add “

Then, the “BACKYARD” that you define for a Group will become one of the Screen Styles listed in Control Window. You can click “Edit” button to edit the Group name or click “Delete” button to delete the Group you set.



## ● Max Playback Channels

This DVR supports max 16 channels playback simultaneously. However, the DRAM installed in the DVR will decide how many playback channels that are provided by DVR to ensure system reliability. DVR will automatically detect DRAM capacity. If DVR is installed 1G DRAM, it will provide max 16 channels playback function. If DVR just installs 512MB DRAM or less, only four channels or eight channel playback function will be provided. Please refer to the following table for the playback channels that are provided by DVR system according to the DRAM and DVR channels.

RAM size	256MB	512MB	1GB
----------	-------	-------	-----



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DVR channel			
4	Max 4 ch playback	Max 4 ch playback	Max 4 ch playback
8		Max 8 ch playback	Max 8 ch playback
16		Max. 4 ch playback	Max. 16 ch playback



## 4-4 Playback Color Setting

Click “Color” tab in the Control Window and it will show two color settings in Control Window including Contrast and Brightness. However, this function only works in signal screen mode, you should click on any channel to enlarge it to single screen and the color setting will be shown on the Control Window for your setting.



## 4-5 Digital Zoom in Playback

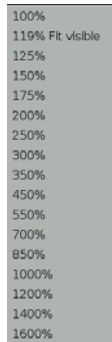
When you click “Digital Zoom” Tab in Playback, it will show Digital Zoom Control Menu in Control Window. The function of “Digital Zoom” is used to enlarge the image in the screen in single channel view.

Step 1: Click  Zoom-in icon to enlarge the image or  Zoom-out icon to shrink the enlarged image.

Step 2: Select the index in the Control Window for Zoom-in or Zoom-out. Then, you can start to Zoom-in or Zoom-out the image in screen according to the index you select by left click the mouse on the image. You can left-click the image again and the image will be zoomed-in or zoomed-out by the next index. For example, if you select 125% index to start to zoom-in image, the first time you left click the mouse on the image, the screen will be zoom-in by 125% times

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of the original size. Once you click again, the image will be zoom-in again by 150% times (the next index of 125%) of the original size. Below is the index list for Zoom-in or Zoom-out.



Index List

<b>!</b>	<p><b>Note</b></p> <ol style="list-style-type: none"><li>1. The index of “Fit Visible” means that the image is enlarged to fit the size of screen.</li><li>2. The max index number is 16 times of the original size and the min index number is 100% equal to original size.</li><li>3. Digital Zoom function only works in single channel view.</li></ol>
----------	--

Step 3: By right click mouse and drag it, you can move the zoom-in area shown in the screen. In the preview window, you can see that the red frame marks the location of current Zoom-in area on the image.

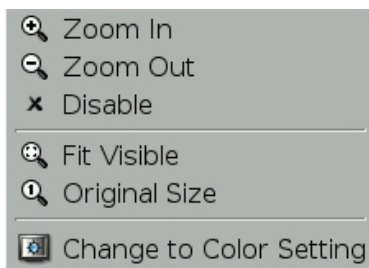


→ Location of Zoom-in  
area

Preview Window

Step 4: By right clicking the mouse on the image, it will show the control menu as below.

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Function	Description
Zoom in	Enable the function of enlarging the image
Zoom out	Enable the function of shrinking the enlarged image
Disable	Disable Zoom-in or Zoom-out function
Fit Visible	Enlarge the image to fit the screen size
Original Size	Shrink the image to original size
Change to Color Setting	Change to Color Setting mode

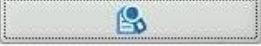
## 4-6 Playback Audio Setting

Click “Audio” tab in the Control Window and it will show the audio volume control bar for your setting. However, this function only works in signal screen mode, you should click on any channel to enlarge it to single screen and the audio volume control will be shown on the Control Window for your setting.



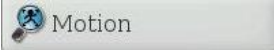
## 4-7 Smart Search

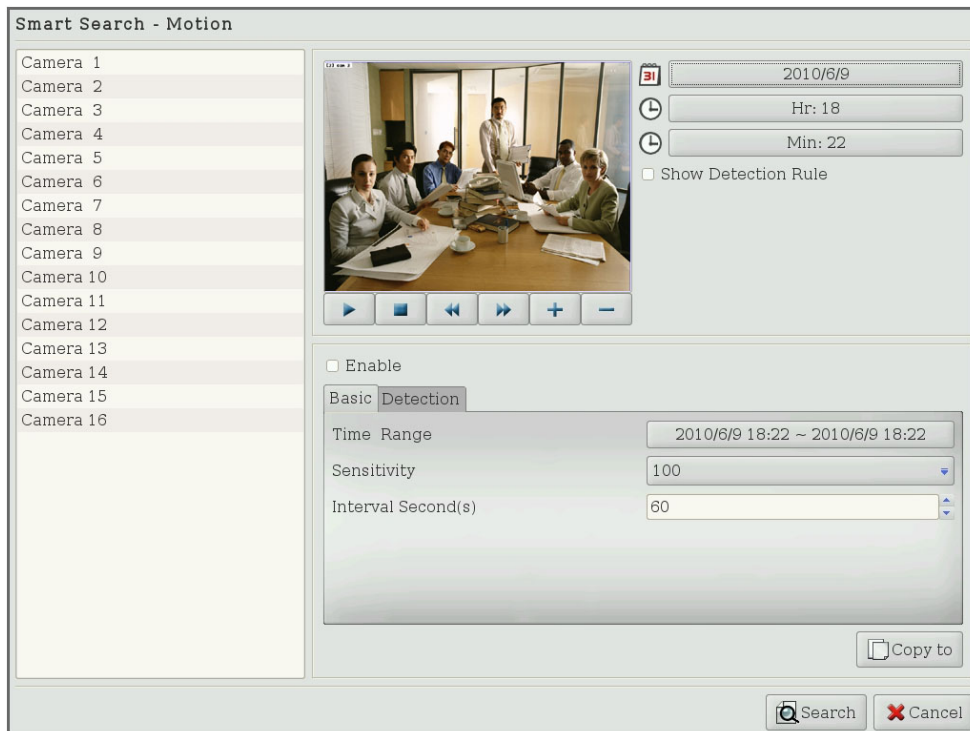
This feature provides you with intelligent search function to search “Detected Motion/Missing Object/Unattended Object” in the specific region.

By clicking  tab on the bottom right of playback window and smart search access menu will be shown as below




### 1. Motion detection

- By clicking the “Motion detection”  tab, it will enter to the motion detection function page as below



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- You can select time by data, hour, and minute first, and it will show the video on the preview window.
- Tick “Show detection rule” and it will show the detection area which you want to search on the image.
- After Tick “Enable” and you can setup the Basic and detection setting.
  - Basic
    - ◆ Time Range: You could select the time range which you want to search the motion on the recording file.
    - ◆ Sensitivity: You can set the sensitivity of motion detection during recording.
    - ◆ Interval: You could select the interval between two frames when you search the recording.
  - Detection

- ◆ By clicking  button, it will show the detection area setting window as below.



- This is used to set the detection area.
  - The default setting of “Detection Areas” is “Set All”. You can have Method #1 Under “Full Detection Area”
    - ◆ Select “ Clear” option in selection bar.
  - Use mouse to drag an area that you don’t want to have motion detection. You can

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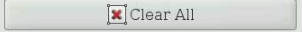

set multiple areas by dragging mouse again.

Method #2 Under “Non-Motion Detection Area”

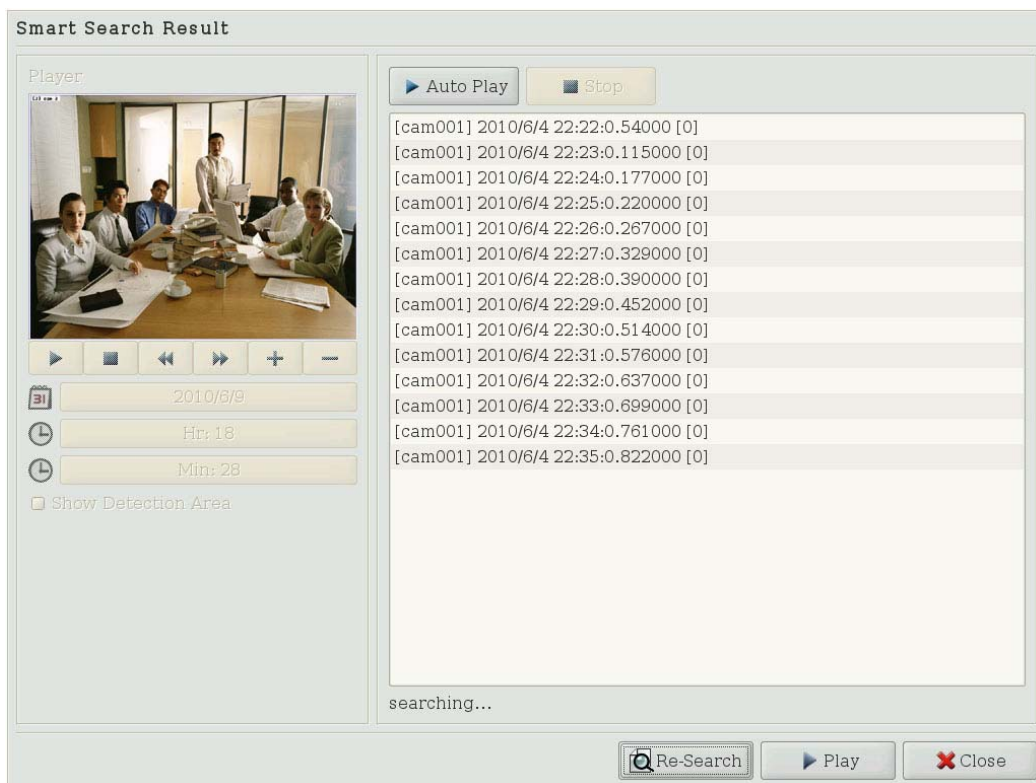
- ◆ Select “Set” option in selection bar.

Use mouse to drag an area that you want to have motion detection. You can set multiple areas by dragging mouse again

Method#3 One Time Setting

You can also have one time setting by clicking  under “ Full Motion Detection Area” or clicking  under “Non-Motion Detection Area”

- After setting please click  button, and it will show the search result as bellow.



Smart Search Result

Player

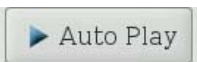
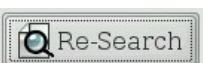
2010/6/9  
Hr: 18  
Min: 28

Show Detection Area

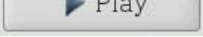
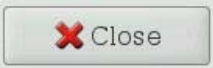
[cam001] 2010/6/4 22:22:0.54000 [0]  
[cam001] 2010/6/4 22:23:0.115000 [0]  
[cam001] 2010/6/4 22:24:0.177000 [0]  
[cam001] 2010/6/4 22:25:0.220000 [0]  
[cam001] 2010/6/4 22:26:0.267000 [0]  
[cam001] 2010/6/4 22:27:0.329000 [0]  
[cam001] 2010/6/4 22:28:0.390000 [0]  
[cam001] 2010/6/4 22:29:0.452000 [0]  
[cam001] 2010/6/4 22:30:0.514000 [0]  
[cam001] 2010/6/4 22:31:0.576000 [0]  
[cam001] 2010/6/4 22:32:0.637000 [0]  
[cam001] 2010/6/4 22:33:0.699000 [0]  
[cam001] 2010/6/4 22:34:0.761000 [0]  
[cam001] 2010/6/4 22:35:0.822000 [0]

Auto Play Stop

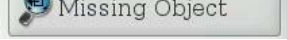
Re-Search Play Close

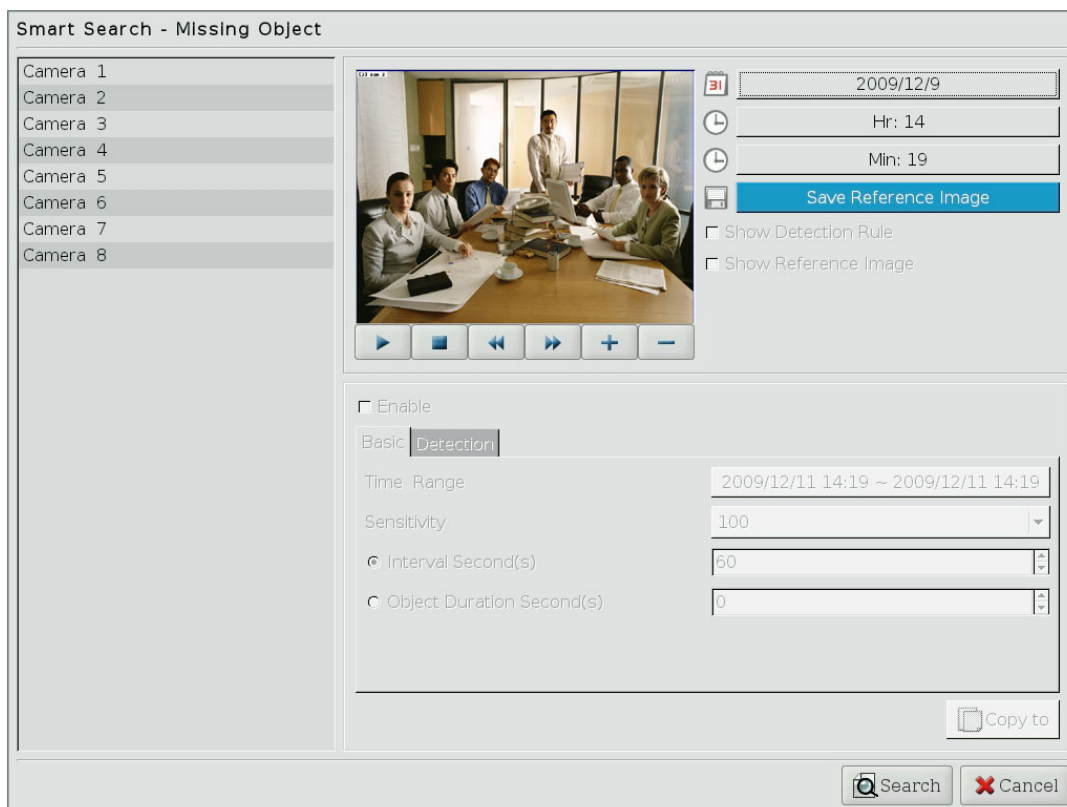
- Click  button, it will show the picture of search result on the preview window on left of the search result page.
- Click  button, it will back to the search setting page.

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- When you select one of the result and click  button, it will go to the playback and play the recording file.
- Click  button, and it will back to the playback page without search result.

## 2. Missing object

- By clicking the “Motion detection”  tab, it will enter to the missing object function page as below



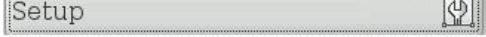
- You can select time by data, hour, and minute first, and it will show the video on the preview window.
- Click “ save reference image” to save the reference to system for search
- Tick “Show detection rule” and it will show the detection area which you want to search on the image.
- After save reference image then you can tick “Enable” and you can setup the Basic and detection setting.
  - Basic
    - ◆ Time Range: You could select the time range which you want to search the

# Linux-Embedded DVR



motion on the recording file.

- ◆ Sensitivity: You can set the sensitivity of motion detection during recording
- ◆ Interval: You could select the interval between two frames when you search the recording.
- ◆ Object Duration second(s): You could select the object duration time for avoid the false alarm. For example: when you select 5 seconds, if the object missing less than 5 seconds, it will not be searched on the search result.

## ■ Detection

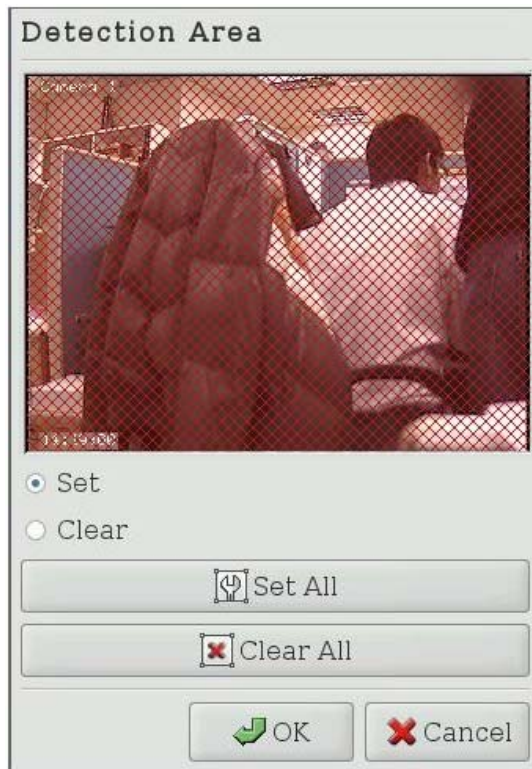
- ◆ Tick Object size and clicking  button, it will show the object size setting window as below



- Use mouse to drag an area that you want to have detected. You can set multiple areas by dragging mouse again.
- By click  button, to clean all areas you set before.
- ◆ Tick detection area and clicking  button, it will show the detection area setting window as below.



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- This is used to set the detection area.

The default setting of “Detection Areas” is “Set All”. You can have Method #1 Under “Full Detection Area”

- Select “ Clear” option in selection bar.

Use mouse to drag an area that you don’t want to have motion detection. You can set multiple areas by dragging mouse again.

Method #2 Under “Non-Motion Detection Area”

- Select “ Set” option in selection bar.

Use mouse to drag an area that you want to have motion detection. You can set multiple areas by dragging mouse again

Method#3 One Time Setting

- You can also have one time setting by clicking



under “ Full Motion Detection Area” or



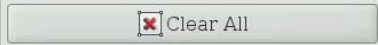
clicking under “Non-Motion

Detection Area

- ◆ By click min object: size will show the setup window as below

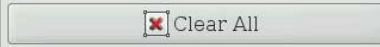
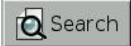
# Linux-Embedded DVR

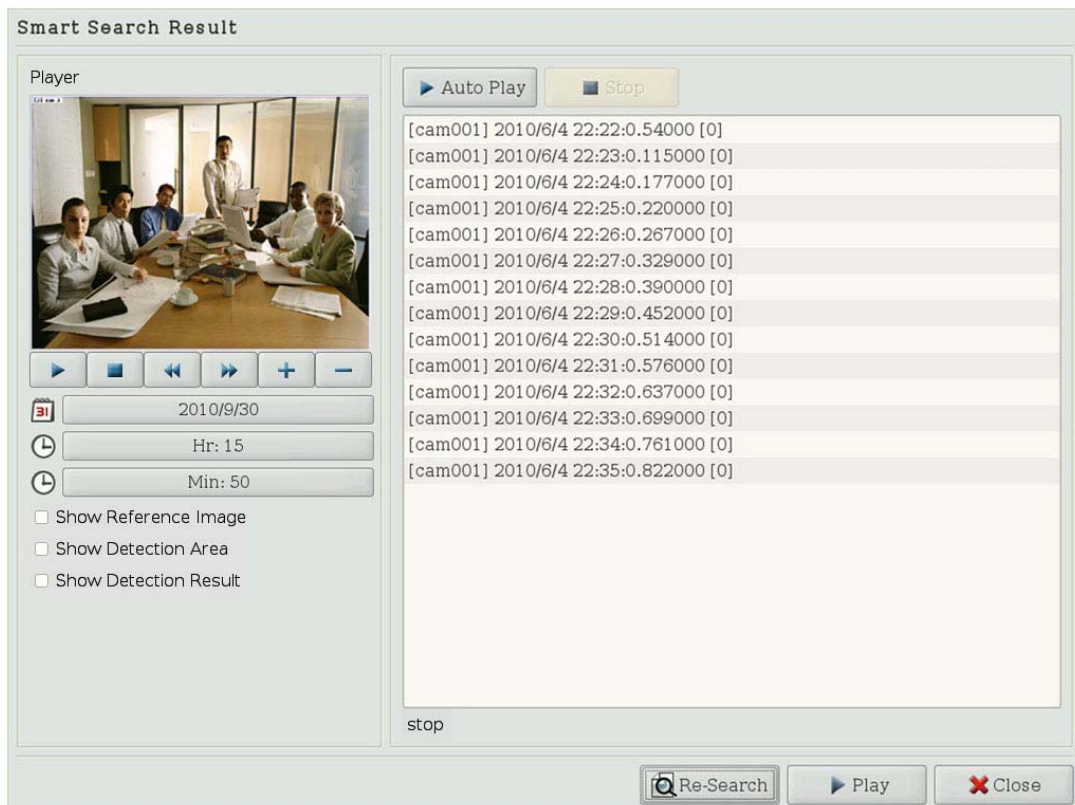


- Use mouse to drag the min object size which you want to filtrate in the detection area and you can click  button, to clean all areas you set before.
  - The default setting is 10\*10 pixels.
- ◆ By click max object: size will show the setup window as below



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- Use mouse to drag the max object size which you want to filtrate in the detection area and you can click  button, to clean all areas you set before.
- The default setting is 320\*240 pixels
- After setting please click  button, and it will show the search result as bellow.



Smart Search Result

Player

2010/9/30

Hr: 15

Min: 50

Show Reference Image

Show Detection Area

Show Detection Result

stop

[cam001] 2010/6/4 22:22:0.54000 [0]

[cam001] 2010/6/4 22:23:0.115000 [0]

[cam001] 2010/6/4 22:24:0.177000 [0]

[cam001] 2010/6/4 22:25:0.220000 [0]

[cam001] 2010/6/4 22:26:0.267000 [0]

[cam001] 2010/6/4 22:27:0.329000 [0]

[cam001] 2010/6/4 22:28:0.390000 [0]

[cam001] 2010/6/4 22:29:0.452000 [0]

[cam001] 2010/6/4 22:30:0.514000 [0]

[cam001] 2010/6/4 22:31:0.576000 [0]

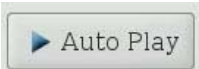
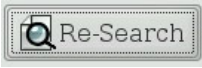


[cam001] 2010/6/4 22:32:0.637000 [0]

[cam001] 2010/6/4 22:33:0.699000 [0]

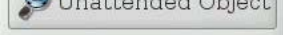
[cam001] 2010/6/4 22:34:0.761000 [0]

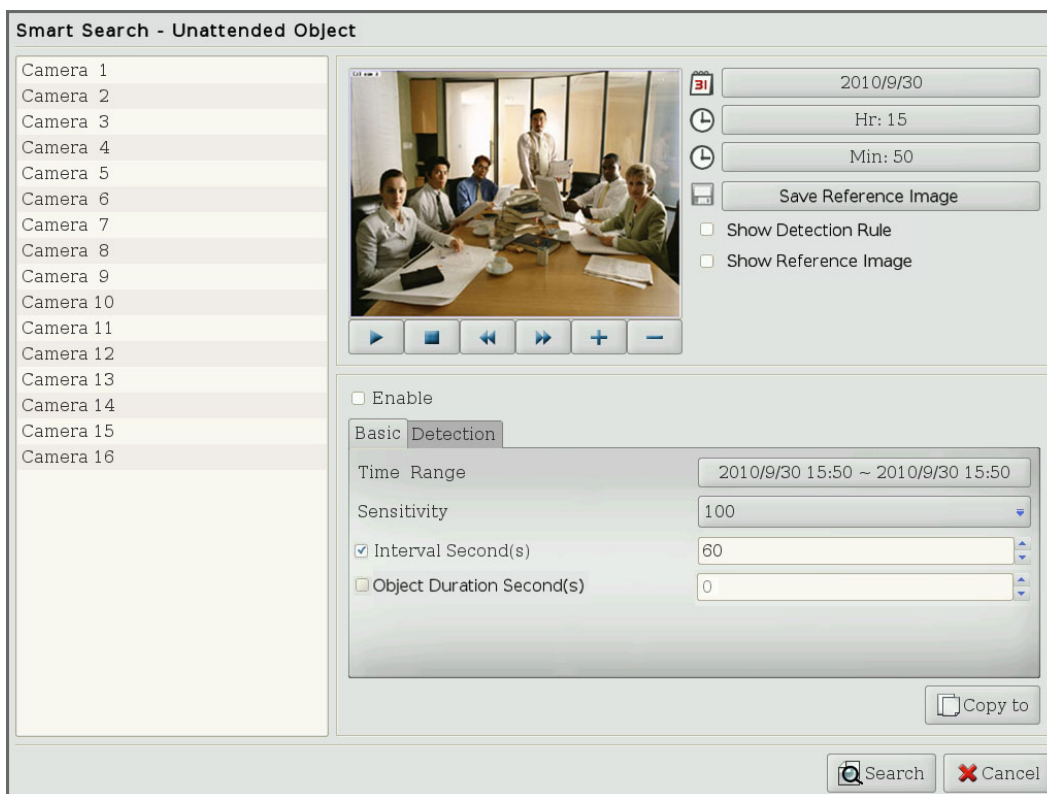
[cam001] 2010/6/4 22:35:0.822000 [0]

Re-Search Play Close

- Click  button, it will show the picture of search result on the preview window on left of the search result page.
  - Click  button, it will back to the search setting page.
  - When you select one of the result and click  button, it will go to the playback and play the recording file.
- Click  button, and it will back to the playback page without search result.

## 3. Unattended object

- By clicking the “Motion detection”  tab, it will enter to the unattended object function page as below

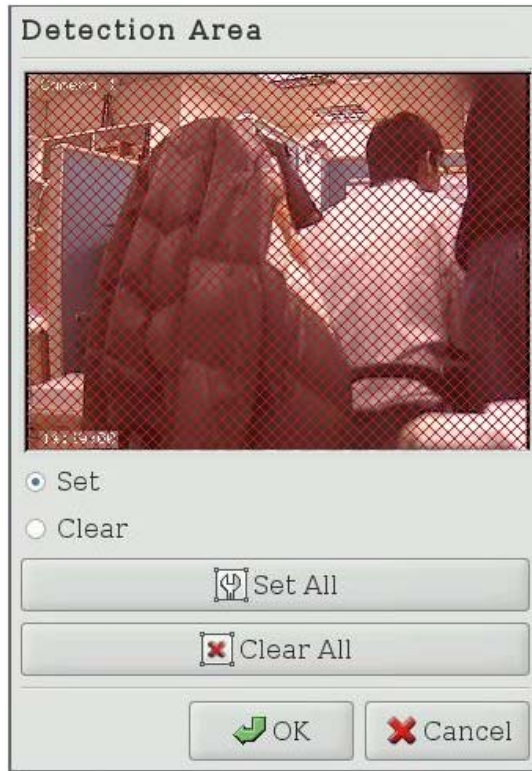


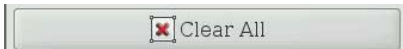

- You can select time by data, hour, and minute first, and it will show the video on the preview window.
- Click “ save reference image” to save the reference to system for search
- Tick “Show detection rule” and it will show the detection area which you want to search on the image.
- After save reference image then you can tick “Enable” and you can setup the Basic and detection setting.
  - Basic
    - ◆ Time Range: You could select the time range which you want to search the motion on the recording file.
    - ◆ Sensitivity: You can set the sensitivity of motion detection during recording
    - ◆ Interval: You could select the interval between two frames when you search the recording.
    - ◆ Object Duration second(s): You could select the object duration time for avoid the false alarm. For example: when you select 5 seconds, if the object unattended less than 5 seconds, it will not be searched on the search result.

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## ■ Detection


- ◆ Tick detection area and clicking  button, it will show the detection area setting window as below.



- This is used to set the detection area.  
The default setting of “Detection Areas” is “Set All”. You can have  
Method #1 Under “Full Detection Area”
  - Select “ Clear” option in selection bar.  
Use mouse to drag an area that you don’t want to have motion detection. You can set multiple areas by dragging mouse again.Method #2 Under “Non-Motion Detection Area”
  - Select “ Set” option in selection bar.  
Use mouse to drag an area that you want to have motion detection. You can set multiple areas by dragging mouse againMethod#3 One Time Setting
  - You can also have one time setting by clicking  under “ Full Detection Area” or clicking  under “Non Detection Area
- ◆ By click min object: size will show the setup window as below

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- Use mouse to drag the min object size which you want to filtrate in the detection area and you can click  button, to clean all areas you set before.
- The default setting is 10\*10 pixels.

◆ By click max object: size will show the setup window as below



# Linux-Embedded DVR

- Use mouse to drag the max object size which you want to filtrate in the detection area and you can click

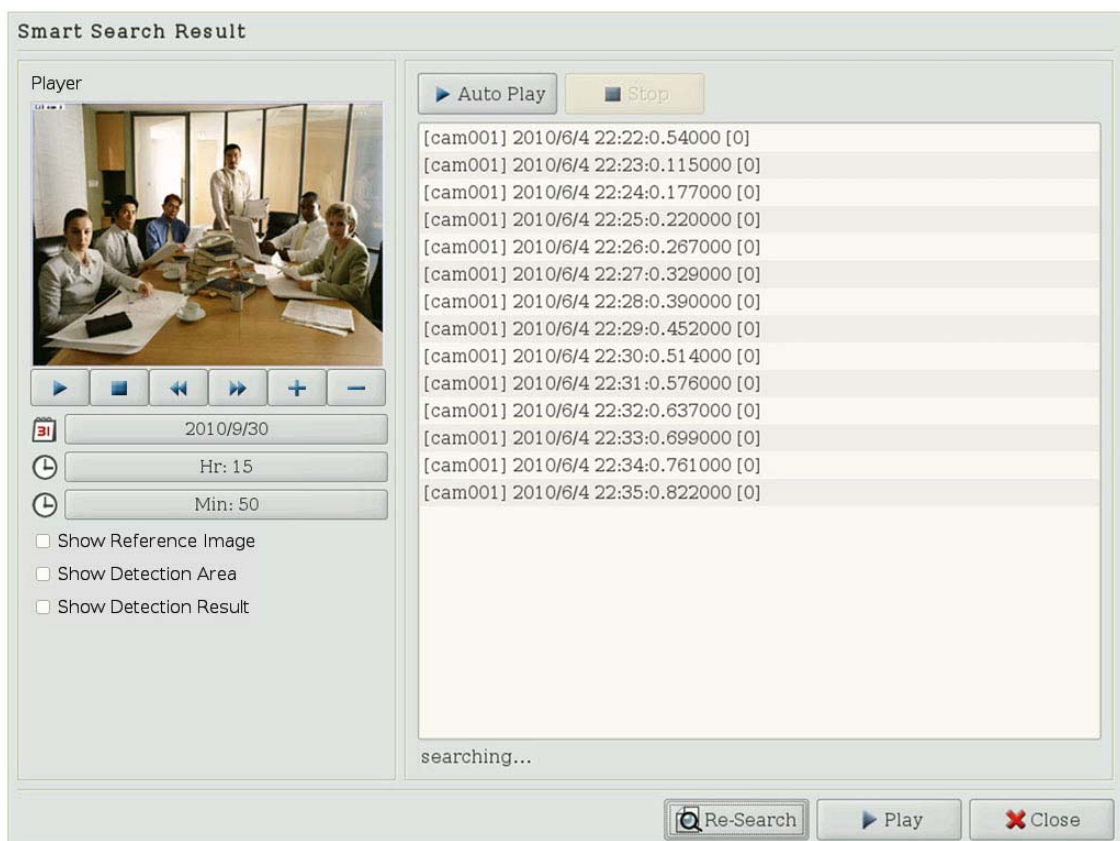


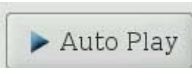
button, to clean all areas you set

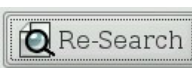
before.

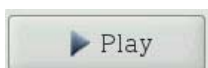
- The default setting is 320\*240 pixels


- After setting please click  button, and it will show the search result as bellow.

A screenshot of a software interface titled 'Smart Search Result'. On the left is a 'Player' window showing a video of a meeting. Below the video are playback controls (play, stop, previous, next, volume) and a search filter for '2010/9/30'. On the right is a list of search results, each starting with '[cam001]' followed by a date and time. At the top right of the results area are 'Auto Play' and 'Stop' buttons. At the bottom right are 'Re-Search', 'Play', and 'Close' buttons. The text 'searching...' is visible at the bottom of the results list.


- Click  button, it will show the picture of search result on the preview window on left of the search result page.

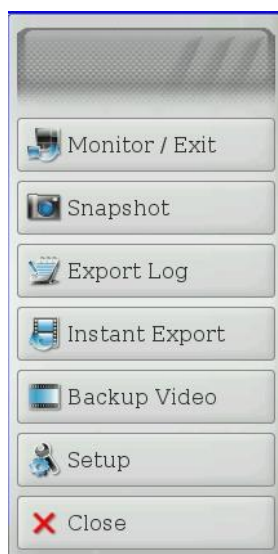
- Click  button, it will back to the search setting page.

- When you select one of the result and click  button, it will go to the playback and play the recording file.

- Click  button, and it will back to the playback page without search result

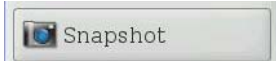
## 4-8 Playback Access Menu

Click the button of “Playback Access Menu”  on the bottom right of playback window and Playback Access menu will be shown as below.



If you want to back to monitor screen, just click “Monitor/Exit”  tab.

### 4-8-1 Snapshot

Click **Snapshot**  tab to catch the images and you can print or save them to USB storage device (this selection shown after plugging in USB storage device).



# Linux-Embedded DVR



- **Save the Image**

- Select Device: Select the storage device where you want to save the snapshot images.
- Select saving channels: Select channels which you want to save the snapshot images from.

- **Print the Image**

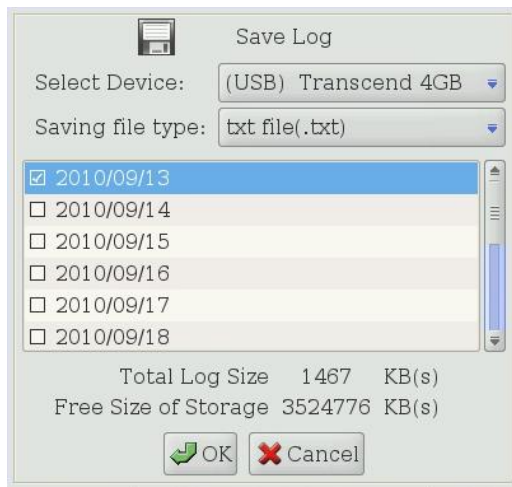
- Select printing channels: Select channels which you want to save the snapshot images from.
- Click “ **Print**”: Click the “ Print button and then select the Printer model you connect.

<b>!</b>	<p><b>Note</b></p> <ol style="list-style-type: none"><li>1. This DVR only supports USB printer. If DVR don't connect a USB printer, the print button will be disabled.</li><li>2. The default paper size is A4.</li><li>3. If there is any unfinished printing file before printing, they will be automatically deleted.</li><li>4. This DVR only supports one USB printer.</li></ol>
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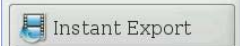
## 4-8-2 Export Log

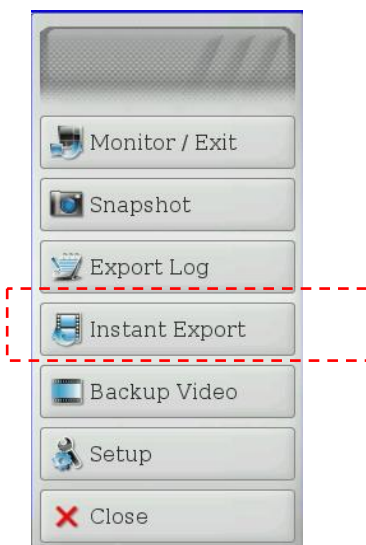
You can backup the log file to external storage device. DVR provides two log file formats. “txt” and “ cvl”. Click “Select Device”, “log file format”. We recommend you to use “txt” format.

# Linux-Embedded DVR



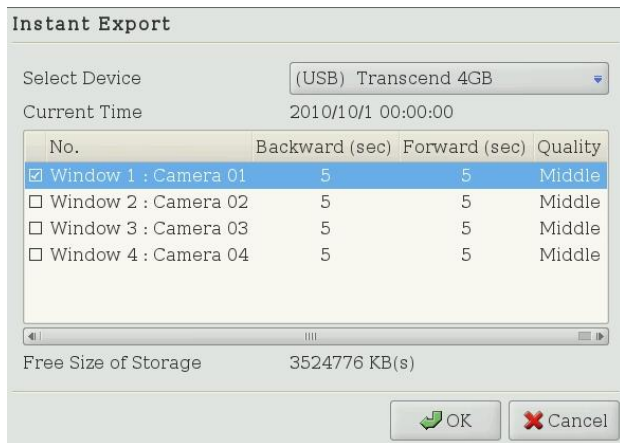
## 4-8-3 Instant Export

Click Snapshot  tab to export .AVI file to USB storage device (this selection shown after plugging in USB storage device).



- **Export AVI file**
  - Select Device: Select the storage device where you want to save the snapshot images.
  - Select export channels: Select channels which you want to export the AVI file.
  - Select export time: You can see the current time on the “Instant Export” window. And please select the Backward(second) and Forward to export the time which you want.
  - Select quality :You could select the quality of the AVI file. System provide three level “Low”, “Middle”, and “High” to choise.

# Linux-Embedded DVR



- **Export AVI list**

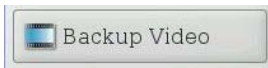
- It will show the “status”, File(s)name”, End Time”, and “Size”.
- Status: There a four status include “OK”, “Fail”, “No video exist”, and “No space”.
- File(s):It shows video start time in the file name.
- End time: It shows the end time of video file.
- Size: It shows the size of video file.
- Total summary: It shows the status of total files.



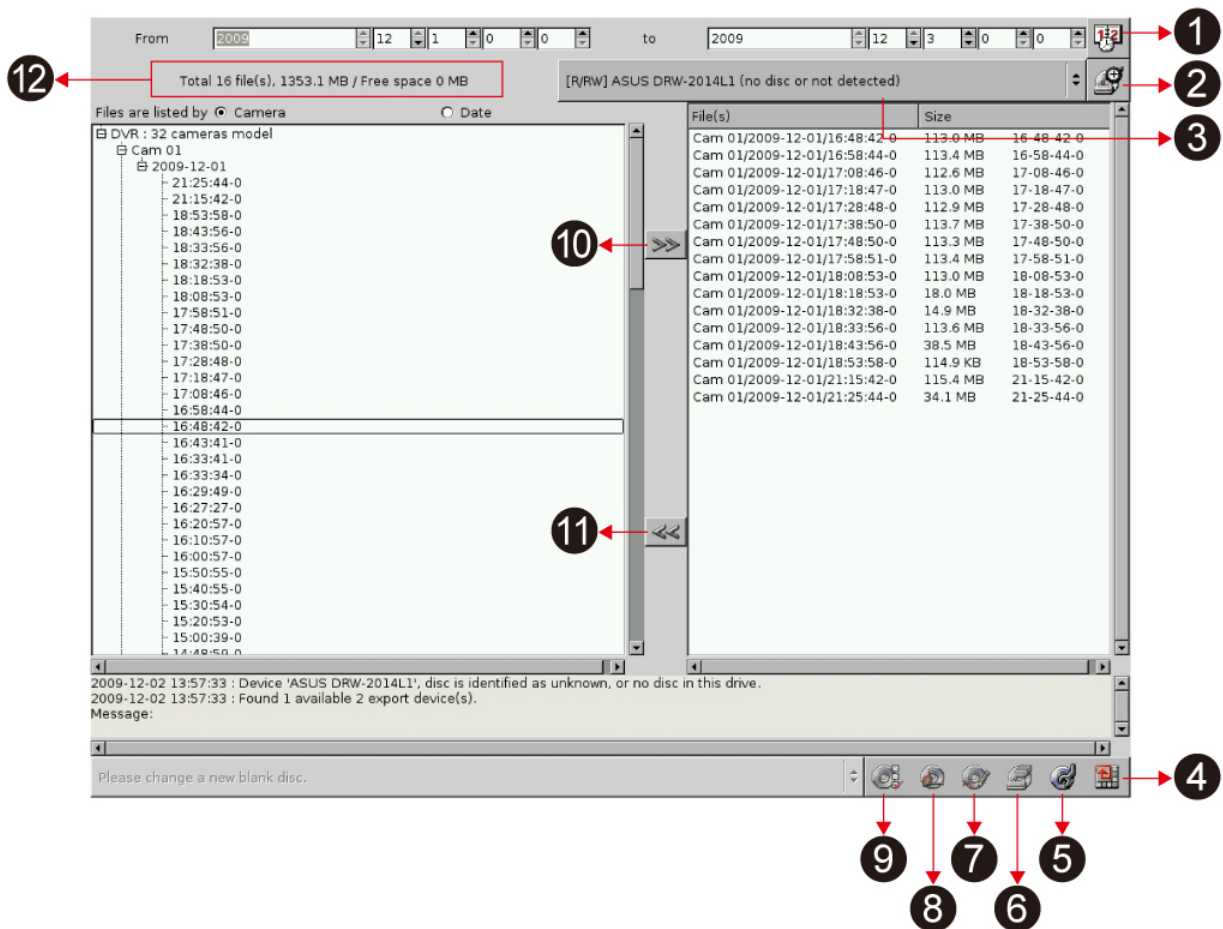
## 4-8-4 Backing up Video Files

You can back up the video files from hard disk to burning device such as CD-R/W or DVD-R/W or USB external storage media, such as USB pen drive or USB Hard Disk. Click

**Backup Video**






tab to see the following screen:



# Linux-Embedded DVR

Items	Function	Description
1	Reset Time Range	Reset the time range of backup data.
2	Rescan Device	Rescan backup device.
3	Backup Device	List the available backup device
4	Exit	Exit backup menu
5	Configuration	Set up the backup configuration
6	Erase the disk	Erase the disc before burning data to optical disc
7	Export files	Save file to USB device.
8	Burning disc	Start to burn data to optical device.
9	Verify Disc	Verify if the files are successfully burned to the disc.
10	Select backup file	Select files for backup
11	Delete file	Delete files for backup
12	Selected File Info	List the total selected files, files size and disc free space.

## 4-8-4-1 Backing Up Procedures

- (1) Before you start to back up the video files, make sure that the back up program has detected the IDE/USB burning devices or USB storages. If not, please check if the device is installed properly and click  to rescan the device. After that, the device still can't be detected, please verify if the device is ok.
- (2) When you put the disc to burning device or plug the USB storage device to the DVR, click the “**Backup Device**” or “**Rescan Device**” to get the device information. The row of “**Selected File Info**” in the upper left screen will show the device space for backing up.
- (3) **Select the files to back up:**  
Expand the hard drive directories in the left of the window. Drag the mouse to select the recording files for backup (by Year, Month, Date).
- (4) **Erase (Blank) the Disk:**  
If you use the burning device such as CD-R/W, DVD+R/RW or DVD-R/W to back up the files, you need to check whether the disc is used. If yes, the icon  will lighten after you insert the disk to the recorder.
  - a. Click on  to start the erasing process.


# Linux-Embedded DVR


b. After it is done, the Message area will display “Done”.









## Note

If CD-R is used, you do not need to execute this.

If the Backup device is USB storage and there are already files in it, the icon  will also

lighten. You can decide if you want to click  to delete these files.

- (5) Click  to add these files to the right side of the screen for burning or copy to the burning device or USB storage. If the device is CD-RW, the total size of the selected files should not exceed 600MB.
- (6) You can browse the other directories (dates) to continue the file selection.
- (7) If the backup device is burning device and the blank disc in the burning device can be detected, the Burn Disc icon  will lighten when you Add the “Selected files” to the right column of the screen for backup. Click this Burn Disc icon  and the system will start to convert the selected files into standard ISO 9660 format files (Make ISO), and burn the files to the disc.
- (8) If the backup device is USB storage and the device space is enough to back up the selected files, the Export Files icon  will lighten when you add the “Selected files” to the right column of the screen for backup. Click this icon  and the system will start to copy the files to the storage.
- (9) If problems arise while backing up the files, it might be due to the reasons indicated below:
  - The blank CD or DVD disk is in bad quality: Replace with a better quality disk.
  - The CD-RW or DVD+R/RW or DVD-R/RW has been used too many times: Replace with a new disk.
  - The burning device cannot process high-speed burning: Reduce the burning speed.
  - The blank disc does not support high-speed burning: Reduce the speed, or replace with high-speed compatible disk.
- (10) You can click Configure icon  to set up the “ Burn Disc, “ Export File” and “ Erase Disc/ Storage”.

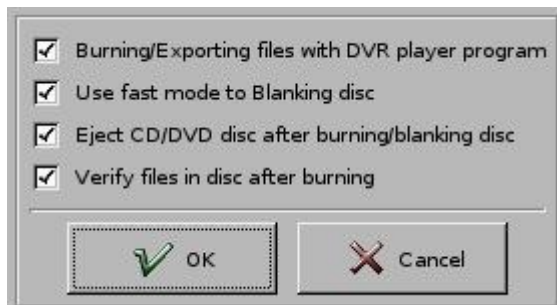
<b>!</b>	<b>Note</b> <ul style="list-style-type: none"><li>• Not support DVD+RW Disc</li><li>• Not support Transcend USB Pen drive.</li><li>• USB storage devices only support FAT16/FAT32 format.</li><li>• There may be compatible issue between USB external hard drive and system.</li></ul>
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## 4-8-4-2 Check the Backed Up Files

This DVR provides you with the function to check if the files are successfully burned to the disc.

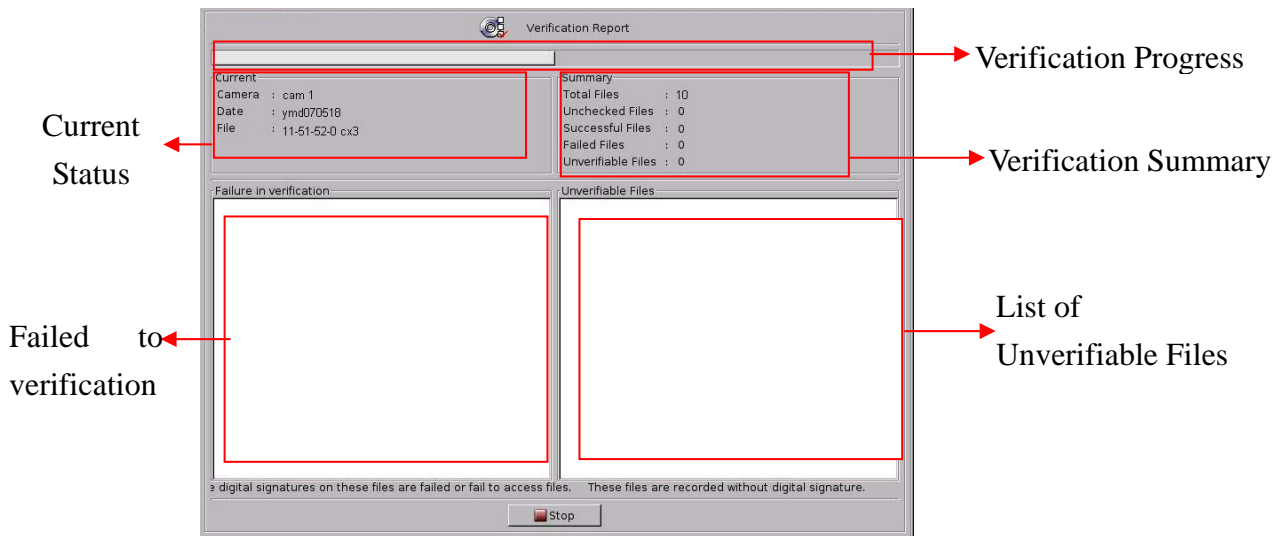
### (1) Automatic verification after files burning

- **Step #1** Click **Configure** icon  and it will pop up the menu as below.



- **Step #2** Click “**Verify files in disc after burning**” and enter “**OK**” button to save the burning configuration.
- **Step #3** Start to proceed with file burning. Please refer **Chapter 4-6-3-1 Backing Up Procedures**.
- **Step #4** Verification Report  
After files burning are complete, the DVR will automatically create a verification report as below.

# Linux-Embedded DVR



## ◆ Verification Summary:

**Total Files:** The numbers of files that should be verified.

**Unchecked Files:** The numbers of files that are not checked.

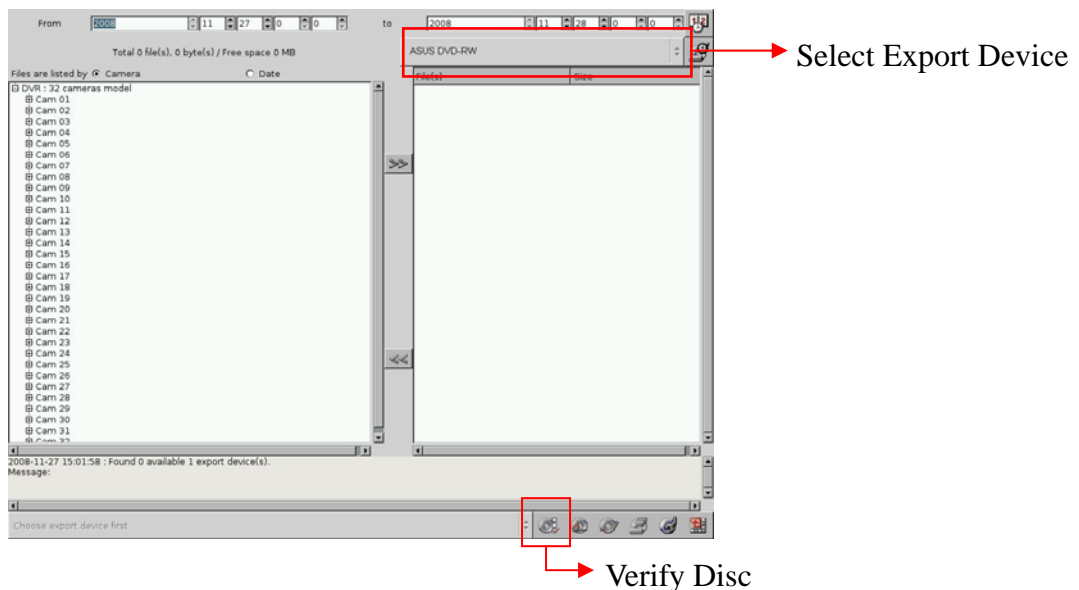
**Successful Files:** The numbers of files that are successfully checked.

**Failed Files:** The numbers of files that are failed to burn to the disc or failed to add digital signature.

**Unverifiable Files:** The numbers of unverifiable files. If you don't enable "Digital Signature" when recording, the recording files can't be verified

## (2) Manual verification after files burning

- Step #1 Select device as "CD-ROM/DVD-ROM".





# Linux-Embedded DVR

- **Step #2** Click the button of “**Verify Disc**”

If there are no CX3 files in the disc after files burning, DVR will prompt a message of the files failed to burn to the disc.

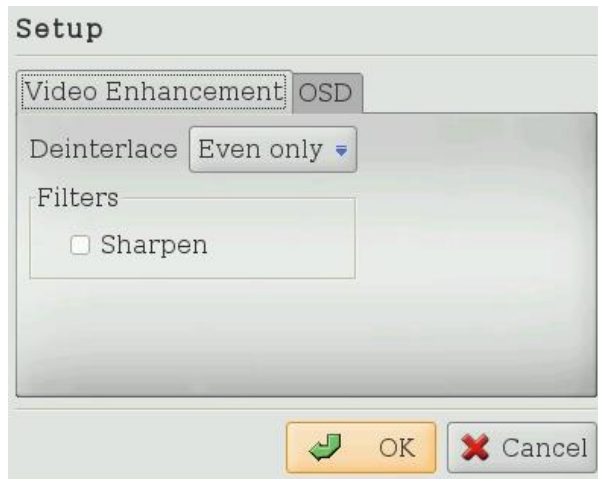


## **Note**

You should enable “ Digital Signature” in system configuration when recording. If you don’t enable “ Digital Signature”, the recording files can’t be verified and will be marked as “Unverifiable Files”.

## 4-8-5 Playback Setting

### (1) Video Enhancement




The Video Enhancement setting is provided you to adjust playback video quality. There are two kinds of modes- “**De-interlace**” and “**Sharpen**”. You can enable these two modes at the same time. In De-interlace mode, you can select “ **Even only**” or “**Weave.**” Each one has different enhancement on playback video quality. You can select the one you prefer to fit your quality requirement.

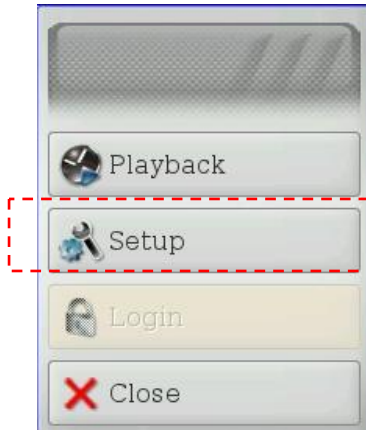
### (2) Playback OSD

The configuration of OSD is for setting what information will be shown on the playback video and where it will be shown. This DVR provides the function of overlaying the camera name, time, audio icon and POS message on the screen. If you want to overlay this information on the playback video, please select “ **Enable**”.

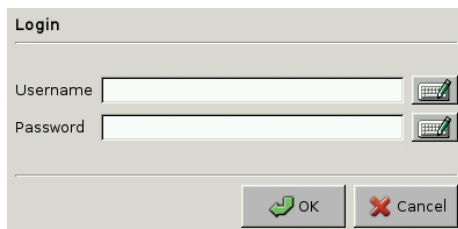


## 5. System Settings

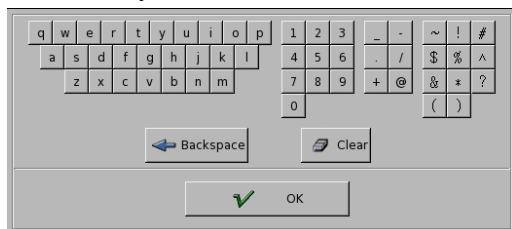
By clicking the icon of Access Menu  on the bottom right of Monitor screen, it will pop up the Access Menu as below.



Click “ Setup” tab and it will prompt you to enter username and password to login to the Setup Menu as below.

A screenshot of a 'Login' dialog box. It contains two input fields: 'Username' and 'Password'. Each field has a small keyboard icon to its right. At the bottom of the dialog, there are two buttons: 'OK' with a green checkmark icon and 'Cancel' with a red 'X' icon.

Click on the keyboard icon to enter the user name and password of “ Administrator”.

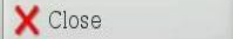


# Linux-Embedded DVR

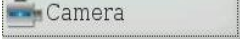
<b>!</b>	<b>Note</b> The preset user name and password of Administrator are as below, <ul style="list-style-type: none"><li>• Preset user name: admin</li><li>• Preset password: <b>1111</b></li></ul>
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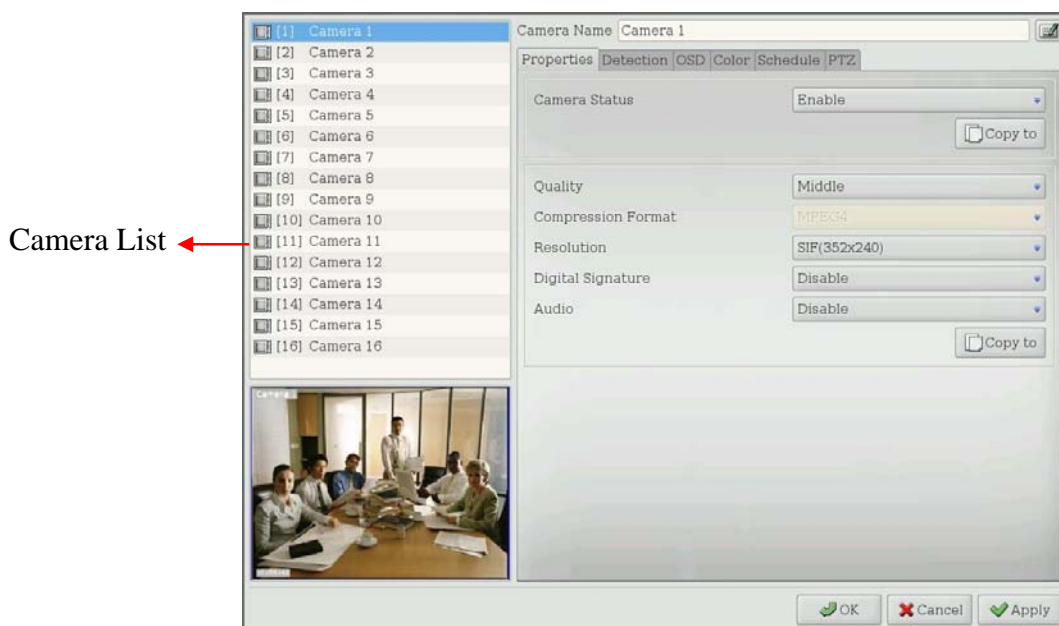
If you successfully log in to the Setup menu, following Setup Main Menu will pop up and you can start to go to each setup submenu to have DVR configurations.




To exit the Settings, click “Close” tab  on the bottom of Setup Main Menu to back to the Access Menu.


## 5-1 Camera Setup

When you click Camera tab  in the Setup Main menu, it will show Camera Setup submenu for your configuration.



### 5-1-1 Camera Properties

- (1) Select the desired camera for setup.
- (2) **Camera Name:** Use the “keyboard” legend  on the right of “Camera Name” field to enter camera alias name.
- (3) **Camera Status** (Disable/Enable/Hide): If the channel is not connected to a camera, set “Disable”. If it is connected, set “Enable”. If you don’t want the camera image to be showed on the main screen, set “Hide”.

You can click “Copy to” button  on the right of Camera Status to copy the camera status to other camera channels.

# Linux-Embedded DVR

<b>!</b>	<b>Note</b> If a camera is set as “hidden”, the video is still recorded in the hard disk.
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- (4) **Quality** (Poor/ Low/ Middle/ High/ Best): You can adjust the recording quality. The higher the quality setting, the more hard disk space will be consumed.
- (5) **Resolution**: You can adjust the recording resolution. There are several resolution modes for selection depending on the DVR model that you install. The higher the number, the better the quality. However, the higher quality setting will consume more hard disk space.
- (6) **Digital Signature** (Enable/Disable): The setting allows you to encrypt digital signature (watermark) to the video content.
- (7) **Audio** (Enable/Disable): **Beside the video**, this DVR system also supports audio input on video channel. The number of audio channel supported by your DVR system depends on the model you install from one channel to maximum 16 channels. If you want to have the audio recording on any channel, just enable the audio function.

<b>!</b>	<b>Note</b> <ul style="list-style-type: none"><li>• This version, only analog cameras support audio function.</li></ul>
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You can also click “Copy to” button to copy above four settings to other camera channels.

## 5-1-2\_Detection

Click “ Detection” Tab to go to configurations of camera motion and mask detection.



### (1) **Camera Motion Detection:** Set the Motion Sensitivity and Motion Detection Area

- **Sensitivity** (10/20/30/40/50/60/70/80/90/100): You can set the sensitivity of motion detection during recording. It is recommended to adjust the setting to 100 in order to prevent any data loss. However, in some special conditions, the system continues to record even when no motion has occurred. This will result in a considerable amount of useless data being recorded. In such a case, it is recommended to lower the sensitivity setting to avoid wasting hard disk.

- **Motion Detection Area:** This is used to set the motion detection area.

The default setting of “ Motion Detection Area” is “Set All”. You can have

Method #1 Under “Full Motion Detection Area”

- ◆ Select “ Clear” option in selection bar.
- ◆ Use mouse to drag an area that you don’t want to have motion detection. You can set multiple areas by dragging mouse again.

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## Method #2 Under “Non-Motion Detection Area”

- ◆ Select “ Set” option in selection bar.
- ◆ Use mouse to drag an area that you want to have motion detection. You can set multiple areas by dragging mouse again.



## Method#3 One Time Setting

You can also have one time setting by clicking  under “ Full Motion Detection Area” or clicking  under “Non-Motion Detection Area”.

<b>!</b>	<b>Note</b> <ul style="list-style-type: none"><li>• The motion detection area that you set will be marked in red color.</li><li>• In Setup preview window, the area marked in yellow color means DVR detects motion occurring.</li></ul>
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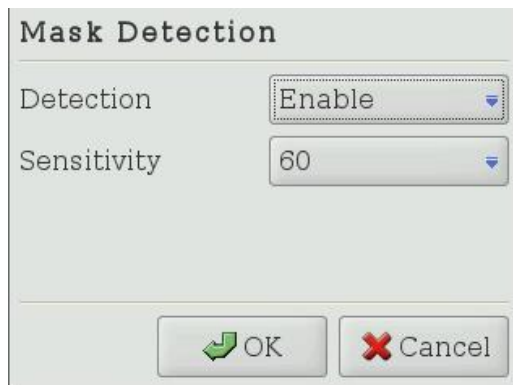
(2) **Camera Mask Detection:** When you click “Mask Setup” tab, it will show Mask Detection Setting menu for your setup. If you enable Camera Mask Detection function, it



# Linux-Embedded DVR

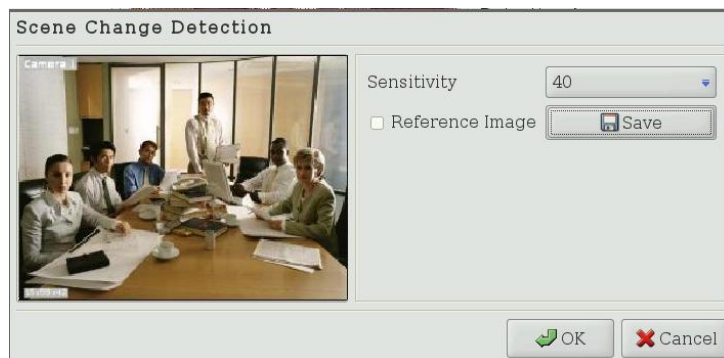
will show “Masking” warning message in the camera channel and will record it as a log when DVR detects camera that is masked.

- **Sensitivity** (10/20/30/40/50/60/70/80/90/100): You can set the sensitivity of camera mask detection from 10 to 100.



- (3) **Scene Change Detection:** When you click “Scene Setup” tab, it will show Scene Change Detection Setting menu for your setup. When you enable this function, DVR will show alarm message in the camera channel and will record it as a log when DVR detects camera that is turned direction.

- **Sensitivity** (10/20/30/40/50/60/70/80/90/100): Set the sensitivity of scene change detection from 10 to 100.



- **Set Reference Image:** When camera is installed well and the camera direction is fixed, click “Save” tab to set Reference Image. Tick “Show” option to show the reference image in preview window.

- (4) **Line Crossing Detection:** When you click “Line Crossing Setup” tab, it will show Line Crossing Detection Setting menu for your setup. When you enable this function, **Hybrid DVR System** will show alarm message in the camera channel and will record it as a log

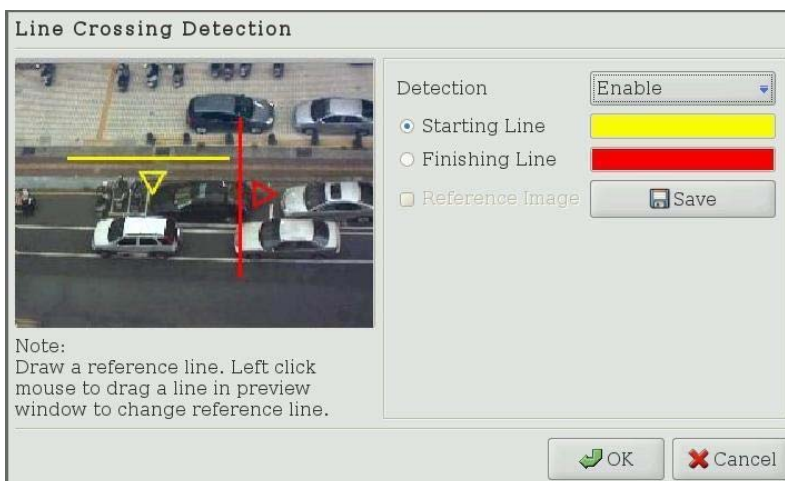
# Linux-Embedded DVR

when **Hybrid DVR System** detects motion crossing the lines you set here.

- Step 1: “Enable” the Crossing Line Detection.
- Step 2: Draw the Reference Lines: There are two Reference Lines. One is Starting Line with yellow color and the other one is Finishing Line with red color. The default two lines are parallel and vertical with the length of 140 pixels.



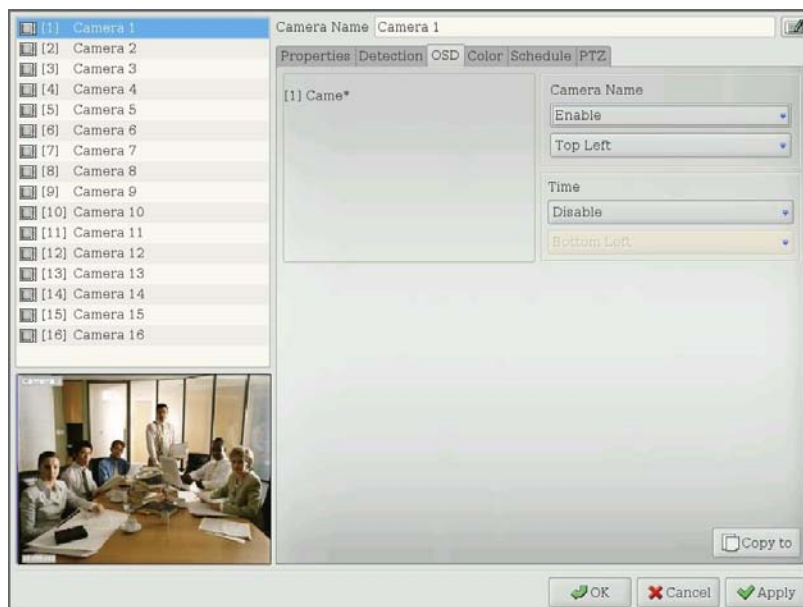
\*Set Starting Line: Tick the option of “Starting Line” and left click mouse to drag a line in preview window to change the length and direction of “Starting Line”. The min. length should be longer than 10 pixels.



\*Set Finishing Line: Tick the option of “Finishing Line” and left click mouse to drag a line in preview window to change the length and direction of “Finishing Line”. The min. length should be longer than 10 pixels.

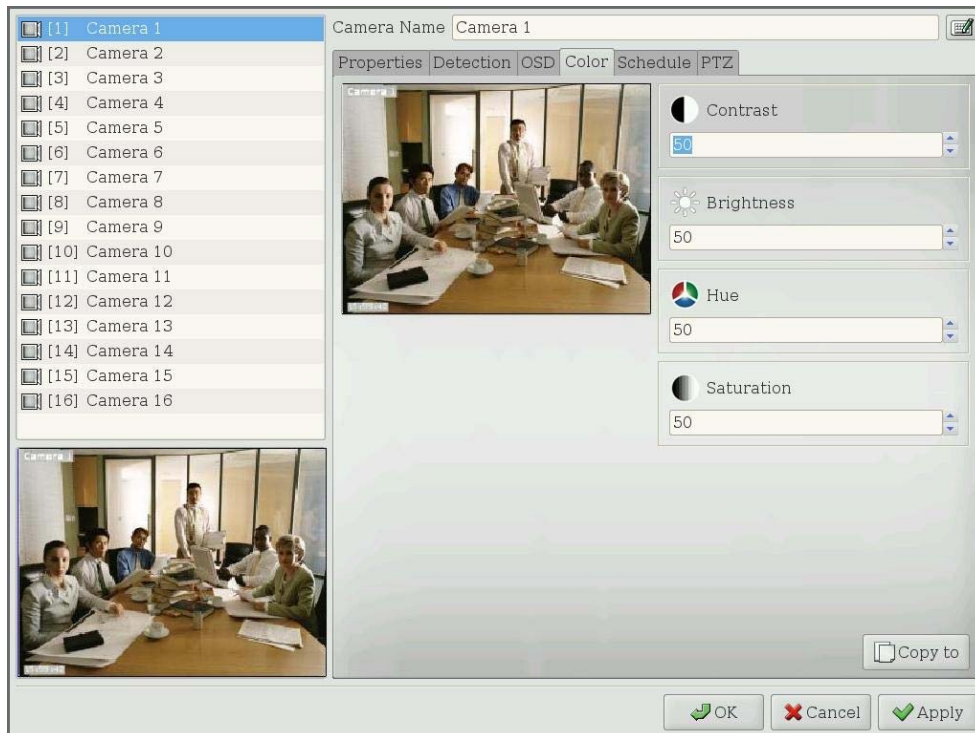
# Linux-Embedded DVR

## 5-1-3 OSD



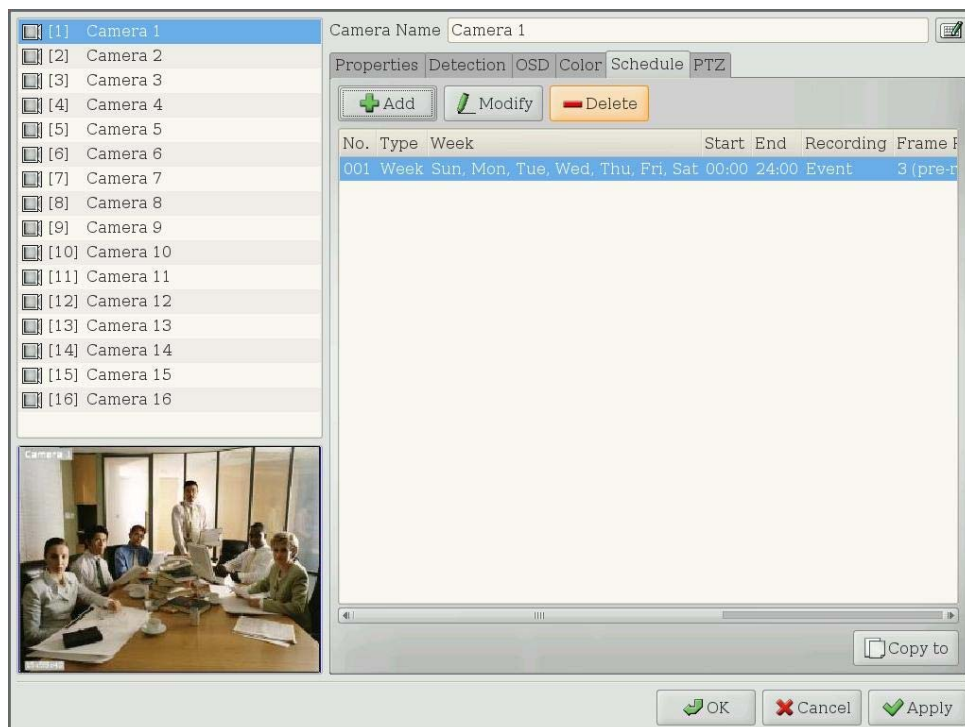
**OSD (On Screen Display) Position:** you can decide if showing Camera and Time OSD in monitor by selecting “Enable” or “Disable”. Once you decide to show the OSD, you also can select where the “time” or “camera name” are displayed in the monitor. There are four positions to choose from: Top Left, Top Right, Bottom Left and Bottom Right.

## 5-1-4 Camera Color






Here you can adjust Contrast/ Brightness/ Hue/ Saturation. **Color Adjustment** function is also provided in the monitor mode except that the Security of “ Monitor Color Setting” is enabled. (Please refer to the Chapter 5-8-2 “**Security**” setting).

## 5-1-5 Recording Schedule



The way of DVR recording is according to the recording schedule you set here. You can define individual camera recording rule and arrange recording schedule.

- **Add** : Add a new recording rule & schedule.
- **Modify** : Modify existing recording rule & schedule.
- **Delete** : Delete recording rule & schedule.

When you click “Add/Modify”, the dialog box below will appear to provide with Recording Schedule setting.

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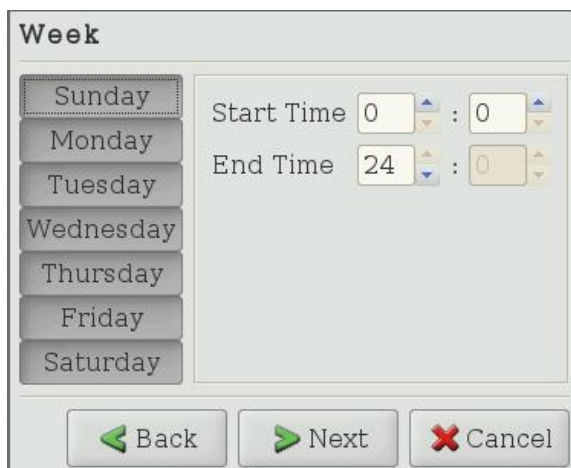
The image shows a dialog box titled "Recording Schedule". It contains two dropdown menus: "Schedule Type" set to "Week" and "Recording Mode" set to "Event". At the bottom, there are two buttons: "Next" with a green arrow icon and "Cancel" with a red X icon.

- **Schedule Type:** Week, Routine & Range
- **Recording Mode:** Event Recording & Full Recording

Select “Schedule Type” and “Recording Mode” and click “Next”.

## (1) Schedule Type-Week (Cycle Type):

If you select the Schedule Type as Week, DVR will repeat the recording type weekly.

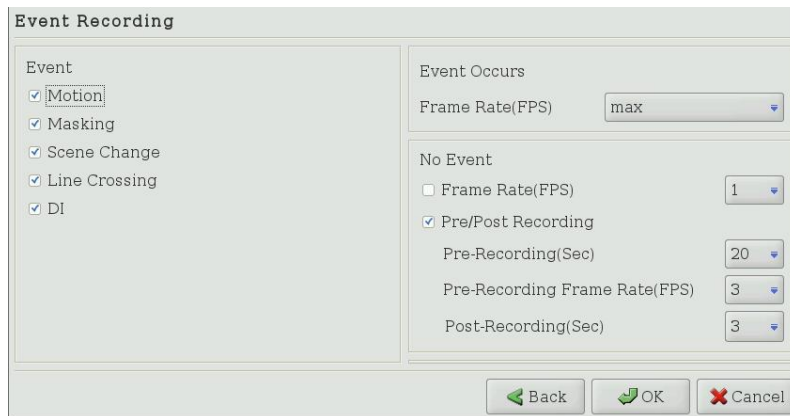


The image shows a dialog box titled "Week". On the left, there is a list of days from Sunday to Saturday. On the right, there are two time input fields: "Start Time" with values 0 and 0, and "End Time" with values 24 and 0. At the bottom, there are three buttons: "Back" with a green arrow pointing left, "Next" with a green arrow pointing right, and "Cancel" with a red X icon.

Select a day from Monday to Sunday and set recording “**Start Time**” and “**End Time**” and **click “Next”**.

If you select “Event Recording” in “Recording Mode” at previous step, it will pop up the Event Recording setting menu as below.

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- Events (Motion/DI): Set up the Motion or DI (Alarm) event to trigger DVR recording.
- Event Occur: Set up recording frame rate when event occurs.
- No Event: Set up recording frame rate when there is no event. There are two options for selection. One is “Recording by Low Frame Rate “ and the other one is “Pre/Post-Recording”. For the Pre-Recording setting (0~20 seconds) is to record a certain seconds before an alarm happens. And Post-Record setting (0~600 seconds) is to record a certain seconds after an alarm happens.

If you select “Full Recording” in “Recording Mode” at previous step, it will pop up the Full Recording setting menu as below.



You can set the recording frame rate of fully recording from 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 15, 20, 25 to max. The higher the number is, the higher frame rate it will be recorded. However, with higher frame rate, the hard disk space will be consumed faster.

## (2) Schedule Type-Routine:

If you select “ Routine” as recording type, you can set recording schedule by the unit of

# Linux-Embedded DVR

day and DVR will repeat the same recording type during the period you select.

**Routine**

Start Date: October 2010. Calendar shows dates from 26 to 6. Start Time: 0 : 0.

End Date: October 2010. Calendar shows dates from 26 to 6. End Time: 24 : 0.

Buttons: Back, Next, Cancel

- **Step 1:** Set the period you want to repeat the same recording type. Select the **Start Date** and **End Date**.
- **Step 2:** Set the “**Start Time** and **End Time**” of each day.
- **Step 3:** Click “**Next**” tab.
- **Step 4:** Follow the setting of “Full Recording” or “Event Recording” described in “Week” schedule type to finish the recording schedule setting.

### (3) Schedule Type-Range:

**Range**

Start Date: October 2010. Calendar shows dates from 26 to 6. Start Time: 0 : 0.

End Date: October 2010. Calendar shows dates from 26 to 6. End Time: 24 : 0.

Buttons: Back, Next, Cancel

If you select “Range” as recording type, DVR will repeat the same recording type during the period you set.

- **Step 1:** Set the period you want to repeat the same recording type. Select the **Start**



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## Date and End Date.

- **Step 2:** Set the “**Start Time**” of “**Start Date**” and **End Time** of “**End Date**”
- **Step 3:** Click “**Next**” tab.
- **Step 4:** Follow the setting of “Full Recording” or “Event Recording” described in “Week” schedule type to finish the recording schedule setting.

## (4) Comparison among “Week”, “Routine” and “Range” recording Type:

Below pictures compare the difference among three recording types by setting fully recording from 6:00 to 18:00, 2007-07-01 to 2007-07-05.

- **Week Type:**

Setting: Full recording from 6:00 to 18:00, Monday to Sunday.

Hour/Date	Sun	Mon	Tue	Wed	Thu	Fri	Sat
0							
6							
12							
18							
24							

- **Routine Type:**

Setting: Full recording from 6:00 to 18:00, 2007-07-01 to 2007-07-05

Hour/Date	07-01	07-02	07-03	07-04	07-05
0					
6					
12					
18					
24					

Setting: Full recording from 18:00 to 6:00, 2007-07-01 to 2007-07-05

Hour/Date	07-01	07-02	07-03	07-04	07-05
0					
6					
12					

# Linux-Embedded DVR

18					
24					

- **Range Type:**

Setting: Full recording from 6:00 to 18:00, 2007-07-01 to 2007-07-05

Hour/Date	07-01	07-02	07-03	07-04	07-05
0					
6					
12					
18					
24					

Setting: Full recording from 18:00 to 6:00, 2007-07-01 to 2007-07-05

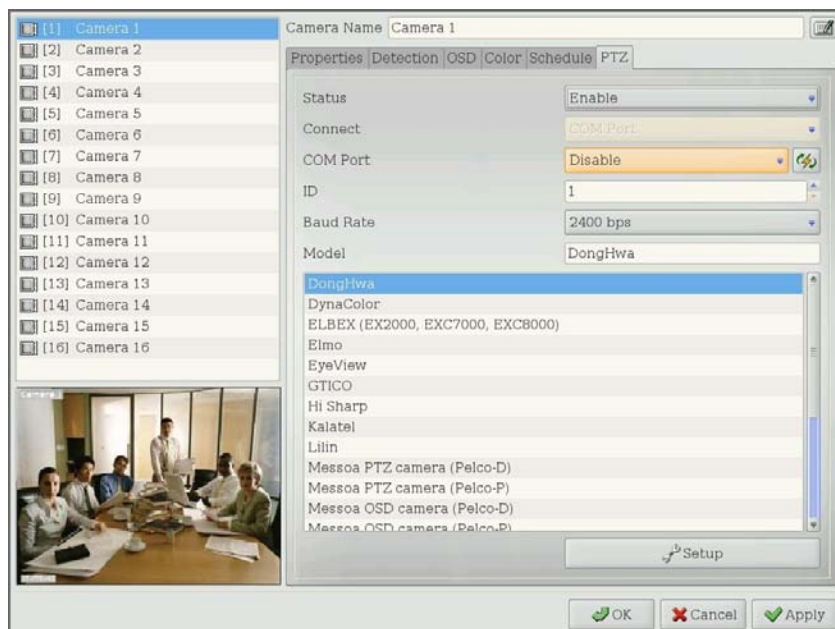
Hour/Date	07-01	07-02	07-03	07-04	07-05
0					
6					
12					
18					
24					

## (5) Priority of Schedule Type

Rule of Routine and Range schedule type will be prior to Week schedule type. That means if there is time overlapping between Week type and Routine type or Week type and Range type, the Rule of Routine type and Range type will overwrite the Rule of Week type in the overlapped time frame. However, Routine and Range type are with the same priority and can't overwrite each other. That means the new rule of Routine or Range type can't be successfully built up if the time frame of new rule overlaps the existing rule with Routine or Range type.

# Linux-Embedded DVR

## 5-1-6\_PTZ



To make the PTZ camera function correctly, please follow the instructions below:

### (1) Hardware Installation

For PTZ type, DVR supports analog PTZ (DVR) and IP PTZ camera (Hybrid DVR or NVR)

For PTZ connection, DVR supports two interfaces


- RS485 COM Port:
  - Step 1: Connect RS232-to-485 converter to the COM Port of DVR
  - Step 2: Connect the cable of PTZ to the RS485 converter.
- USB COM:
  - Step 1: Connect USB-to-RS232 converter to USB port of DVR.
  - Step 2: Connect RS232-to-RS485 converter to the connector of USB-to-RS232 converter.
  - Step 3: Connect the cable of PTZ to the RS485 converter.

### (2) Software Installation

According to PTZ Hardware device and connection type, please follow up the steps as below.

- Step 1: Select “Enable” in PTZ “Status” option.
- Step 2: If your DVR only supports analog PTZ cameras, please skip this step. If your DVR supports analog PTZ and IP-based PTZ, please select **COM port** for analog PTZ or **Ethernet for IP-based PTZ camera**.

# Linux-Embedded DVR

- Step 3: According to the interface between DVR and PTZ, select COM Port or USB COM.
- Step 4: Refer to the user manual of PTZ to set up PTZ control ID and Baud Rate.
- Step 5: Select PTZ Model in the PTZ list.
- Step 6: Click “ Setup” tab to have PTZ control configuration and it will pop up the PTZ Control panel as below.



### (3) PTZ Control Functions:


There are two parts of PTZ Control functions. One is Standard function applied to all PTZ models and the other one is Advance function that will be different between PTZ models.

- **Standard PTZ Functions**

 : Focus near

 : Focus far

 : Auto focus

 : Zoom in

 : Zoom out

 : PTZ moving direction

- **PTZ Advanced functions:**

Below three PTZ advanced functions are based on Lilin PTZ Camera.

- **Preset function:**



- Set preset ID, for example Preset Point 1.
- Click “**Go**” tab to turn the PTZ to default preset point.
- By using four PTZ Direction control panels, move the PTZ camera to the position that you want for Preset point 1
- Click “**Save**” tab to save the Position of Preset Point 1.
- You can click “**Reset**” tab to reset the Preset point that you set.
- Totally DVR supports 128 preset points.

- **Auto-Pan function:**



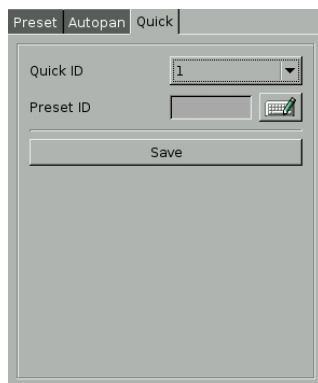
- Tick the Group options of Autopan.  
\*Group 1: Preset Point 1 to 4.

# Linux-Embedded DVR

- \*Group 2: Preset Point 5 to 8.
- \*Group 3: Preset Point 9 to 12.
- \*Group 4: Preset Point 13 to 16.

- B. Click “ Go” tab and PTZ will start to pan according to the Groups of Preset Points that you select.
- C. You can click “Stop” to end the auto-pan function.


## ■ Quick:



- A. Select Quick ID (1 to 16).
- B. Select Preset Point that will be applied to each Quick ID.

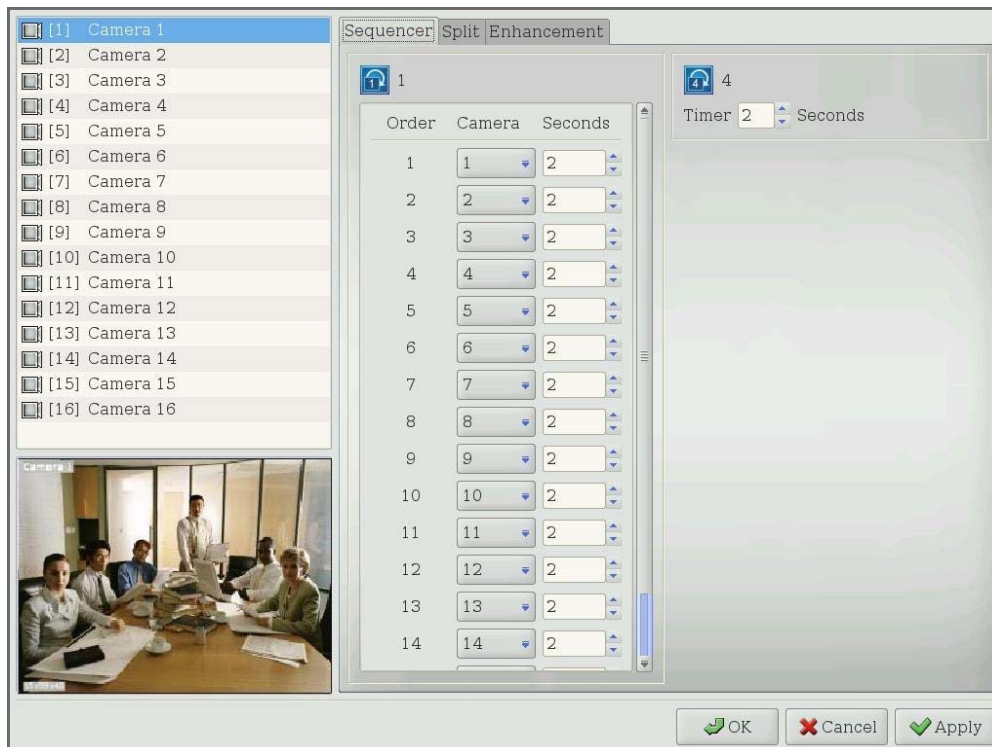
<b>!</b>	<b>Note</b> <ol style="list-style-type: none"><li>1. Preset and Auto-pan function is different from protocol to protocol.</li><li>2. The above example is given using Lilin protocol for example.</li><li>3. If user selects Eyeview PTZ model, please set Baud Rate as 2400 in DVR and physically set the PTZ protocol as Pelco D in Eyeview PTZ according to the Eyeview’s user manual. If it still can’t work, please contact your PTZ supplier to check the firmware in your PTZ is latest version.</li></ol>
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## 5-2 Display

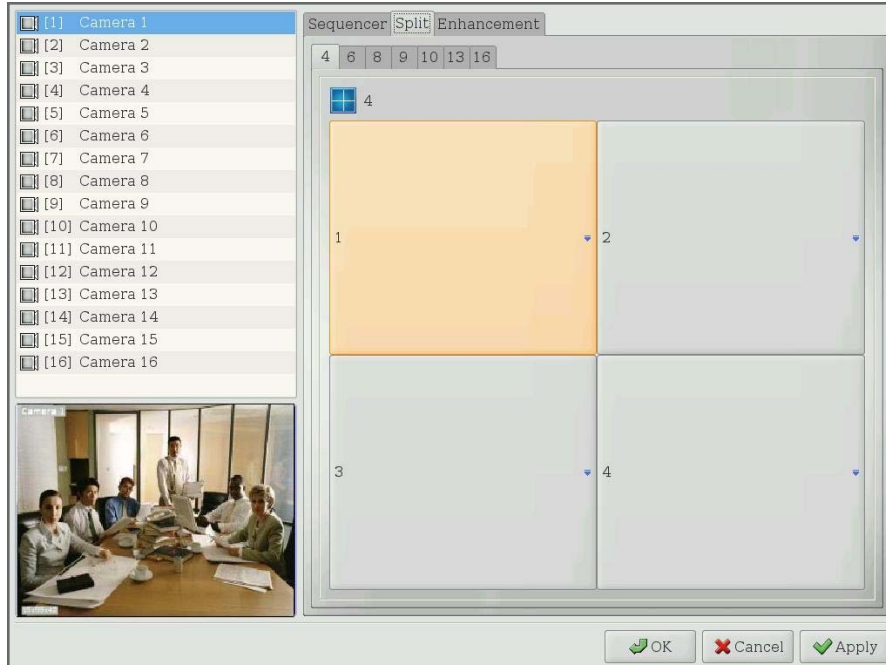
Click Display tab  Display on the Setup Main menu to enter the window of “Display” configuration.

### 5-2-1 Sequencer

This DVR supports 1-channel, 4-channel and 16-sequencer styles. For the 1-channel sequencer style, you can set up the desired sequencer order and duration (up to 300 seconds). For the 4-channel and 16-channel sequencer styles, the display formats are 4-split and 16-split separately. You can set up the sequencer duration up to 100 seconds.



## 5-2-2\_Split



This DVR provides two screen-split sets that depend on DVR monitor type. However, the max number of split styles in each split set depends on the DVR channel. These two split sets are as below.

- Split sets for monitor with 4:3 proportion: 4, 6, 8, 9, 10, 13, 16, 25, 36, 49 and 64 split style.
- Split sets for monitor with 16:9 proportion: 4, 6, 8, 9, 14, 17, 24, 36, 48 and 65 split style.

To show the best display performance, DVR will automatically detect the monitor connected to DVR (4:3 monitor or 16:9 monitor) and provide one of the split sets.

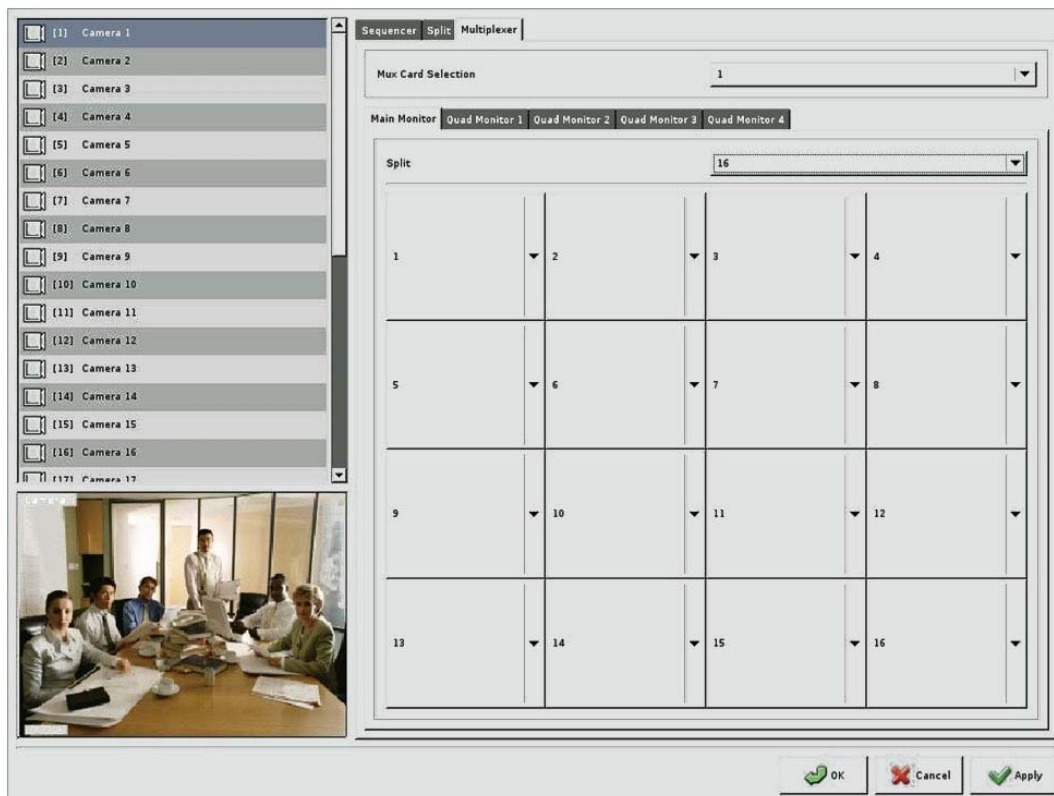
Step 1: Click any tab of split mode.

Step 2: Click the “small block” on the split screen, and then you can modify the camera shown on each split screen. An example for the description of the all cameras when doing the view setup is located on the right side of the table



## 5-2-3 Multiplexer (Optional)

This configuration menu will only exist when DVR system is equipped with Multi-Quad Card (MQ16). Multiplexer card can provide with the function of multiple analog BNC outputs with Main monitor and Quad monitor outputs.



- **Mux Card Selection:** Select the Quad card installed in the DVR.
- **Main Monitor:** You can set split style for Main monitor and assign the channel to each split screen. Main Monitor supports 1, 4, 6, 8, 9, 10, 13 and 16-split style for selection.
- **Quad Monitor:** There are 1, 4 split display and 4 split sequencer for each Quad monitor and you can assign the channels to display in each Quad monitor. The max number of Quad monitors supported by each Quad card is 4 monitors.  
If you select 4 split sequencer in Quad monitor, you should further set the sequencer duration in the field of "Timer".

# Linux-Embedded DVR

Sequencer | Split | Multiplexer

Mux Card Selection

Main Monitor | Quad Monitor 1 | Quad Monitor 2 | Quad Monitor 3 | Quad Monitor 4

Split

Timer  Seconds

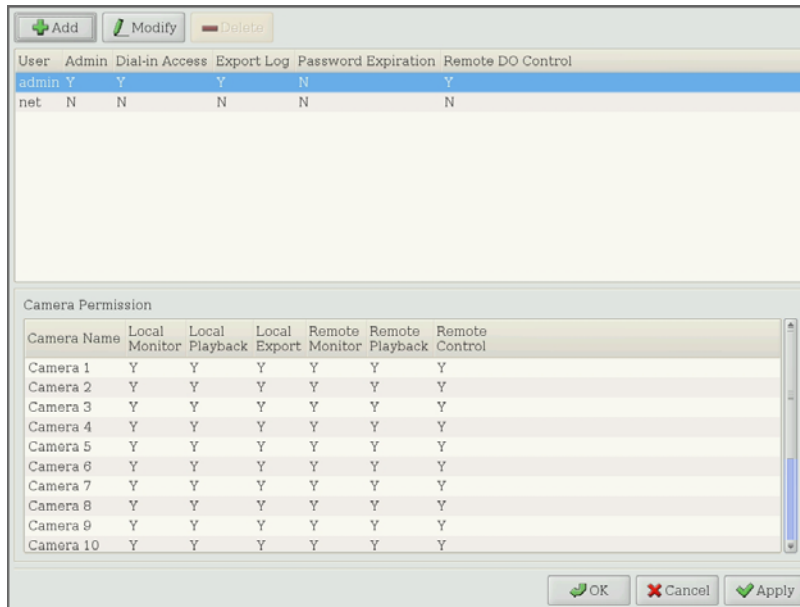
!

## Note

- Only analog camera can be displayed in these monitors.

## 5-3 User Account Management

**User Account Management** function allows the administrator to create users, assign the authorized actions to secure the system. This DVR supports 128 user accounts. To start using this function, click on the **User** tab on Setup Main Menu.



This DVR provides two system preset accounts. The user names and passwords for these two accounts are as below.

- User name: “**admin**”; Password: “**1111**” is for the system management account. This account cannot be deleted.
- User name: “**net**”; Password: “**1111**” is for the normal user account. This account can be deleted.

### (1) Add User Account

Click “Add” icon to add new user accounts as the screen below.

# Linux-Embedded DVR

**User**

Username

Password

Confirm

User Account: Normal

Dial-in Access: Disable

Export Log: Disable

Password Expiration: Disable

Remote DO Control: Disable

Camera Permission: Setup

- Enter the name and password for the new user. Enter the password again for the confirmation.
- Select Administrator or Normal User Account. Only administrator account can enter the system setup menu to change the settings.
- Dial-in Access (Enable/Disable): This option is to enable/disable the user to dial into the DVR, i.e., to access the system through modem.
- Export Log (Enable/Disable): The permission for exporting SYSTEM Log.
- Password Expiration: This is the notification of password expiration. The time setup range can be 1~365 days. When the password expires, the following dialogue will appear:

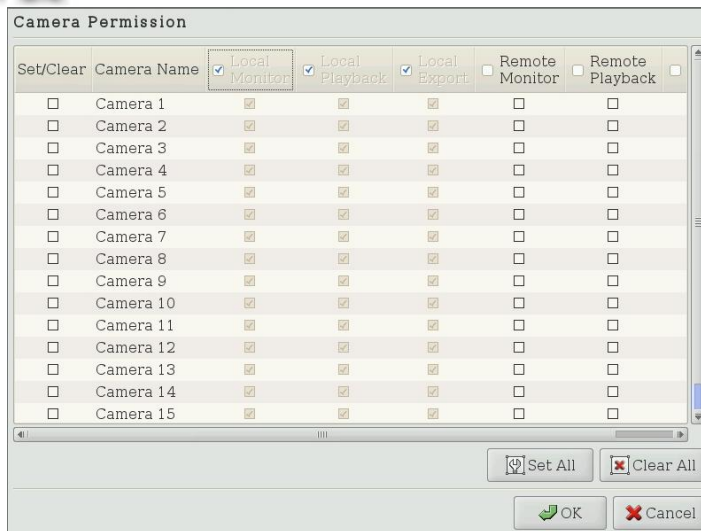
Your password was expired on 2006-02-13 12:00:00  
Please change it.

Password

Confirm

- Remote DO Control: This function enables remote application, ex CMS, to toggle DVR DO device.
- Camera Permission: Click “Setup” tab to set camera user permission as below.

# Linux-Embedded DVR



For each user account, you can enable the authority of “ Local monitor”, “Local Playback”, “Local Export”, “Remote Monitor”, “Remote Playback” or “ Remote Control” for each channel. You also can click “ Set all” tab to enable all of the functions for each channel or “ Clear all” tab to delete all of the function that be selected.

<b>!</b>	<p><b>Note</b></p> <ul style="list-style-type: none"><li>• You can define different levels of user permission on Monitor and Playback authority. Please refer to <b>Chapter 5-8-2 Security</b> to enable “ Playback” and “ Monitor” authorization in advance.</li><li>• The preset user of “admin” can’t be deleted.</li></ul>
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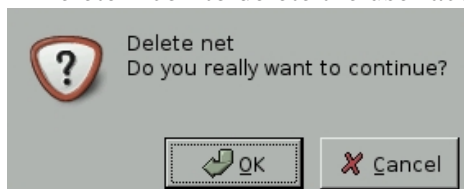
## (2) Modify User Account

Click “Modify” tab to modify the existing user account.

The operation is similar to that of the “Add User Account” above.


## (3) Delete User Account

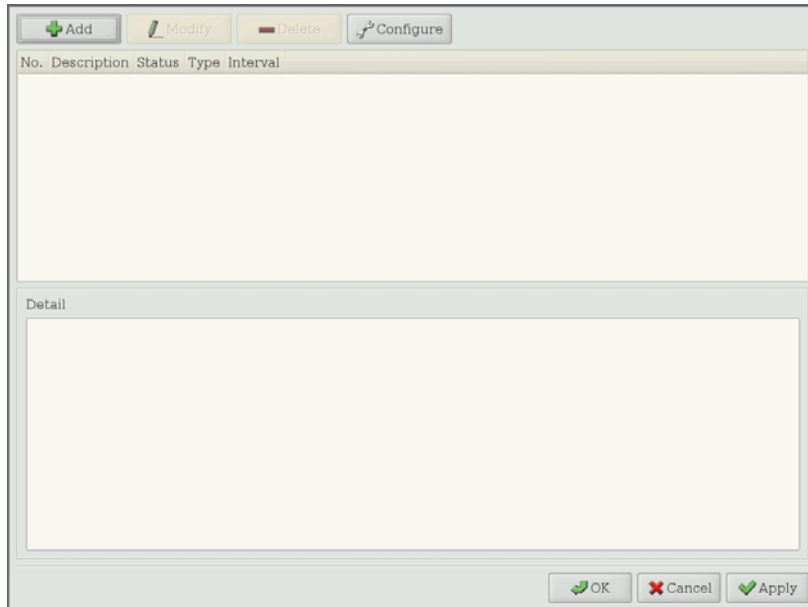
Click “Delete” icon to delete the user account. A screen will display as follows.




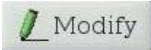

Click “OK” if you would like to delete this user account.

## 5-4 Alarm

Click **Alarm** tab  on the Setup Main menu to enter the window of Alarm configuration.



### 5-4-1 Add/Modify/Delete Alarm Rule

Click “**Add**” tab  to start to build up Rule of Alarm Trigger and all of the Rules will be listed in the Rule Window. Select any Rule in Rule window and Click “**Modify**” tab  to modify Rule or click “**Delete**” tab  delete Alarm rule.

# Linux-Embedded DVR

**Rule**

No	1
Name	rule 1
Status	Enable
Type	All Events -> E-Mail
Interval	60

Next Cancel

- (1) **Rule number:** It will be automatically assigned by DVR according to the orders of Rule that are set up.
- (2) **Rule Name:** Give an alias name for Alarm Rule.
- (3) **Status:** Enable or Disable **Alarm Rule**.
- (4) **Alarm Type:** Select **Alarm Type**

This DVR supports multiple alarm types as below.

#### (4-1) All Events →E-Mail

When DVR detects events, it can send E-Mail with alarm message and three continuous event pictures to three E-Mail addresses that you set up. The DVR events include System Error, System Warning, Camera Motion, Camera Video Loss and DI (Alarm Input). Please refer to Chapter 4 Playback to see the definition of Events.

**All Events -> E-Mail**


Camera Events	
Motion	Setup
V-Loss	Setup
Masking	Setup
Scene Change	Setup
Line Crossing	Setup
Other Events	
System Error	Disable
System Warning	Disable
DI	Setup

E-Mail

To			
1		Test	
2		Test	
3		Test	

Back Ok Cancel

# Linux-Embedded DVR

- **Step 1:** Select Event Type to trigger DVR sending E-Mail. For the events of System Error and System Warning, you just need to Enable or Disable this function. For Camera Motion, Camera Video-Loss and DI, you need to click “Setup” tab  to select cameras or DI Devices as below menu.

- **Step 2:** Set E-Mail address to receive alarm message and event pictures. You can set three email addresses to be notified for a single alarm. After setting, you can click “Test” tab and it will pop up the window of E-Mail testing result as below.



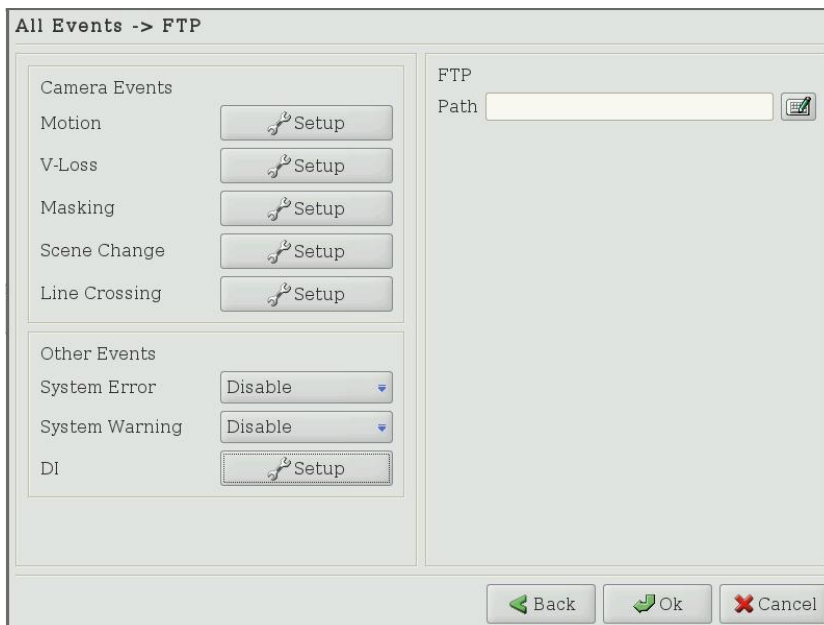
- **Step 3:** Click “OK” tab when you have done the setting.
- **Step 4:** Besides the setting in this menu, you should have further configurations of E-Mail server to let this function work. . Please refer to Chapter 5-4-2 about setting E-Mail of server.

<b>!</b>	<b>Note</b> (1) Make sure the DVR system connects to Internet.
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## (4-2) All Events →FTP

When DVR detects events, it will send alarm message and three alarm pictures to the FTP server according to your settings. The DVR events include System Error, System Warning, Camera Motion, Camera Video Loss and DI (Alarm Input). Please refer to Chapter 4-2 Search Recorded Data by Event to see the definition of Events.



- **Step 1:** Select Event Type to trigger DVR sending alarm message and three alarm pictures to the FTP server. Please refer to the description of “All Events->E-Mail” settings.
- **Step 2:** Enter the IP address of FTP site.
- **Step 3:** Click “OK” tab when you have done the setting.
- **Step 4:** Besides the setting in this menu, you should have further configurations of FTP server to let this function work. . Please refer to Chapter 5-4-2 about setting of FTP server.

## (4-3) All Events →SMS

When DVR detects events, it will send SMS alarm message to mobile phones according to your settings. You can enter three mobile phone numbers to be notified for a single alarm. The DVR events include System Error, System Warning, Camera Motion, Camera Video Loss and DI (Alarm Input). Please refer to Chapter 4 Playback

# Linux-Embedded DVR

to see the definition of Events.

This function requires an external GSM modem to send messages to mobile phones via SMS (Short Message Service). Please refer to your GSM modem user manual for the physical connections.

All Events -> SMS

Camera Events

Motion Setup

V-Loss Setup

Masking Setup

Scene Change Setup

Line Crossing Setup

Other Events

System Error Disable

System Warning Disable

DI Setup

SMS

To

1

2

3

Subject

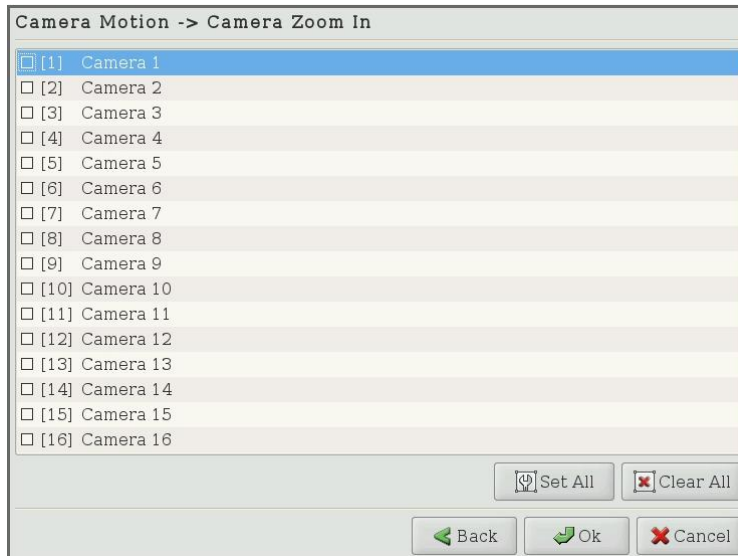
Back Ok Cancel

- **Step 1:** Select Event Type to trigger DVR sending SMS alarm message to mobile phone. Please refer to the description of “All Events->E-Mail” settings.
- **Step 2:** Enter the numbers of mobile phones to receive SMS message.
- **Step 3:** Enter the **Subject** of the alarm message (for example, DVR Alarm)
- **Step 4:** Click “OK” tab when you have done the setting.
- **Step 5:** Besides the setting in this menu, you should have further configurations of GSM Modem to let this function work. . Please refer to Chapter 5-4-2 about setting of GSM Modem.

## (4-4) Camera Motion →Camera Zoom-in

When DVR detects motion of selected cameras, it will pop up the motion picture to the Zoom-in Window. Please refer to Chapter 3-1-3 Event to Zoom.

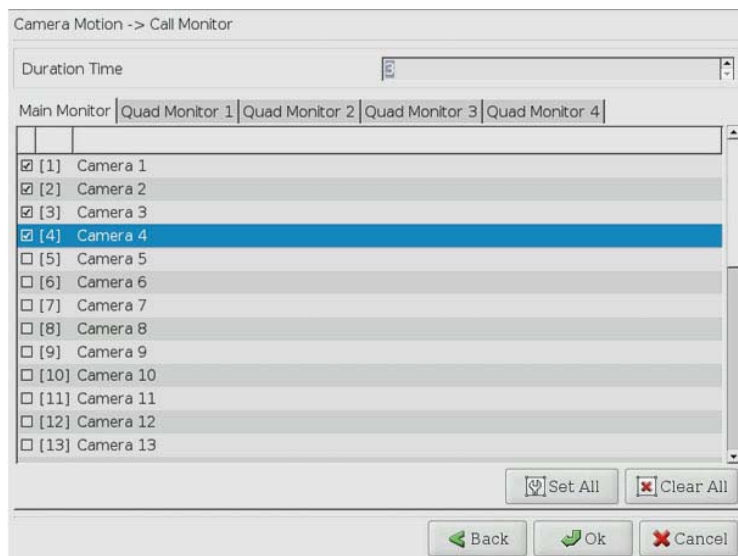
# Linux-Embedded DVR



- **Step 1:** Select the camera that will trigger motion to zoom function. You can tick the square icon in front of each camera or click “Set All” tab or “Clear All” tab.
- **Step 2:** Click “OK” tab when you have done the setting.

## (4-5) Camera Motion → Call Monitor

This function is only provided when DVR is equipped with Multiplexer Quad card. Please refer to “Chapter 5-2-3 Multiplexer”. When DVR detects motion of selected cameras, it will pop up the motion picture to full screen in Main monitor or Quad monitors.



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- **Step 1 Duration Time:** Set the duration that motion picture stays in the Main monitor or Quad monitors.
- **Step 2:** Click any Monitor tab (Main Monitor or 1th~4th Quad Monitors).
- **Step 3:** Select the camera that will trigger call monitor function in Main monitor and Quad monitors. You can tick the square icon in front of each camera or click “Set All” tab or “Clear All” tab.
- **Step 4:** Click “OK” tab when you have done the setting.

## (4-6) DI (Alarm Input) →DO (Alarm Output)

When selected DI is triggered, selected DO can be triggered and start to send control signal to the external device (e.g., alarm) within the DO duration. The “DI/DO array” below the setting allow you to relate the DO devices corresponding to each DI.

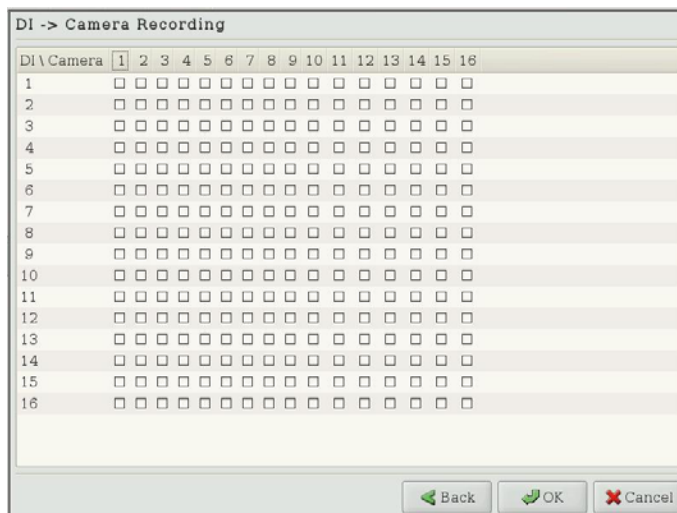
DI\DO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- **Step 1:** Select the DI (Alarm Input) device that will trigger DO (Alarm output) device. Each row in the DI->DO Menu represents one DI (Alarm Input) device and each column shows one DO device. Click any row in the menu to select DI (Alarm Input) device and tick the square icons in each column to select the DO (Alarm Output) devices to be triggered.
- **Step 2:** Click “OK” tab when you have done the setting.
- **Step 3:** Besides the setting in this menu, you should have further configurations of

DI (Alarm Input) device to let this function work. . Please refer to Chapter 5-4-2 about setting of DI (Alarm Input) device.

## (4-7) DI →Camera Recording

When DI is triggered, DVR can start to record the video of selected cameras. You can select the cameras to be recorded when DI is triggered. Each DI signal can trigger more than one camera recording.

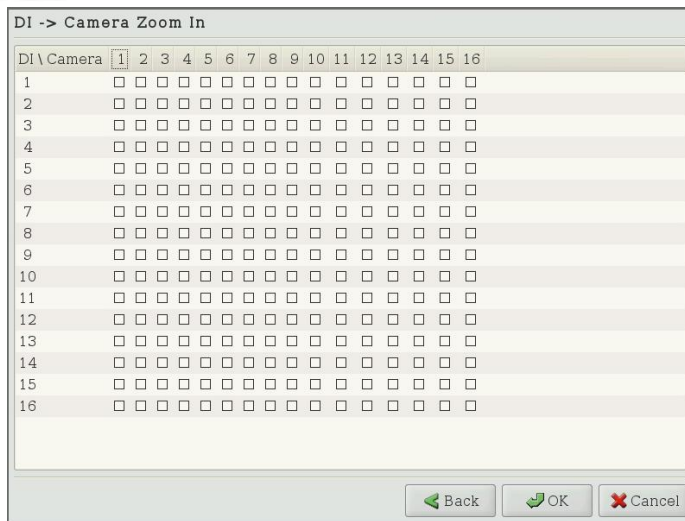


- **Step 1:** Select the cameras to be recorded when DI (Alarm Input) device is triggered. Each row in the “DI->Camera Recording” menu represents one DI (Alarm Input) device and each column represents one camera. Click any row in the menu to select DI (Alarm Input) device and tick the square icons in each column to select the cameras.
- **Step 2:** Click “OK” tab when you have done the setting.
- **Step 3:** Besides the setting in this menu, you should have further configurations of DI (Alarm Input) device to let this function work. . Please refer to Chapter 5-4-2 about setting of DI (Alarm Input) device.

## (4-8) DI (Alarm Input) →Camera Zoom-in

When selected DI is triggered, the image of selected camera will be zoomed in the “Zoom-in Window” (refer to Chapter 3-1-3 Event to Zoom).

# Linux-Embedded DVR

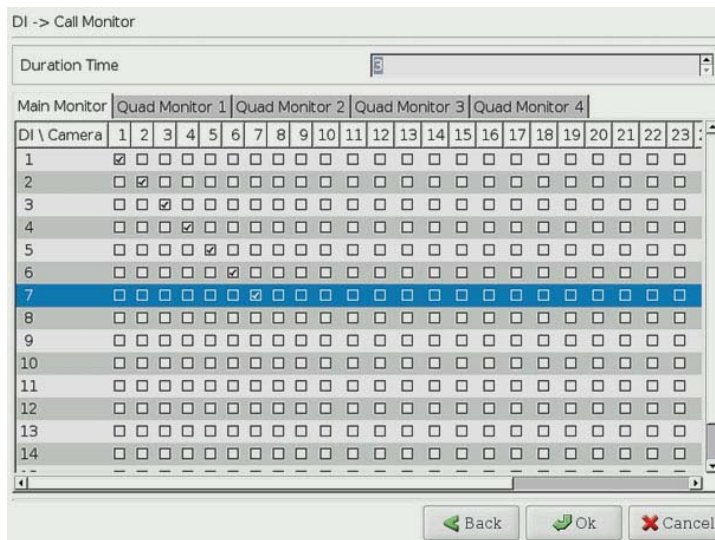


- **Step 1:** Select the DI (Alarm Input) device that will trigger camera for zooming. Each row in the “DI->Camera Zoom-in” menu represents one DI (Alarm Input) device and each column shows one camera. Click any row in the menu to select DI (Alarm Input) device and tick the square icons in each column to select the cameras to be zoomed in.
- **Step 2:** Click “OK” tab when you have done the setting.
- **Step 3:** Besides the setting in this menu, you should have further configurations of DI (Alarm Input) device to let this function work. . Please refer to Chapter 5-4-2 about setting of DI (Alarm Input) device.

## (4-9) DI →Call Monitor

This function is only provided when DVR is equipped with Multiplexer Quad card. Please refer to “Chapter 5-2-3 Multiplexer”. When selected DI is triggered, the image of selected cameras will be popped up to full screen in Main monitor or Quad monitors.

# Linux-Embedded DVR



- **Step 1 Duration Time:** Set the duration that event picture stays in the Main or Quad monitors.
- **Step 2:** Click any Monitor tab (Main Monitor or 1th~4th Quad Monitors).
- **Step 3:** Select the DI (Alarm Input) device that will trigger camera with Call monitor function. Each row in the “DI->Call Monitor” menu represents one DI (Alarm Input) device and each column shows one camera. Click any row in the menu to select DI (Alarm Input) device and tick the square icons in each column to select the cameras to be popped up in Main monitor or Quad monitors.
- **Step 4:** Click “OK” tab when you have done the setting.
- **Step 5:** Besides the setting in this menu, you should have further configurations of DI (Alarm Input) device to let this function work. . Please refer to Chapter 5-4-2 about setting of DI (Alarm Input) device

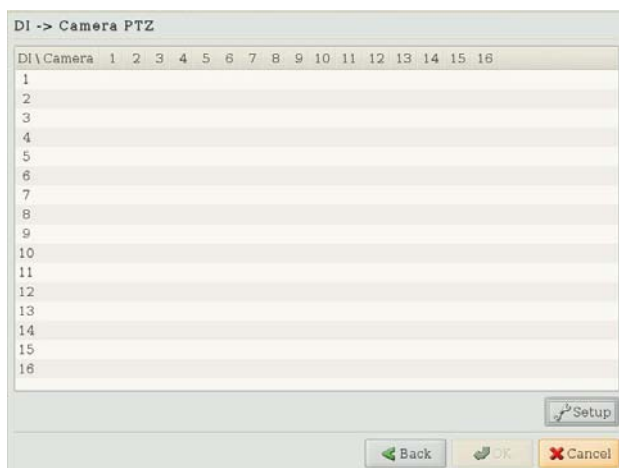
!	<p><b>Note</b></p> <ol style="list-style-type: none"> <li>1. When many events occur at the same time, the Main/Quad monitors will pop up a camera’s image in full screen. The popping camera is chosen by the number of the camera, for example camera 1 be selected firstly, then camera 2 and etc.</li> <li>2. In the same condition, if the camera 1 has been popped up last time, the next time popping camera’s image can’t be the image of camera 1.</li> </ol>
---	---

## (4-10) DI →PTZ Preset Point

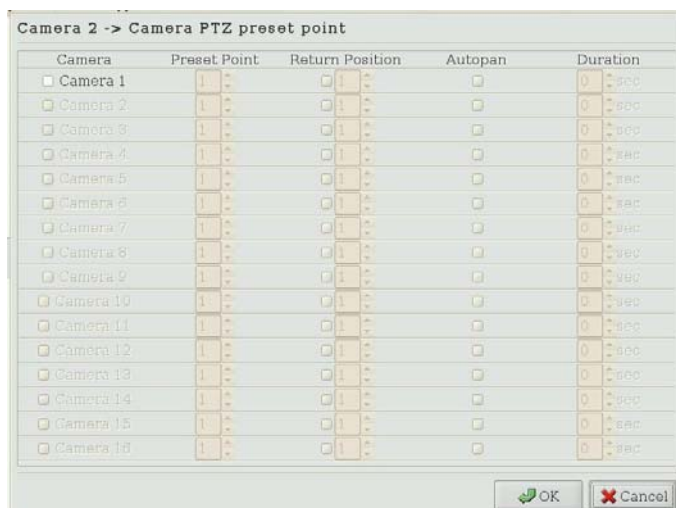
# Linux-Embedded DVR

When selected DI is triggered, selected PTZ cameras will be moved to predefined Point.

- **Step 1:** Select the DI (Alarm Input) device that will trigger camera with PTZ Preset function. Each row in the “DI->Camera PTZ” menu represents one DI (Alarm Input) device and each column shows one camera. Click any row in the menu to select DI (Alarm Input) device



- **Step 2:** Click the “ Setup” tab in bottom-right of the menu and it will show the menu as below.



- **Step 3:** The PTZ Cameras with Preset Point function will be visible for selection. Before you have this setting, you should enable and set up the PTZ cameras in “Camera” setup menu according to the actual camera installation. Please refer to Chapter 5-1-6 PTZ Setting. “Tick” the number of PTZ camera and have the following setting.



# Linux-Embedded DVR

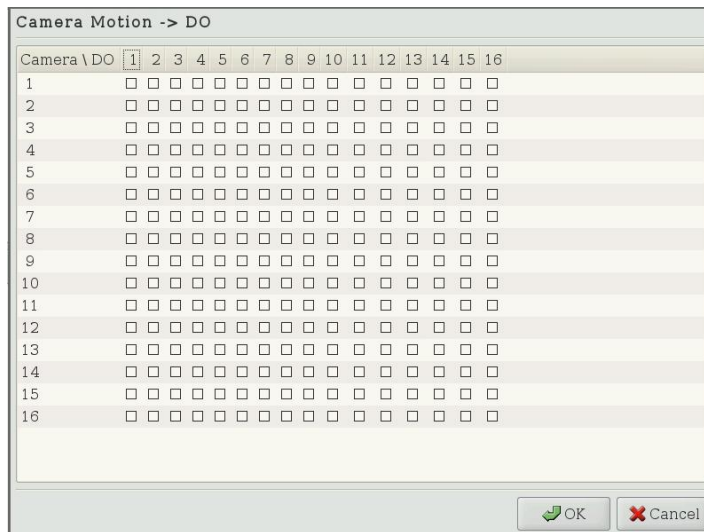
- **Preset Point:** Select the predefined Point that PTZ camera will move to when DI alarm is triggered. The range of supported Preset Point will depend on PTZ model.
- **Duration:** Setting the time of DI triggering. The range is from 0 to 60 seconds.
- **Return Position:** When the DI triggering time is over, PTZ camera will be back to the position set in this option.
- **Auto-pan:** When the DI triggering time is over, PTZ camera will automatically pan.

<b>!</b>	<p><b>Note</b></p> <ul style="list-style-type: none"><li>● This function only works when PTZ Camera with Preset point function.</li><li>● Before setting this function, PTZ camera should be enabled and correctly set in the Camera setting menu.</li><li>● For each PTZ camera, only “Return Position” or “Auto-pan” can be selected at a time or both functions are not selected. If neither of these two functions is selected, PTZ camera will stay at the predefined point after DI alarm is over.</li></ul>
----------	--

## (4-11) Cam Motion →DO

When selected camera detects motion, selected DO can be triggered and start to send control signal to the external device (e.g., alarm) within the DO duration. The “Camera/DO array” below the setting allow you to relate the DO devices corresponding to each camera.

# Linux-Embedded DVR

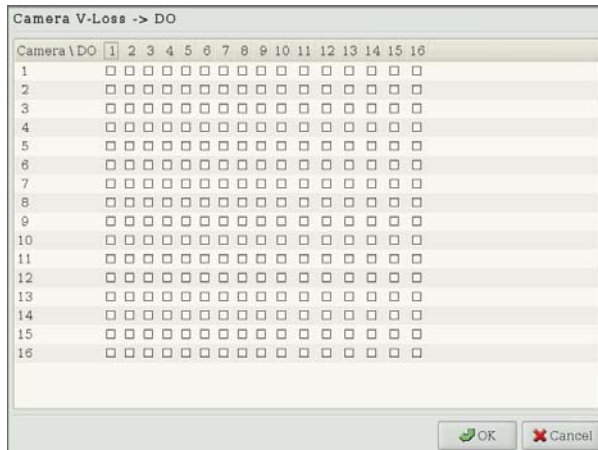


- **Step 1:** Select the cameras with motion to trigger DO (Alarm output) device. Each row in the Camera Motion->DO Menu represents one camera and each column shows one DO device. Click any row in the menu to select camera and tick the square icons in each column to select the DO (Alarm Output) devices to be triggered.
- **Step 2:** Click “OK” tab when you have done the setting.
- **Step 3:** Besides the setting in this menu, you should have further configurations of DO (Alarm Output) device to let this function work. . Please refer to Chapter 5-4-2 about setting of DO (Alarm Input) device.

## (4-12) Cam V-Loss →DO

When selected cameras lose the video signal, selected DO can be triggered and start to send control signal to the external device (e.g., alarm) within the DO duration. The “Camera/DO array” below the setting allow you to relate the DO devices corresponding to each camera.

# Linux-Embedded DVR

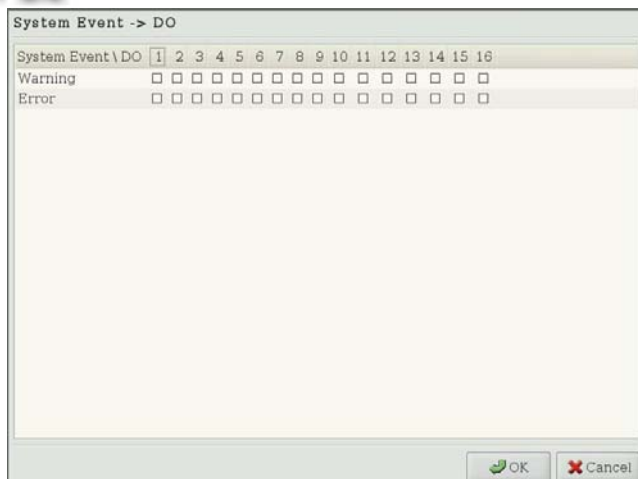


- **Step 1:** Select the cameras with video loss to trigger DO (Alarm output) device. Each row in the Camera Video Loss->DO Menu represents one camera and each column shows one DO device. Click any row in the menu to select camera and tick the square icons in each column to select the DO (Alarm Output) devices to be triggered.
- **Step 2:** Click “OK” tab when you have done the setting.
- **Step 3:** Besides the setting in this menu, you should have further configurations of DO (Alarm Output) device to let this function work. . Please refer to Chapter 5-4-2 about setting of DO (Alarm Input) device.

## (4-13) System Event →DO (Alarm Output)

There are two types of system events to trigger DO device including “**System Warning**” and “**System Error**”. Please refer to Chapter 4 Playback to see the definition of System Events. When system event occurs, selected DO will be triggered and start to send control signal to the external device (e.g., alarm) within the DO duration. The “Event/DO array” below the setting allow you to relate the DO devices corresponding to each system event.

# Linux-Embedded DVR

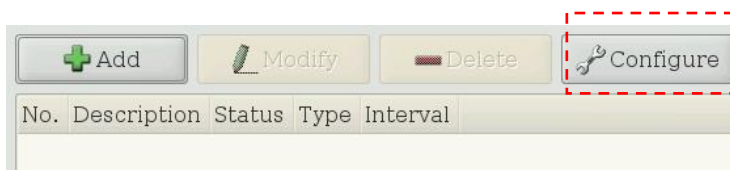


- **Step 1:** Select the types of System Events to trigger DO (Alarm output) device. Each row in the System Event->DO Menu represents one System event type and each column shows one DO device. Click any row in the menu to select System event type and tick the square icons in each column to select the DO (Alarm Output) devices to be triggered.
- **Step 2:** Click “OK” tab when you have done the setting.
- **Step 3:** Besides the setting in this menu, you should have further configurations of DO (Alarm Output) device to let this function work. . Please refer to Chapter 5-4-2 about setting of DO (Alarm Input) device.

(5) **Interval:** Set alarm notice interval and click “ Next” tab to have detail configurations. The interval can be set from 1 second to 86400 seconds (1 day).

## 5-4-2 Alarm Device Configuration

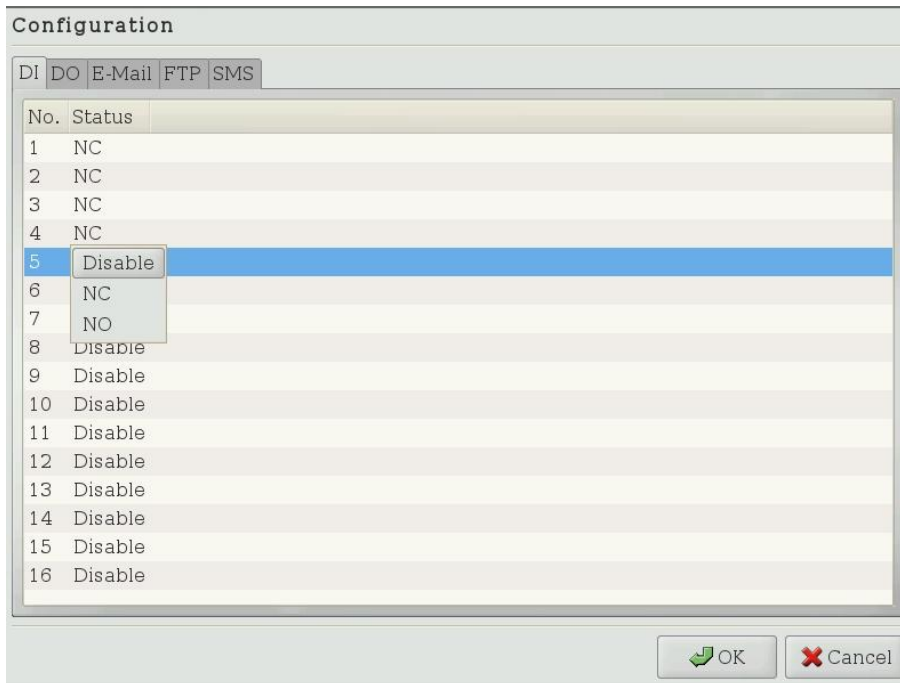
Besides the setting in Chapter 5-4-1 for each Alarm Rule, you should have further configurations for the alarm devices including DI (Alarm Input), DO (Alarm Output), E-Mail server, FTP sever and GSM Modem for SMS. Click “ Configure” tab to enter the configuration of alarm device.



### (1) Configuration of DI (Alarm Input) device

# Linux-Embedded DVR

Click the tab of “DI” and it will show the menu of “DI” configuration. Each row represents DI device. Click the “Status” column in any row and it will pop up the three Status types for your selection.



## [DI Status]

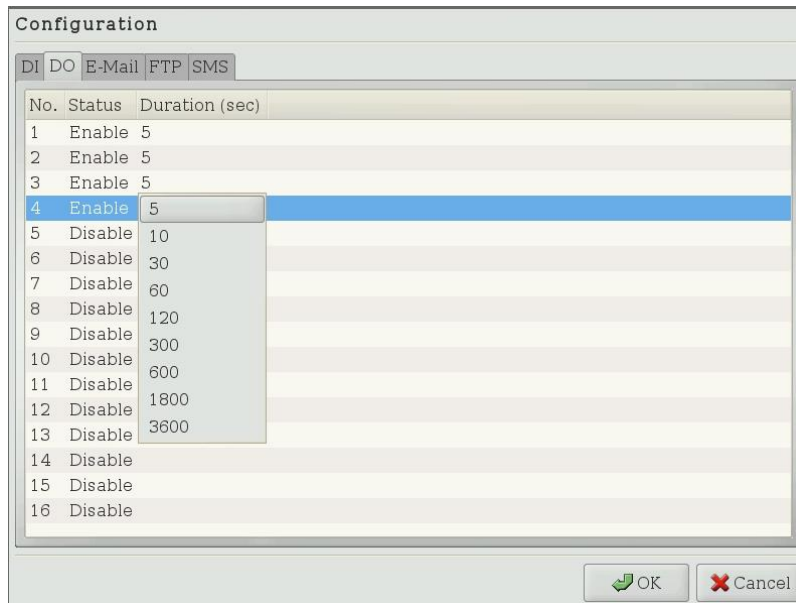
Choose Disable, NC, or NO according to your DI device (e.g., photo sensor).

- Disable: Disable the DI function.
- NC (normal closed): The signal loop is closed under normal conditions. When the loop becomes open, DI will be triggered until the loop becomes closed again. In other words, if the loop keeps on open for a period of time, DI will keep on triggering in that time interval.
- NO (normal open): The signal loop is open under normal conditions. When the loop becomes closed, DI will be triggered until the loop becomes open again. In other words, if the loop keeps on closed for a period of time, DI will keep on triggering in that time interval.

## (2) Configuration of DO (Alarm Input) device

Click the tab of “DO” and it will show the menu of “DI” configuration. Each row represents DO (Alarm Output) device. Click the “Status” column in any row and it will pop up the two Status types for your selection.

# Linux-Embedded DVR



## [DO Status]

- Disable: Disable the DO function.
- Enable: Enable the output signal when DO is triggered.

## [DO Duration]

- Set the duration of DO signal. The available durations are 5, 10, 30, 60, 120, 300, 600, 1800 and 3600 seconds. If DO is triggered in this time interval, DO will keep on triggering.

## (3) Configuration of E-Mail Server

Click the tab of “E-Mail” and it will show the menu of “E-Mail” server configuration.



- Enter the IP address or the hostname of the E-Mail server.
- Enter sender’s full email address. It must be a valid email address.
- If the mail server requires user name and password to send emails, please “Enable” the

# Linux-Embedded DVR

option of “SMTP Authorization”.

- Enter Username and Password for the SMTP authorization.

<b>!</b>	<b>Note</b> If you don't know the IP address of your mail server, you can ping the mail server to get the IP address as following figure.
----------	--

## (4) Configuration of FTP Site

Click the tab of “FTP” and it will show the menu of “FTP” site configuration.

The screenshot shows a web-based configuration interface titled "Configuration". At the top, there are tabs for "DI", "DO", "E-Mail", "FTP", and "SMS", with "FTP" currently selected. Below the tabs, there are four input fields: "IP", "Username", "Password", and "Passive Mode". Each of the first three fields has a "Test" button to its right. The "Passive Mode" field is a dropdown menu with "Disable" and "Enable" options.

- Enter the IP address of the FTP site.
- Enter Username and Password to login to the FTP site.
- Enable “ Passive mode” if DVR is behind Firewall/NAT and connects to network by PPPoE. Please refer to “Chapter 5-5 Network” configuration.

## (5) Configuration of GSM Modem for Sending SMS Message

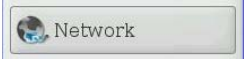
Because SMS message is sent via GSM Modem, you should shave the setting of GSM modem.

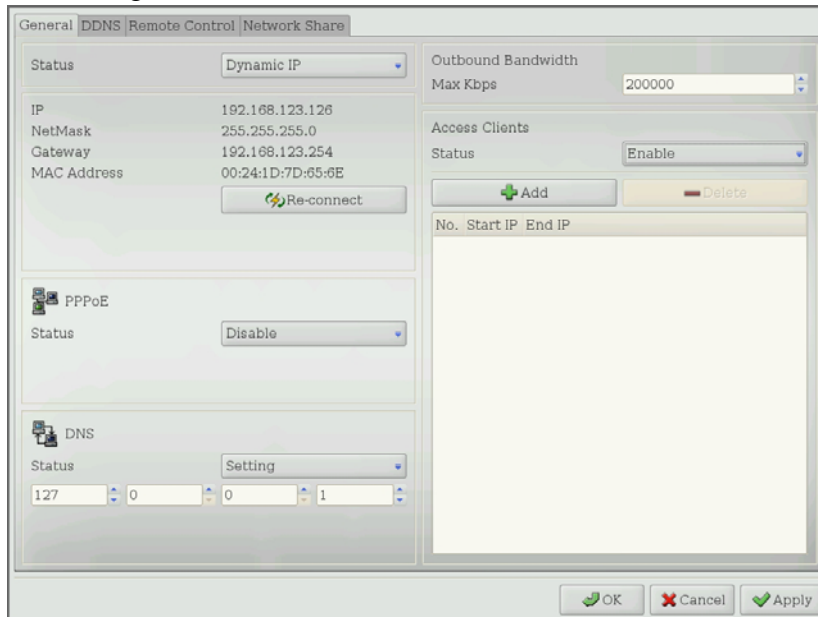
Click the tab of “SMS” and it will show the menu of “GSM” modem for yours configuration.

The screenshot shows a web-based configuration interface titled "Configuration". At the top, there are tabs for "DI", "DO", "E-Mail", "FTP", and "SMS", with "SMS" currently selected. Below the tabs, there are two input fields: "Baudrate" and "COM Port". The "Baudrate" field is a dropdown menu with "1200 bps" selected and "bits/sec" as the unit. The "COM Port" field is a dropdown menu with "COM 2 (SMS)" selected.

- Set the **Baud Rate** to be 9600 baud per second. (Note: If you fail to send SMS successfully, you may reduce the baud rate to 4800 or 2400 bps and try again.)
- Set the DVR COM Port interface according to the physical connection of GSM Modem.

## 5-5 Network

Click **Network** tab  on the Setup Main menu to enter the window of Network configuration.



No.	Start IP	End IP

### 5-5-1 General

#### [DVR Network Address]

This DVR supports Static IP and Dynamic IP address. If you select “ Static IP”, please enter “IP”, “NetMask” and “Gateway” in the fields. If you select Dynamic IP and click “ Apply” tab



, DVR will be assigned a set of IP configurations automatically. You can click “ Reconnect” tab when DVR is disconnected.



# Linux-Embedded DVR

The screenshot shows a configuration window with tabs for 'General', 'DDNS', 'Remote Control', and 'Network Share'. The 'Network Share' tab is active. Under the 'Status' section, a dropdown menu is set to 'Static IP'. Below this, there are four rows of input fields: 'IP' (192, 168, 123, 12), 'NetMask' (255, 255, 255, 0), 'Gateway' (192, 168, 123, 254), and 'MAC Address' (empty).


## [PPPoE]

This function enables DVR to connect to network by ISP service. When DVR dial out, successfully, your Internet Service Provider (ISP) will provide DVR with a set of IP configurations.

The screenshot shows a configuration window titled 'PPPoE'. It has a 'Status' dropdown menu set to 'Enable'. Below it are two text input fields for 'Username' and 'Password', each with a small icon to its right. At the bottom, there is an 'IP' label and a 'Re-connect' button with a lightning bolt icon.

Step 1: Enable“ **PPPoE** ” function.

Step 2: Enter “User Name” and “Password” that you get from ISP provider to connect to network through modem, ex, ADSL, Cable Modem, etc.

Step 3: Click “Apply”  tab.

Step 4: Then, DVR will connect to network automatically according to your PPPoE User Account.

### Note

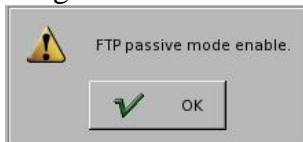
- After enabling PPPoE connection and receiving a set of IP configuration from ISP, DVR will reconnect to ISP if it detects connection over time. However, this behavior will not be recorded as a log.
- It will be recorded as a DVR log when DVR dials out successfully, failed or reconnects.
- If it is in connection status, DVR will disconnect the network connection

# Linux-Embedded DVR

!	and then reconnect again when you click “ Reconnect” button.
---	--

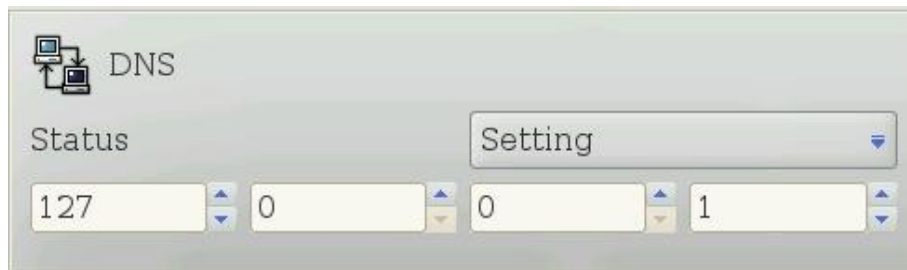
- FTP sending Alarm under PPPoE connection:

When you enable PPPoE connection and want to send alarm message to FTP server, DVR you automatically turn on the “ Passive Mode” in DVR FTP server setting (Please refer to the setting of “**Chapter 5-4 Alarm Setting**”) and show “ **FTP passive mode enable**” message. Please click “ Ok” and DVR will send alarm message to FTP server in “Passive mode”. Passive mode is designed to for DVR is behind Firewall or NAT.



## [ DNS ]

An Internet service that translates *domain name* into IP address. For example, the domain name www.example.com can translate into 198.105.232.4.




The way of DVR getting DNS IP address depends on Network setup (Static IP or Dynamic IP) and PPPoE connection. The following table describes how the DVR can get the DNS IP address under different setting of PPPoE and Network configuration. You can set DNS “**Status**” as “**Setting**”, “**Auto(DHCP)**” or “**Auto(PPPoE)**” according to this table.

		Network Setup	
		Static IP	Dynamic IP
PPPoE Setup	Disable	* <b>Setting</b> : Set DNS IP manually.	* <b>Setting</b> : Set DNS IP manually. * <b>Auto (DHCP)</b> : Automatically assign DNS IP by DHCP.
	Enable	* <b>Setting</b> : Set DNS IP manually.	* <b>Setting</b> : Set DNS IP manually. * <b>Auto (DHCP)</b> : Automatically assign DNS IP by DHCP.

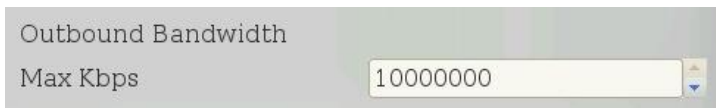
# Linux-Embedded DVR

	Enable	<p>*<b>Setting</b>: Set DNS IP manually.</p> <p>*<b>Auto (PPPoE)</b>: Automatically assign DNS IP under PPPoE connection.</p>	<p>*<b>Setting</b>: Set DNS IP manually.</p> <p>*<b>Auto (DHCP)</b>: Automatically assign DNS IP by DHCP.</p> <p>*<b>Auto (PPPoE)</b>: Automatically assign DNS IP under PPPoE connection.</p>
--	--------	---	--

	<p><b>Note</b></p> <p>If DNS Status is set as “Auto (PPPoE)” and then PPPoE is set as “Disable”, DNS Status will automatically change to “Setting”(Set DNS IP set manually).</p>
---	--

## [Outbound Bandwidth]

You can control the DVR outbound network bandwidth by directly entering the max bandwidth in the field of “Outbound Bandwidth”. The range is from 56Kbps to 10000000Kbps and the default setting is 200000Kbps



Outbound Bandwidth  
Max Kbps

## [Access Clients]

You can limit the remote IP( PC)s to access the DVR.

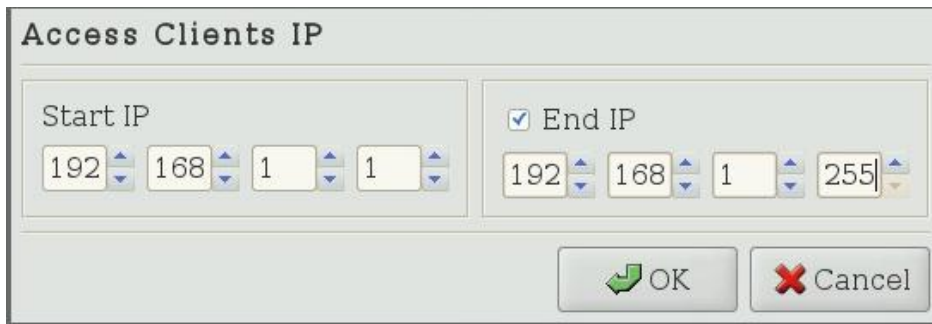


Access Clients  
Status

No.	Start IP	End IP

- Step 1: “**Enable**” the “Status” of “Access Clients”.
- Step 2: Click “**Add**” and it will show the below menu. Enter the “Start IP” and you can decide if you also want to limit the “End IP” to access the DVR.

# Linux-Embedded DVR



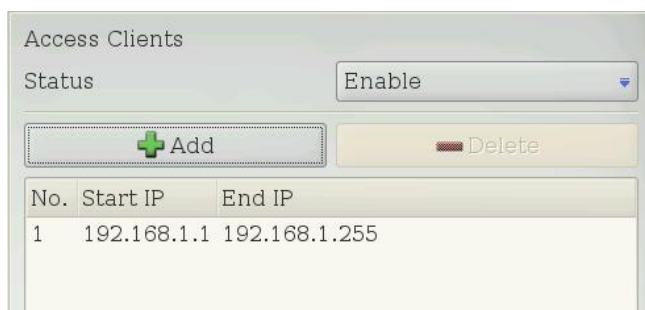
Access Clients IP

Start IP: 192.168.1.1

End IP: 192.168.1.255

OK Cancel

- **Step 3:** Click “Ok” tab and the IP range of access client that you set will be shown in the Access window. You can set multiple ranges.



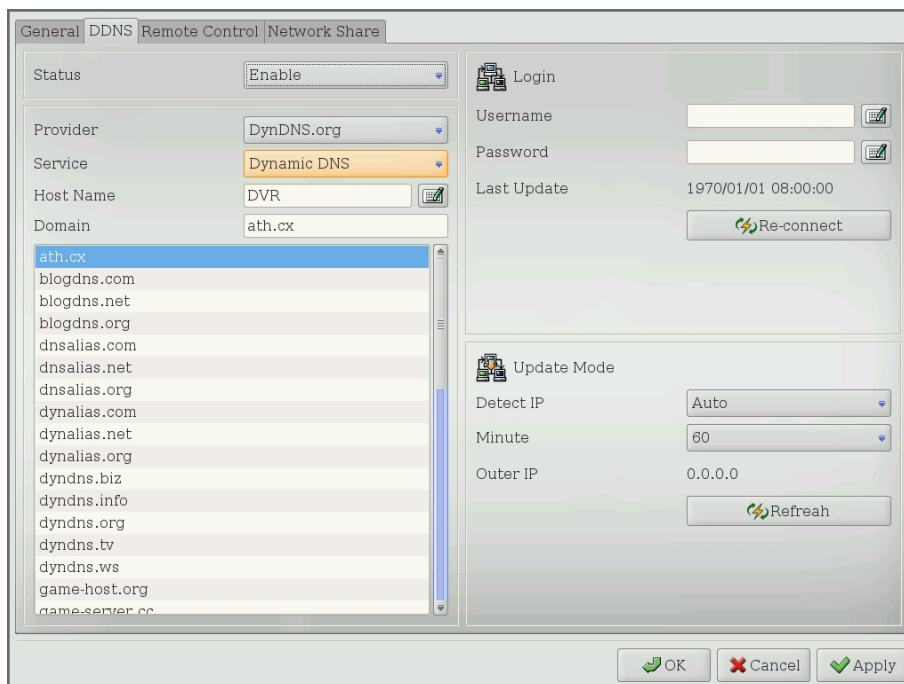
Access Clients

Status: Enable

+ Add - Delete

No.	Start IP	End IP
1	192.168.1.1	192.168.1.255

## 5-5-2 DDNS



General DDNS Remote Control Network Share

Status: Enable

Provider: DynDNS.org

Service: Dynamic DNS

Host Name: DVR

Domain: ath.cx

ath.cx  
blogdns.com  
blogdns.net  
blogdns.org  
dnsalias.com  
dnsalias.net  
dnsalias.org  
dynalias.com  
dynalias.net  
dynalias.org  
dyndns.biz  
dyndns.info  
dyndns.org  
dyndns.tv  
dyndns.ws  
game-host.org  
game-server.cc

Login

Username: [ ]

Password: [ ]

Last Update: 1970/01/01 08:00:00

Re-connect

Update Mode

Detect IP: Auto

Minute: 60

Outer IP: 0.0.0.0

Refresh

OK Cancel Apply

Dynamic DNS (DDNS) service allows you to alias a dynamic IP address to a static hostname so that your computer to be more easily accessed from various location on the Internet.

# Linux-Embedded DVR

We support free DDNS account and customer pay account. To use this service, for free account, you must apply an account from several free Web servers such as <http://DynDNS.org>

(1) Step 1: Enable DDNS

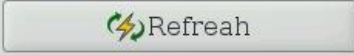
(2) Step 2: Select DDNS Provider and Service supported by this DVR. Enter DVR Host Name and select Domain in the list.

Provider	DynDNS.org
Service	Dynamic DNS
Host Name	DVR
Domain	ath.cx

(3) Step 3: Enter “ User account” and “ Password” to login to DDNS server to get DDNS service. You can click “ Apply” to let DVR connect to DDNS server automatically.

Login	
Username	
Password	
Last Update	1970/01/01 08:00:00
	

(4) Step 4: Select “Auto” or “Manually” update DDNS IP address to avoid using incorrect IP address after network is disconnected. DVR using incorrect IP address will result in failing to connect to System from remote site (IE or CMS).

Update Mode	
Detect IP	Auto
Minute	60
Outer IP	0.0.0.0
	

- “Auto” Mode: DVR will automatically update DDNS IP address. You can select

# Linux-Embedded DVR

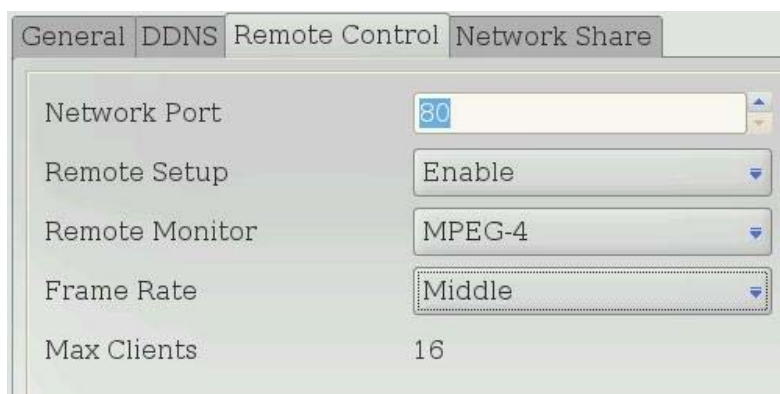
update frequency and the unit is “Minute”. For example, Update it per 10 minutes or 20 minutes.

- “Manually” Mode: Manually update DDNS IP address.

<b>!</b>	<b>Note</b> It is possible that the function of auto detecting Firewall/NAT IP address will be affected by the ISP’s transparent proxy so that DDNS provider detects the wrong IP. Please ask your local ISP to solve this issue.
----------	--

## 5-5-3 Remote Control

This DVR system provides powerful remote control functions including Remote Monitor, Remote Setup, Remote Playback and Remote Backup. In the DVR site, you need to define the remote authority and set up the remote configuration for the remote user to access DVR.



- Network Port:

Set DVR port number. The default port number is 80. This DVR supports port number from 80 to 65535. However, if you set the Proxy server in your IE browser to connect to DVR, the network ports you can use are from 80 to 40000.

<b>!</b>	<b>Note</b> If you use another network port (like port 81) instead of default port 80, when you start the remote viewing, please remember to add the port number followed by the IP address and the “ <a href="#">http://</a> ” in front of the IP address. For example: <a href="#">http://142.173.62.171:81</a> . If you use port 80, you could just click the IP address directly.
----------	--

# Linux-Embedded DVR

- Remote Setup:

Enable user to change the DVR settings from remote side.

- Remote Monitor:

DVR provides JPEG and MPEG4 video format for remote monitor. If you select JPEG, DVR will encode one JPEG picture per channel per second for remote access. The remote PC needs to install Java Virtual Machine. If you select MPEG 4, DVR will encode about Max 480fps (High) pictures per system per second for remote access. The remote PC needs to install “MPEG4 player”, which can be download from the DVR.

- Frame Rate:

This function defines that the DVR can send how many number of frames per second to remote side for monitoring. There are five levels of remote frame rate including Lowest (30fps), Low (60fps), Medium (120fps), High (240fps) and Highest (480fps). If “**Remote Monitor**” is disabled or selected as JPEG, “Frame Rate” button will be hidden.

- Max. Clients:

This DVR supports 4 or 16 remote clients concurrently. The number of remote clients that DVR supports depends on the DVR channel and RAM size. The following table describes the DRAM and DVR channel matrix for remote client numbers,

RAM size Channel#	256MB	512MB	1GB
4	8	16	16
8	<del>8</del>	16	16
16	<del>8</del>	4	16

## 5-5-4 Network Share

This function allows you to find the DVR in the network and copy the recorded files to your PC remotely.

# Linux-Embedded DVR

General | DDNS | Remote Control | Network Share

Status: Enable

PC Name: DVR

Workgroup: DVR-GROUP

Username: dvrbackup

Password: \*\*\*\*

Camera: Select Camera


- (1) Enable the “Status” of Network Share.
- (2) Give a name for this DVR for identification in the network.
- (3) Enter the Workgroup.
- (4) Give a password for remote access of the files.
- (5) Click on the camera numbers to be shared in the network.

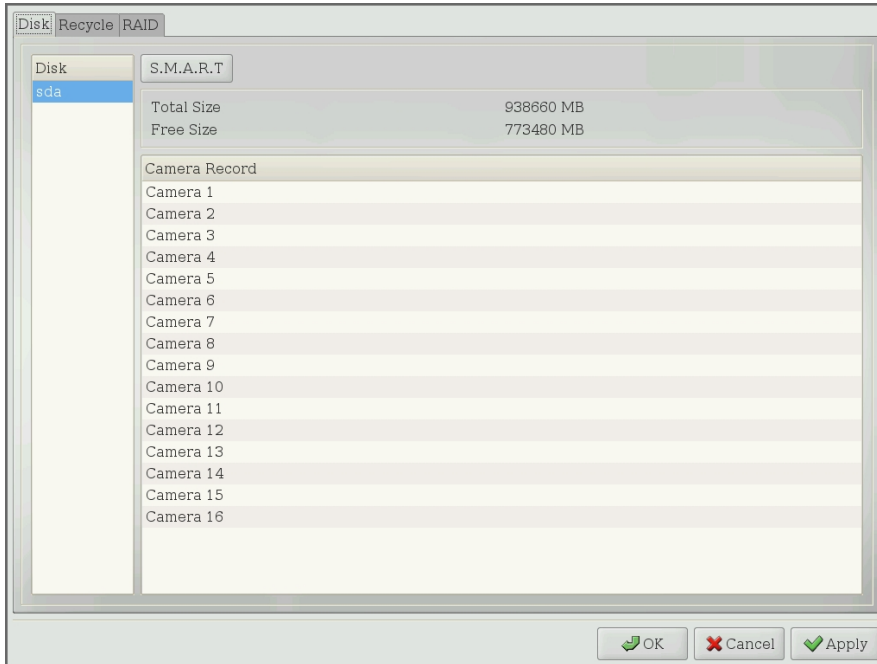
Please refer to Chapter 6 for remote operation.

<b>!</b>	<b>Note</b> Network Share only can be used in LAN environment.
----------	---



## 5-6 Storage

Click “Storage” tab  on the Setup Main menu to enter the window of Storage configuration.



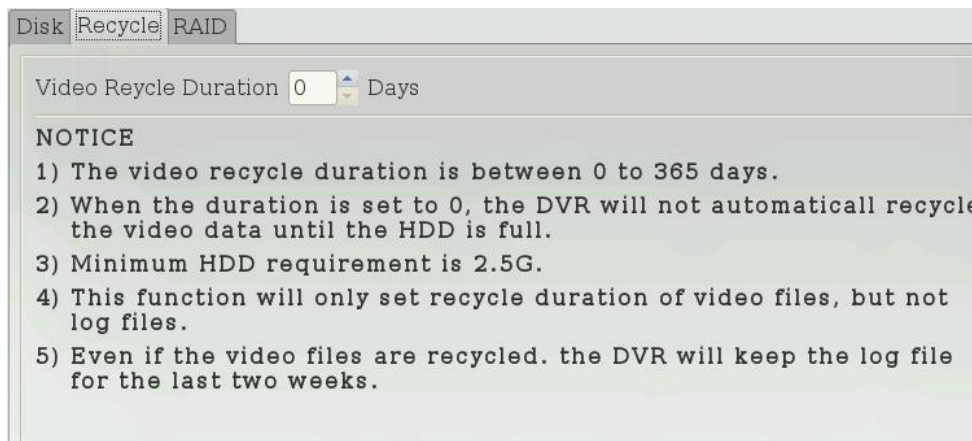
### 5-6-1 Disk

This function let you check HDD status by clicking “ S.M.A.R.T” tab. You can see the HDDs in the Disk Window and all of the cameras recorded in the HDD.



## 5-6-2 Disk Recycle

Besides, HDD is recycled when HDD is full. This DVR also provides self-defined HDD recycle duration from 0 to 365 days even HDD is not full.

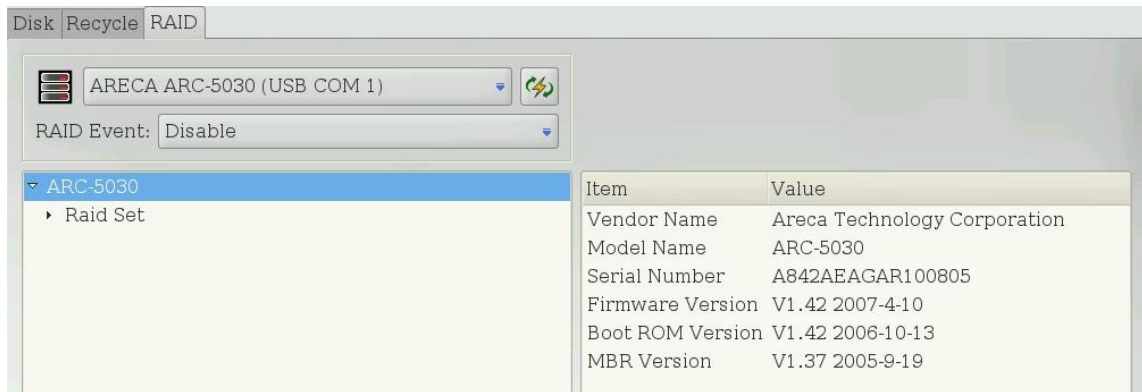


<b>!</b>	<p><b>Note</b></p> <ul style="list-style-type: none"><li>• The video recycle duration is between 0 to 365 days.</li><li>• When the duration is set to “0”, DVR will not automatically recycle the video data except HDD is full.</li><li>• The function of Recycle Disk is to set the recycle duration of the video file and it doesn’t recycle log file.</li><li>• Even if the video files are recycled, DVR will keep the log file for the last two weeks.</li></ul>
----------	--

## 5-6-3 RAID Box

This DVR integrates with ARECA RAID Box and supports RAID configuration and RAID alarm notification. These two functions are done via DVR COM Port. Please refer to the physical installation of ARECA RAID Box. If your DVR equipped with RAID Box and you want to have the RAID configuration and alarm notification in DVR, you should enable the RAID box here and select correct COM port according to the physical installation.

# Linux-Embedded DVR



## ■ RAID Information:

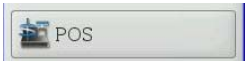
Select RAID Box in the option list and it will show the detail RAID information including RAID Box, RAID Setting, RAID Volume and Disk information. Because these four types of RAID information are managed by tree view, you should click the triangle icon in front of each type of RAID information in left window to see the detail RAID information in right window.

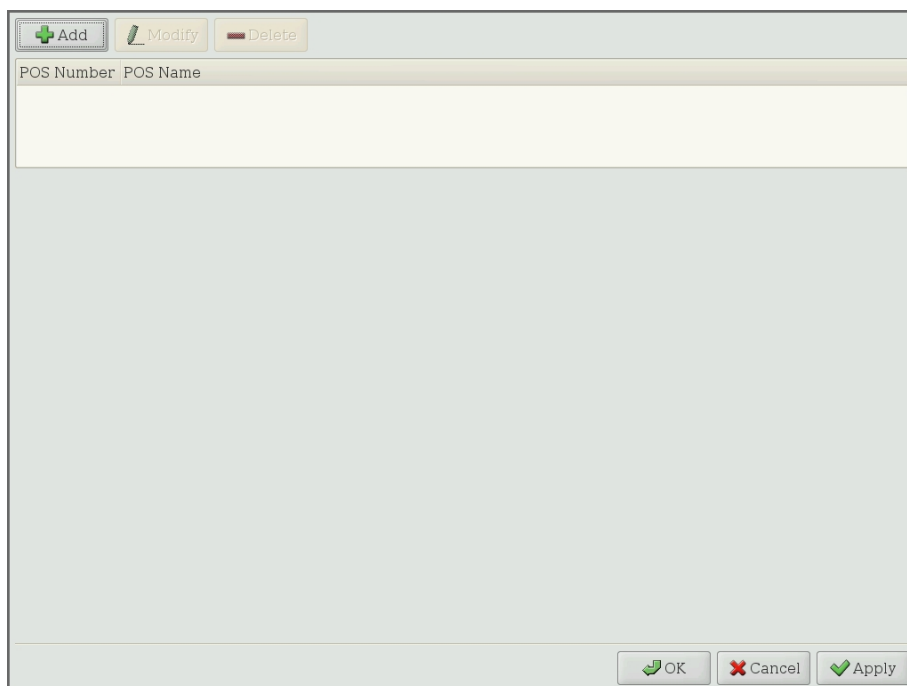
Information	Description
RAID Box information	<ol style="list-style-type: none"> <li>1. Vendor name</li> <li>2. Serial number</li> <li>3. Firmware version</li> <li>4. Boot ROM version</li> <li>5. MBR version</li> <li>6. Model name (ex. Areca 5030)</li> <li>7. Com Port</li> </ol>
RAID Setting information	<ol style="list-style-type: none"> <li>1. RAID Alias name</li> <li>2. Capacity</li> <li>3. Number of member disks in this RAID set</li> <li>4. RAID State</li> <li>5. Number of volumes created in this RAID set</li> </ol>
Volume setting information	<ol style="list-style-type: none"> <li>1. Volume Name</li> <li>2. RAID Level</li> <li>3. Capacity</li> <li>4. Stripe Size</li> <li>5. Volume Status</li> <li>6. Number of member disks</li> </ol>
Disk Setting information	<ol style="list-style-type: none"> <li>1. Drive model name</li> </ol>

# Linux-Embedded DVR

	<ol style="list-style-type: none"><li>2. Drive serial number</li><li>3. Drive firmware version</li><li>4. Capacity and Device State</li></ol>
--	---

## 5-7 POS

Click “POS” tab  on the Setup Main menu to enter the window of POS configurations.

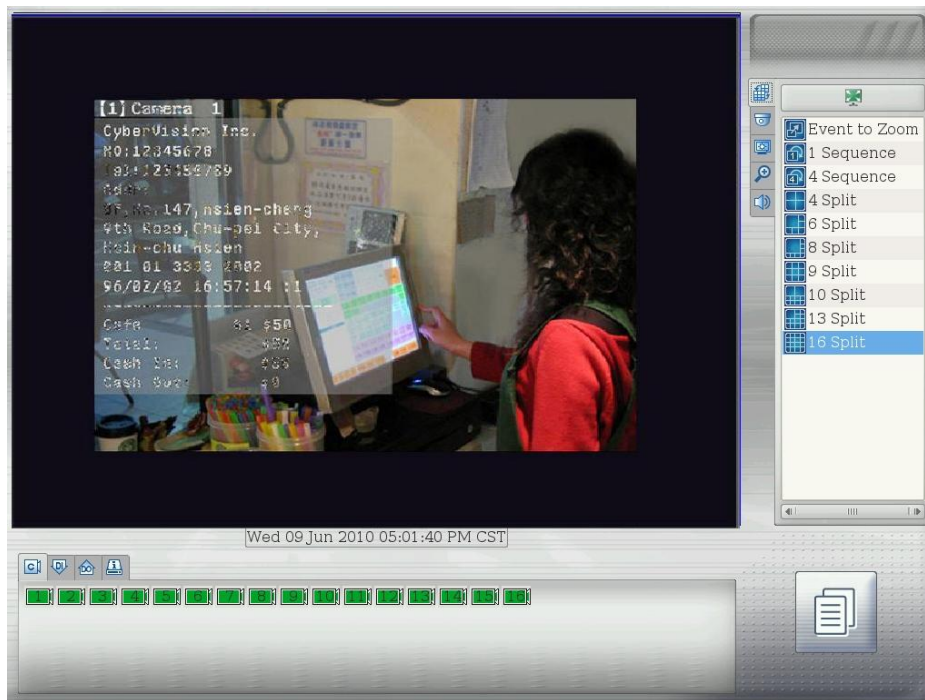


This DVR successfully integrating with POS system can allow the recording of all transactions for later review for such thefts as sweethearting, substitute scanning, no rings, short changing, short rings, and pilfering. It can largely be applied to convenience store, grocery, gas station and etc.

For POS application, this DVR- integrates with EPSON printer protocol and 3688 printer protocol in it. Generally, if your POS system supports EPSON printer or 3688 printer protocol, DVR can work with it.

Through RS232/RS485 and Ethernet connection interface, DVR can receive the transaction data from POS. You need the extra connection accessories according to your connection interface and POS connection quantity and distance.

# Linux-Embedded DVR



## 5-7-1 POS Setting

(1) Click “Add” to start to add POS device.

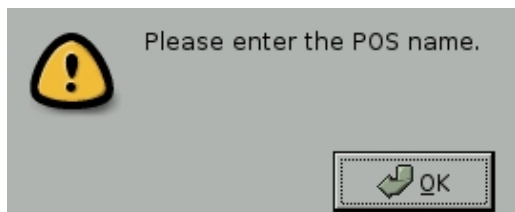
When you click “Add”, it will show the POS Setup menu as below

POS Setup	
POS Name	1111
Status	Enable
<b>General</b>	
Printer Protocol	EPSON
POS Product	KANGS
Font Size	14
Idle Time(s)	6
Font Color	
<b>OSD</b>	
Select Camera	1
Display	Enable
OSD Position	20.20.280.200
<b>Connection</b>	
Type	COM
COM Port	COM 1 (POS)
Baud Rate	9600
Data Bit	8
Parity	Disable
Stop Bit	1
OK Cancel	

# Linux-Embedded DVR

## (2) Enter the POS Name and “Enable” the POS device.

Currently, DVR just supports English POS name. If you don't enter any character or enter repeated POS name, DVR will pop up message to remind you.



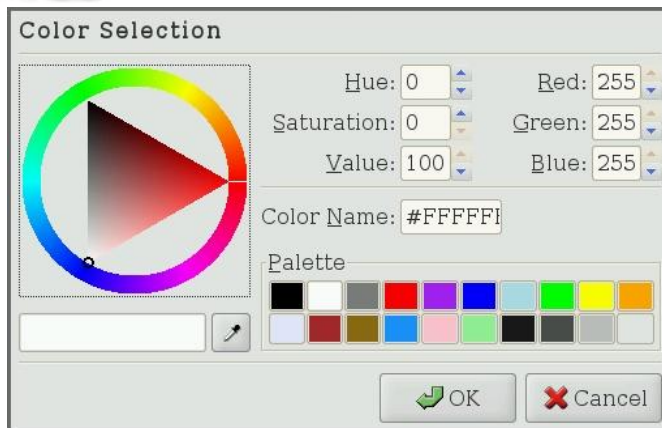
## (3) POS General configurations

A configuration window titled "General" with the following settings:

- Printer Protocol: EPSON (dropdown menu)
- POS Product: KANGS (dropdown menu)
- Font Size: 14 (spin box)
- Idle Time(s): 6 (spin box)
- Font Color: (color picker with a triangle icon)

- **Printer Protocol**  
DVR supports EPSON and Generic (3688) printer protocol and Maitre'D POS solution. Please select the correct printer protocol your POS system supports.
- **POS Product**  
DVR has integrated with NILES, EMIS and KANGS POS products. Please select the correct POS system. If your POS system is not in the list, you can select “Others” option but POS transaction data will only show in the Display mode.
- **Font Size:**  
Please select the font size of POS message you want to display in camera channel. The range of font size is from 12 to 20.
- **Idles Time:**  
The time at which POS message will stay in the channel if no further POS message is input.
- **Font Color:** Set the font color. Please drag the triangle to the color you want.

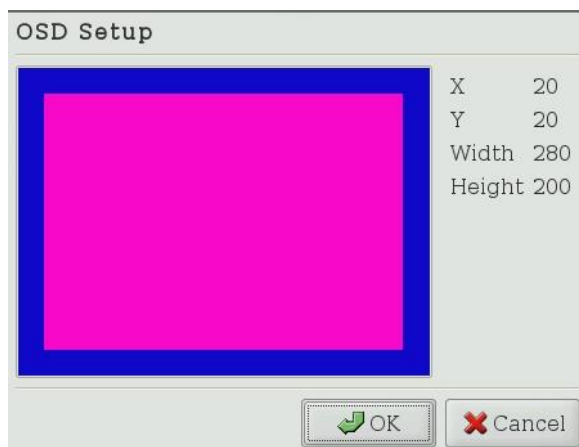
# Linux-Embedded DVR



## (4) POS OSD configurations



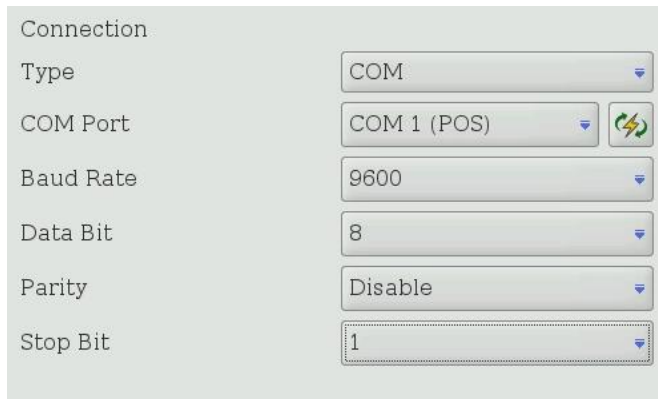
- **Select Camera:**  
Select the cameras that POS message will be shown on.
- **Display:**  
Enable the POS message showing on the camera in Display mode.
- **OSD Position:**  
Click "**Setup**" tab to open OSD setup menu as below picture. You can drag mouse to define location and range of POS message that is printed on screen.



# Linux-Embedded DVR

## (5) POS Connection configurations

There are two options to connect POS to DVR. One is directly through RS232 serial (COM) port. The other one is Ethernet. You can ask your supplier to provide these accessories for the connection. Please see the POS connection illustration in this session.



The image shows a configuration window for POS connection. It has a title bar 'Connection' and several settings:

Type	COM
COM Port	COM 1 (POS)
Baud Rate	9600
Data Bit	8
Parity	Disable
Stop Bit	1

- **Connection Type-RS232/RS485 COM Port:**

- \***COM Port:** Please select the correct COM Port you use to connect the POS to DVR.

- \***Baud Rate:** POS Data transmission speed through COM Port to DVR. Please set up the Baud according to your POS device.

- \***Start Bit:** Please set up the Start Bit according to the COM port transmission spec of your POS device.

- \***Data Bit:** Set up the data bit according to the COM port transmission spec of your POS device.

- \***Parity:** Set up the Parity according to the COM port transmission spec of your POS device.

- \***Stop Bit:** Set up the Stop bit according to the COM port transmission spec of your POS device.

- **Connection Type -Ethernet:**

- \***IP:** Enter the IP address of the RS232 to Ethernet converter.

- \***Port:** Set up the port number of RS232 to Ethernet converter.



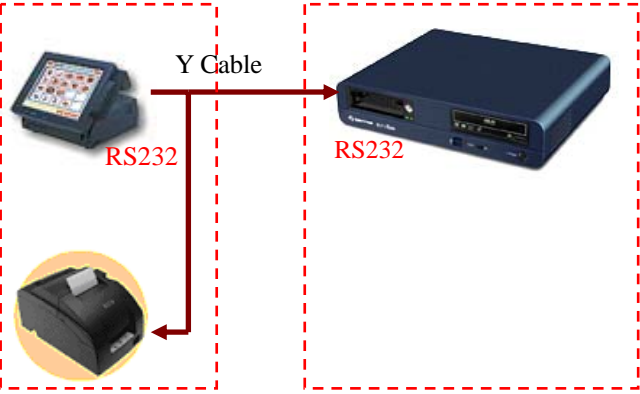
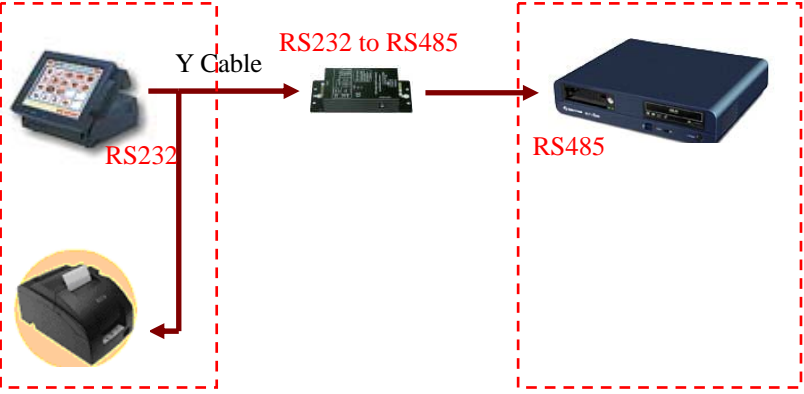
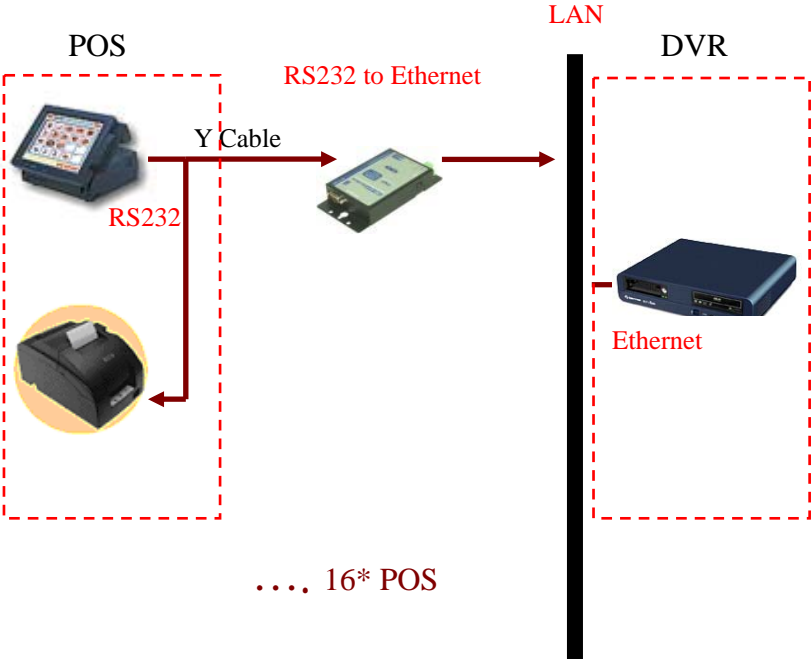
# Linux-Embedded DVR

Connection	
Type	Ethernet
POS IP	192.168.123.251
POS Port	4000

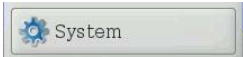
Now, POS configuration is finished and DVR can start to receive POS transaction message.

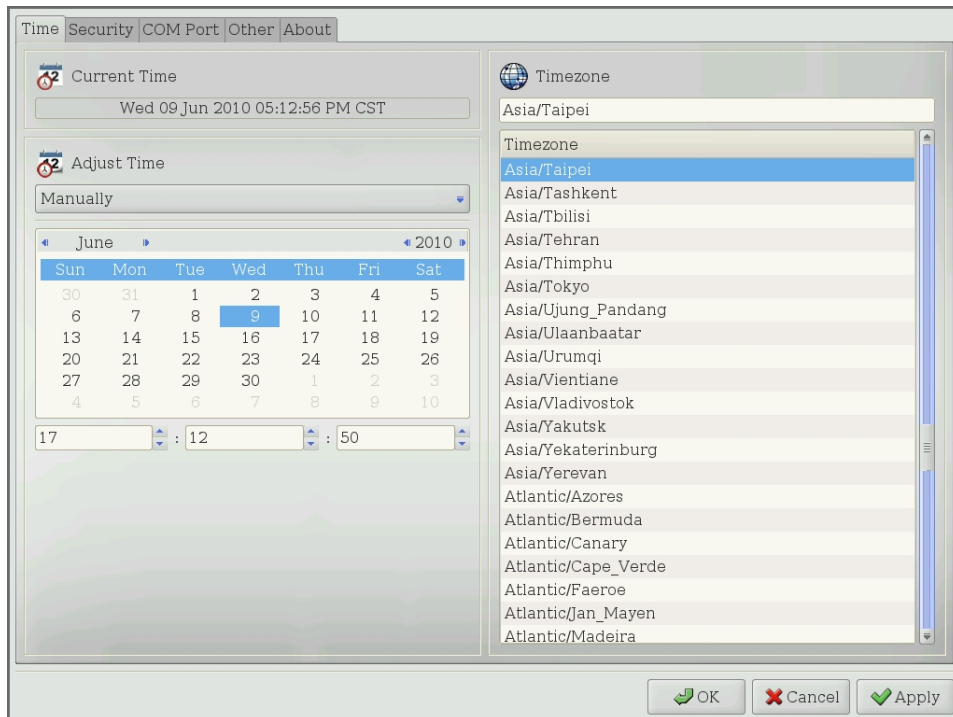
<b>!</b>	<p><b>Note</b></p> <p>If you select Maitre'D POS system, please follow below setting.</p> <ol style="list-style-type: none"><li>1. Please select Maitre'D in Printer protocol and POS product.</li><li>2. Because Maitre'D POS system only supports Ethernet connection, please select "Ethernet" in connection type.</li><li>3. The default port number used to connect to Maitre'D POS is 5111.</li></ol>
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# Linux-Embedded DVR

Connection Type	Illustration	Remarks
RS232 COM Port	 <p>POS</p> <p>DVR</p> <p>Y Cable</p> <p>RS232</p> <p>RS232</p>	<ul style="list-style-type: none"> <li>*One POS connection</li> <li>*The distance between POS and DVR is within 1.8m</li> </ul>
RS232 to RS485 COM Port	 <p>POS</p> <p>DVR</p> <p>Y Cable</p> <p>RS232 to RS485</p> <p>RS232</p> <p>RS485</p>	<ul style="list-style-type: none"> <li>*One POS connection</li> <li>*The distance between POS and DVR is over 1.8m</li> </ul>
Ethernet	 <p>POS</p> <p>DVR</p> <p>Y Cable</p> <p>RS232 to Ethernet</p> <p>RS232</p> <p>Ethernet</p> <p>LAN</p> <p>.... 16* POS</p>	<ul style="list-style-type: none"> <li>*Multiple POS Connections</li> <li>* The distance between POS and DVR is Unlimited.</li> </ul>

## 5-8 System

Click “System” tab  on the Setup Main menu to enter the window of System configurations.



### 5-8-1 Time Setting

#### (1) Time Synchronization

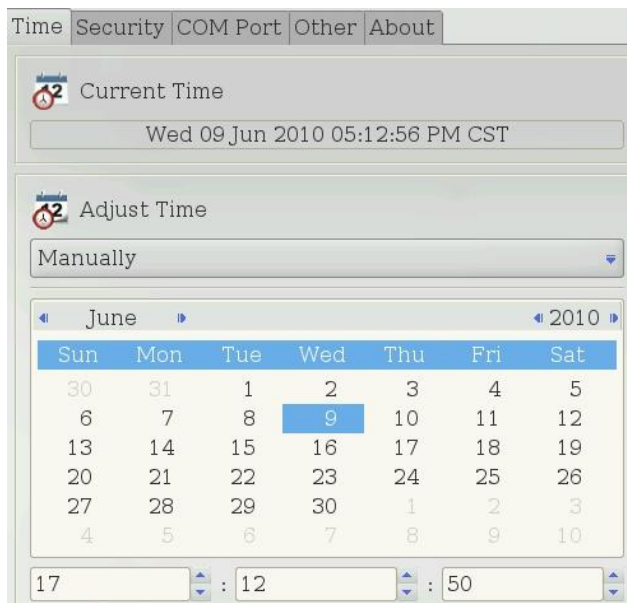
There are four kinds of methods to synchronize DVR's time.

Type	Description
1. Manual	Set up time manually
2. Time Server	Synchronize DVR time with Time Server
3. RF Clock	Synchronize DVR time with RF Clock
4. RTC	Synchronize DVR time with Real Time Clock (RTC)

- Time Sync Manually

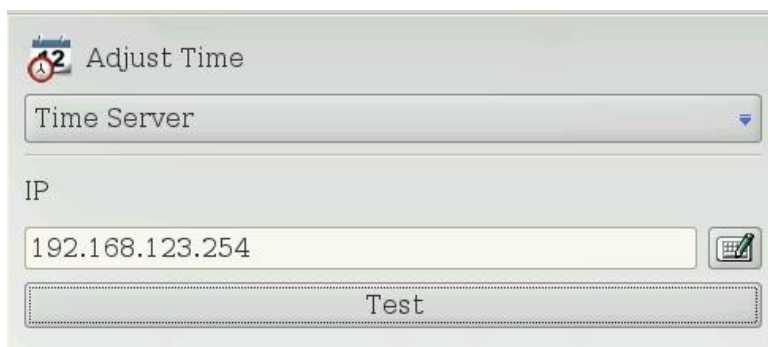
Directly select the date in the calendar and set Hour, Minute and Second in the time fields.

# Linux-Embedded DVR

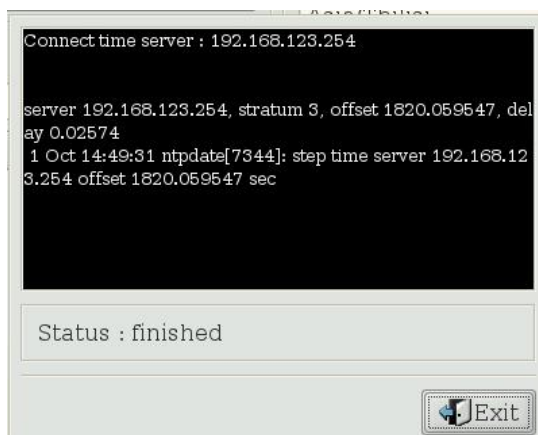


- Time Sync with Time Server

When you select “Time Server” Synchronization, enter the IP address or hostname of the Time Server.



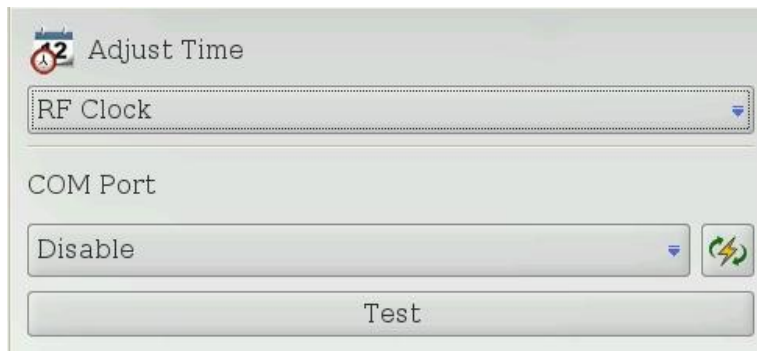
You can test the Time Server function by clicking “Time Server test”.



# Linux-Embedded DVR

- Time Sync with RF Clock

When you use RF Clock to synchronize DVR time, you should select DVR interface for connection of RF Clock device. Usually, the interface is COM Port.



You can click “ Test” button to do the “RF clock test”. Then, the DVR will issue a command to RF clock to get Time information and display it on the screen. RF Clock should be connected

- Time Sync with RTC

Select RTC option and click “Apply” tab.



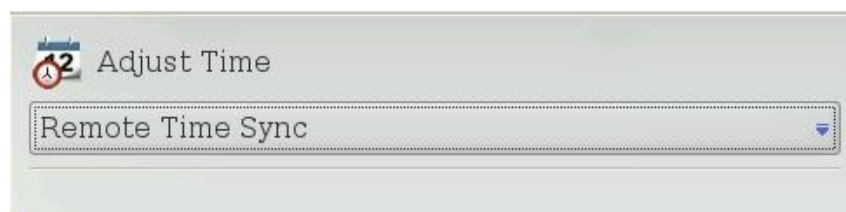
- Remote time sync

(1) You could using below API to get time from system

<http://dvrip/rmapi/system/time-sync?control=system-time-get>

(2) You could set time to system by below API.

[http://dvrip/rmapi/system/time-sync?control=system-time-set&ynd-hms=\[ynd hms\]& cur-usec= \[usec\]](http://dvrip/rmapi/system/time-sync?control=system-time-set&ynd-hms=[ynd hms]& cur-usec= [usec])



# Linux-Embedded DVR



## Note

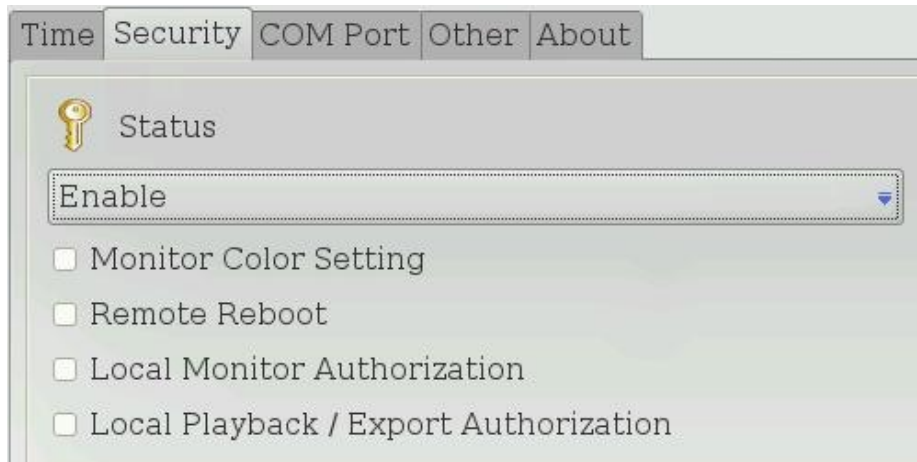
- Configuring Time Synchronization will reboot DVR.

## (2) Timezone Setting

When using DVR first time, you should set up the correct Timezone according to the DVR location. Incorrect Timezone setting will result in incorrect time synchronization via NTP and incorrect Daylight Saving time.



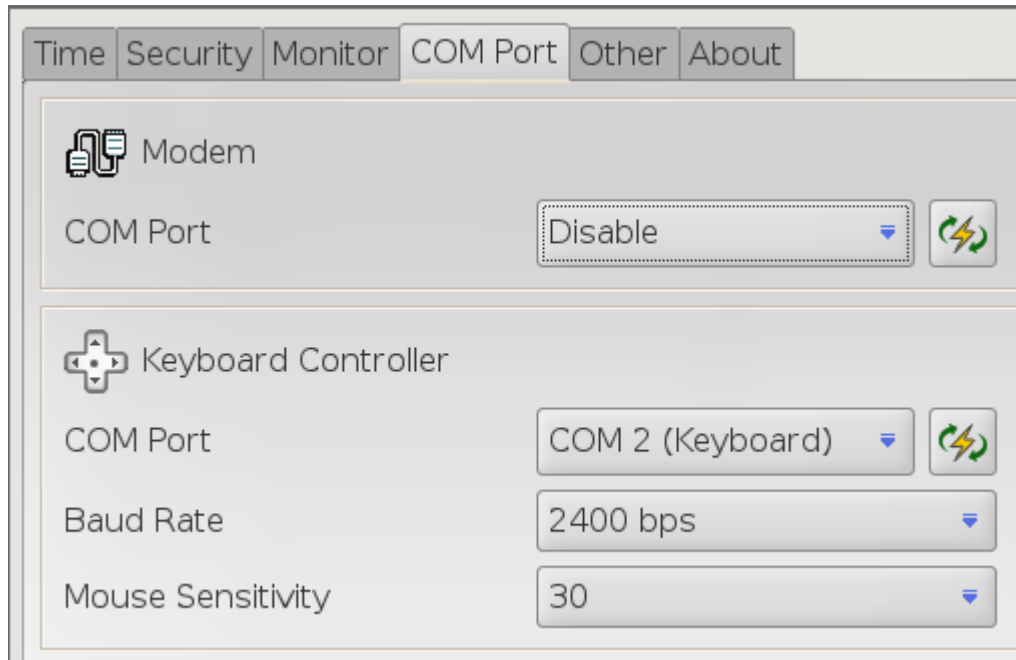
## 5-8-2 Security



You can “Enable” or “Disable (preset)” the security control setting.

- **Monitor Color Setting:** If enabling this setting, color adjustment functions cannot be executed in Display mode.
- **Remote Reboot:** If enabling this setting, “Administrator” account can have the right to reboot DVR from remote IE browser. Please refer to “**Chapter 6-7 Remote Reboot DVR**”.
- **Local Monitor:** If enabling this setting, you can set user Monitor permission in “User” configuration menu. Please refer to **Chapter 5-3 User Account Management**.
- **Local Playback/Export:** If enabling this setting, you can set User permission of Playback and export video or log files in “User” configuration menu. Please refer to **Chapter 5-3 User Account Management**.

## 5-8-3 COM



- Modem : This setting is for Modem COM (RS232) port setting. This DVR supports COM1, COM2 and maximum 26 USB COM Ports.
- Keyboard Controller :

To make the Keyboard controller function correctly, please follow the instructions below:

### (1) Hardware Installation

For keyboard controller, DVR supports two interfaces

- RS485 COM Port:  
Step 1: Connect RS232-to-485 converter to the COM Port of DVR  
Step 2: Connect the cable of PTZ to the RS485 converter.
- USB COM:  
Step 1: Connect USB-to-RS232 converter to USB port of DVR.  
Step 2: Connect RS232-to-RS485 converter to the connector of USB-to-RS232 converter.  
Step 3: Connect the cable of PTZ to the RS485 converter.

### (2) Software Installation

- According to the interface between DVR and PTZ, select COM Port or USB COM.
- Setup the baud Rate of keypad (Default is 2400).



# Linux-Embedded DVR

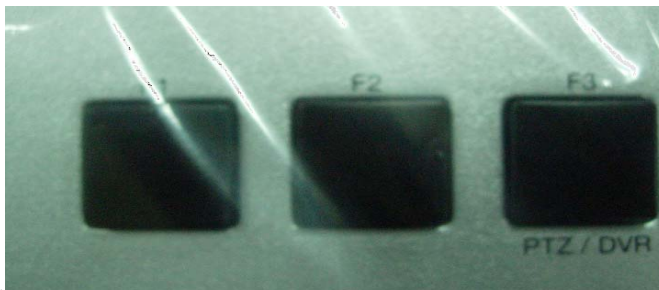
- Mouse sensitivity is defined by user the range is 10 to 100 (Default is 30).

## (3) Keypad setting

- Turn on Keypad. You will see below information on OSD panel.



- Please Click F3 on keypad (hot key 19) to switch to DVR mode, then "Addr number" will appear on LCD panel for keypad ID setup



- Set keypad Addr (System ID) which has to be the same as that of DVR System ID. (Default is "1")
- How to change other ID on keypad?
- Please click CAM/ID below LCD panel



Please type ID number (by hot key 17) and click ENTER (hot key 16).  
Below example for ID number 5)

# Linux-Embedded DVR



Setup completed and DVR can be controlled by keypad.



## ● Function Hot key

NO.	Key	Description
1	View	Hot key for changing split in the monitor and playback.
2	Live	Hot Key for entering Monitor, but the hot key is useless in the monitor mode.
3	Search	Hot key for entering Playback, but the hot key is useless in the playback mode.

# Linux-Embedded DVR

4	Rewind	The function of Rewind in the playback mode.
5	Pause	The function of pause in the playback mode.
6	Play	The function of play in the playback mode.
7	Next	The function of seeking next frame in the playback mode.
8	< Step	The function of slowing down in the playback mode. (In the digital zoom mode, the button is the function for zooming in.)
9	Step >	The function of speeding up in the playback mode. (In the digital zoom mode, the button is function of zooming out.)
10	Menu	Hot key for Menu.
11	Up	To control the direction of the mouse moving up.
12	Zoom	In the single channel mode, click once and the system will enlarge the displayed channel. In the digital zoom mode, the button is zooming in or zooming out.
13	Left	To control the direction of the mouse moving left.
14	Down	To control the direction of the mouse moving down.
15	Right	To control the direction of the mouse moving right.
16	Enter	The same function as the mouse clicked.
17	number	After keying specified number, press the button of “Enter”. The display of monitor will change to the specified single channel.
18	joystick	1. The same functions as “up”, “down”, “left”, and “right”. 2. In the playback mode, the Joystick is turning left and the player’s speed will decrease; turning right and the

# Linux-Embedded DVR

		<p>player's speed will increase. In the digital zoom mode, the Joystick is turning left will zoom in; turning right will zoom out.</p> <p>3. In the playback mode, release the Joystick and the player.</p>
19	Mode change	Control the mode between PTZ and DVR.

- Player's speed correspondence table

Standard Keyboard	DVR
0	1 time
1	1.5 time
2	2 time
3	3 time
4	4 time
5	6 time
6	8 time

## 5-8-4 Others

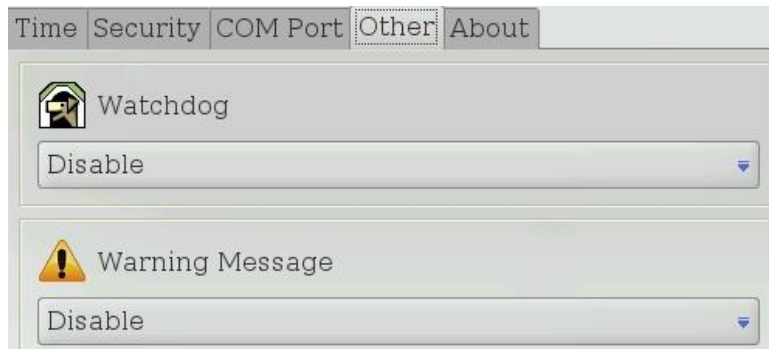
- **Watchdog**

Watchdog is a hardware device to monitor the system status. If the system fails to response, Watchdog will send a reset signal to the motherboard to reboot the system. To enable Watchdog function, please select available durations 15,20, 25... or 60 seconds. It requires **the first capture card** to have a physical connection to the reset pin of the motherboard.

- **Warming message**

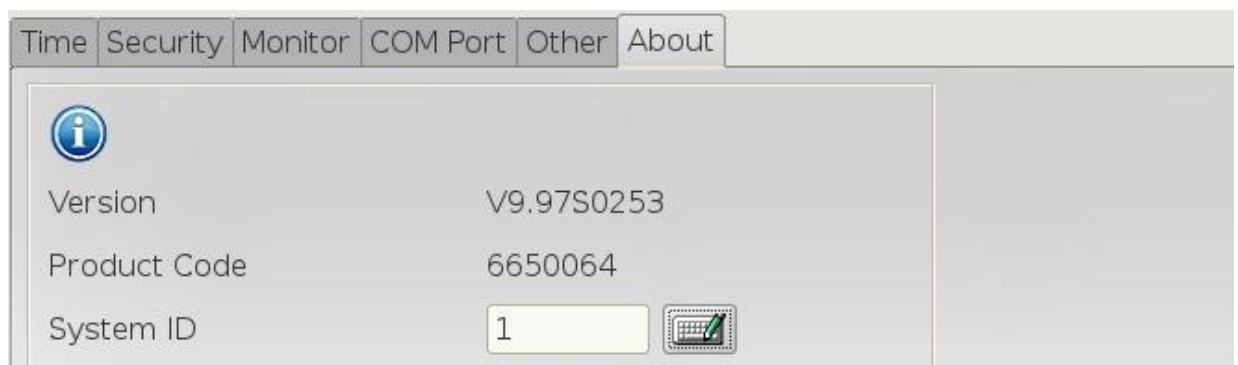
This function is for warning message popup enable and disable. If you disable it, it just save in the log, do not popup on screen.

# Linux-Embedded DVR



## 5-8-5 About

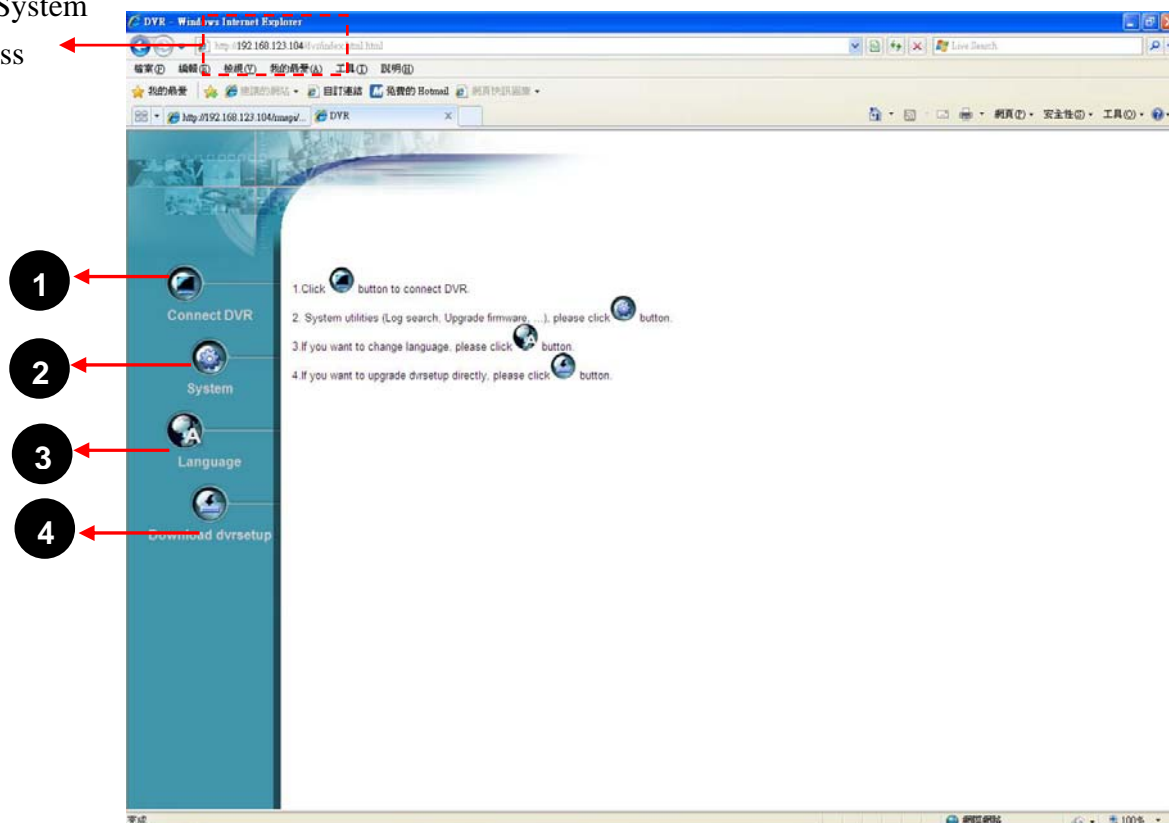
- This “About” Menu provides the information of DVR firmware version and product code.
- The system ID is setting for indentify the DVR when you using keyboard to control the DVR.



## 6. Remote Operation


This DVR System allows you to monitor and control the system via network. Open an IE browser on the remote PC and enter the IP address of the DVR to see the screen below:

Enter System  
IP Address




Items	Function	Description
1	Connect to DVR	Connect to DVR and start to connect DVR from remote site.
2	System	Remote Log Query, Upgrade Firmware, Upgrade License
3	Language	Support four-language operation including English Traditional Chinese, French and Japanese.
4	Download dvrsetup	Download dvrsetup when first time connecting DVR from remote site or upgrade dvrsetup when DVR with new version upgraded.

## 6-1 Download DVR Client (dvrsetup)

The remote PC needs to install the DVR client when the first time you want to connect to DVR from remote IE. Click the “Download” icon  and follow the instructions to install the DVR Client (dvrsetup program). If DVR with new version upgraded, you should also upgrade dvrsetup.

## 6-2 Remote Operation

After you finish the installation of DVR client, you can start to connect DVR from remote IE. Click the icon of “Connect DVR”  and the dialog box below will prompt to remind you to enter the user name and password. Please refer to “Chapter 5-3 User Account Management” to set the user authority for remote operation.

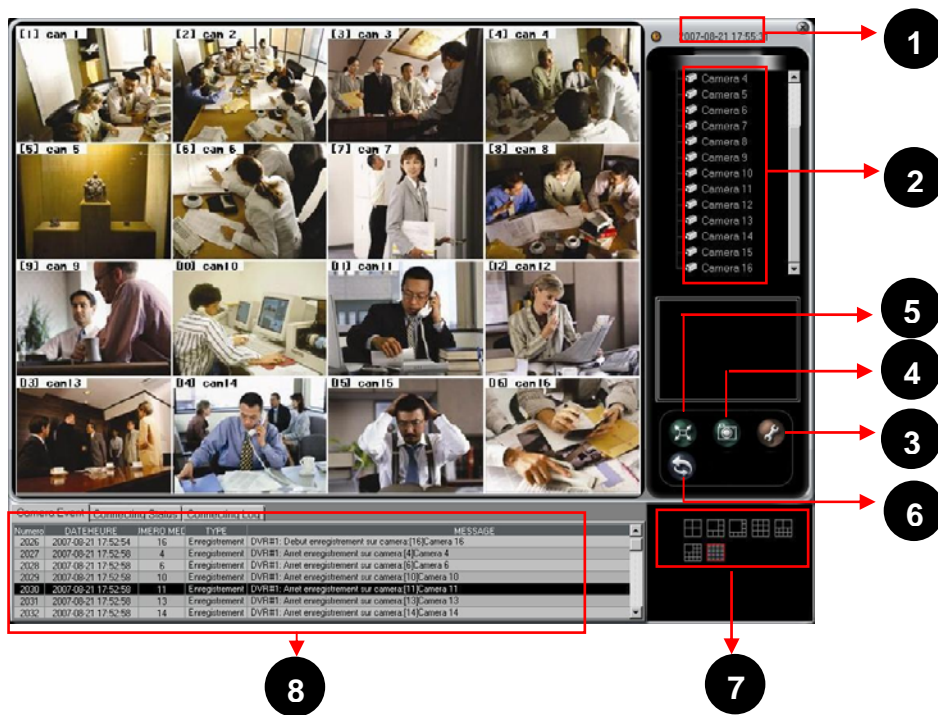


The image shows a Windows-style dialog box titled "Password Dialog". It contains the following fields and controls:

- Host: 192.168.123.104
- Port: 80
- Username: [Empty text box]
- Password: [Empty text box]
- Remember Account
- OK button (with a green checkmark icon)
- Cancel button (with a red X icon)

# Linux-Embedded DVR

If you pass the remote authorization, you can start to use remote client as screen picture below,



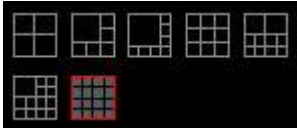
Items	Function	Description
1	Date/Time	Show the DVR date and time
2	Camera list	Camera display list
3	Setup	Set the network transmission preference and remote DVR setup
4	Snapshot	Catch display image and save to the storage device
5	Full screen	Display in full screen
6	Playback	Remote playback
7	Display Mode	Select display division
8	Log	DVR Log List

## 6-2-1 Remote Display Mode

Click on the corresponding icons on the bottom of the screen to view difference display mode. There are 4-, 6-, 8-, 9-, 10-, 13- and 16 split modes.



# Linux-Embedded DVR



## 6-2-2 Remote Setup

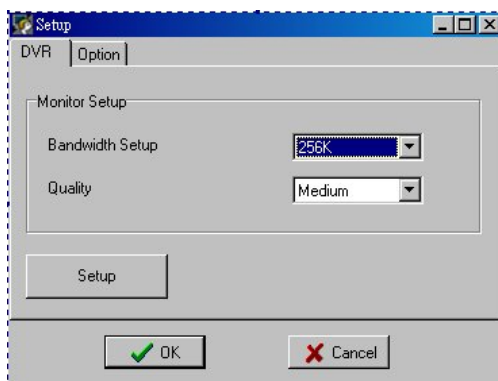


Remote configuration provides three major functions as below

- Select the suitable network setting based on the actual environment. You can adjust network speed based on real speed status, just select “56K”, “128K”, “256K”, “384K”, “512K”, “768K”, “1M”, “1.5M”, “2M”, “4M”, “8M”, “10M” or unlimited for adjustment on the ComboBox. If you use company’s or school’s LAN, we suggest you can choose “10M” for quick display. For ADSL, Cable Modem, and Dial-up service, please adjust the setup based on real ISP speed.

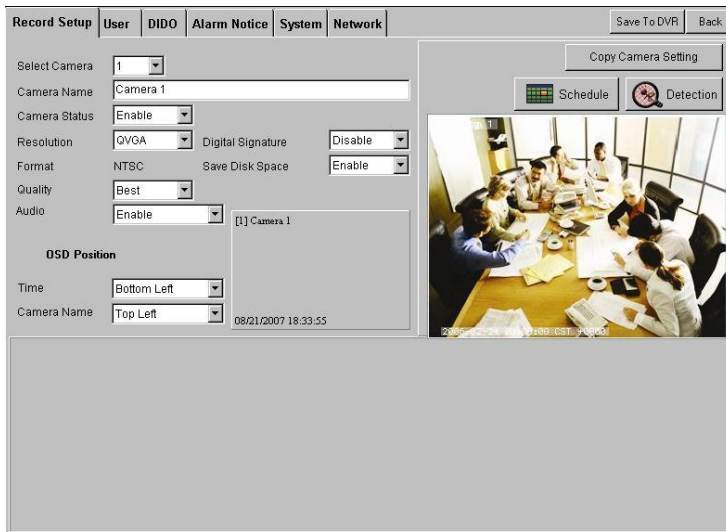
You also can adjust the image quality, just select “low”, “Medium”, “High” modes for adjustment on the ComboBox. We suggest you choose “High” for higher image Quality. However higher quality will occupy more system resources, network bandwidth, and it will result in low display speed.

- \* Low: 3 Kbytes/FPS
- \* Medium: 6 Kbytes/FPS
- \* High: 12 Kbytes/FPS



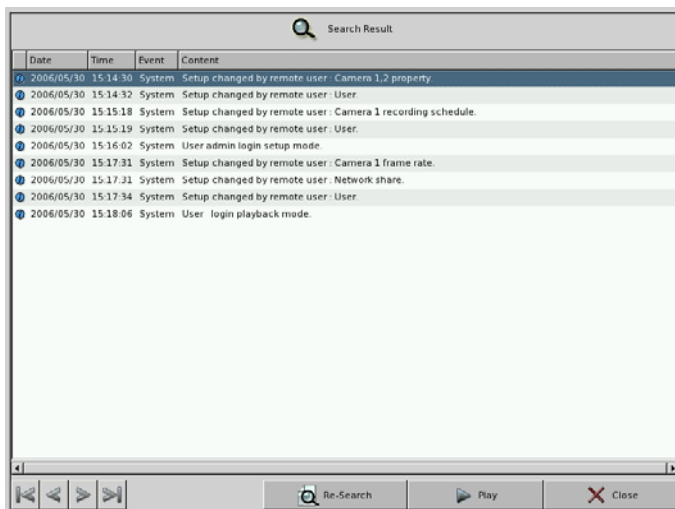
- Remote DVR Setup. If you are authorized the remote DVR setup, you can set the DVR configuration from remote IE client. Just click the button of “Setup” and the screen below will pop up. Please refer to “Chapter 5 for the DVR System Setting”.

# Linux-Embedded DVR



Each DVR remote setup change will be saved in the log system (refer to 4-2-2 Search by Event). The record will show any configuration that is changed by remote users.

Record shown in “Event Search.

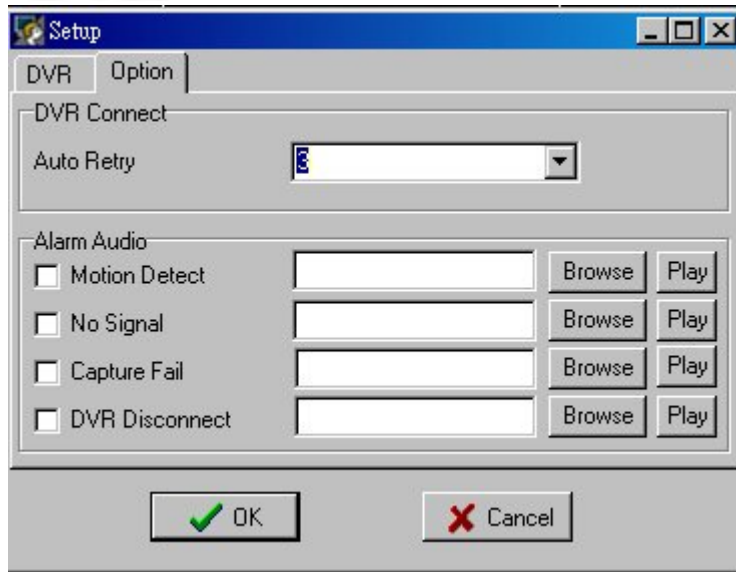


Besides, once any remote setup change is done, it will immediately send a message to DVR.



- Configuration of Remote Audio Alarm

When remote IE client disconnects with DVR, you can set the times of auto connection to DVR. You also can set the remote alarm audio when DVR occurs “ Motion detect”, No signal, Capture Fail or DVR disconnect.

# Linux-Embedded DVR




## 6-2-3 Snapshot

You can click the icon  (Snapshot) to catch the whole screen picture and save it as JPEG files by clicking the “Save” button  or print these pictures by clicking ”Printing” button



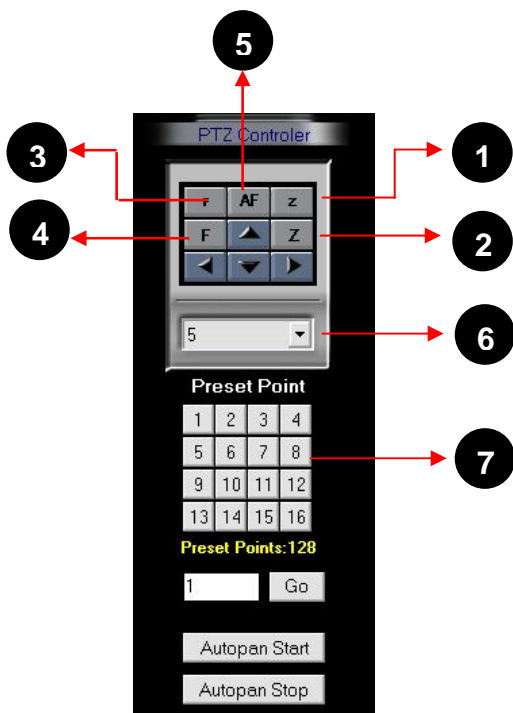
## 6-2-4 Full Screen

You can click the icon  (Full Screen) to enlarge the monitoring screen display. If you click any channel, it will enlarge that channel. If you want to return to main monitor, just click the

# Linux-Embedded DVR

“ESC” button on your keyboard.


If you want to operate the PTZ function, click on the channel with PTZ camera directly. The screen will enlarge and a PTZ control panel will appear on the right as below.

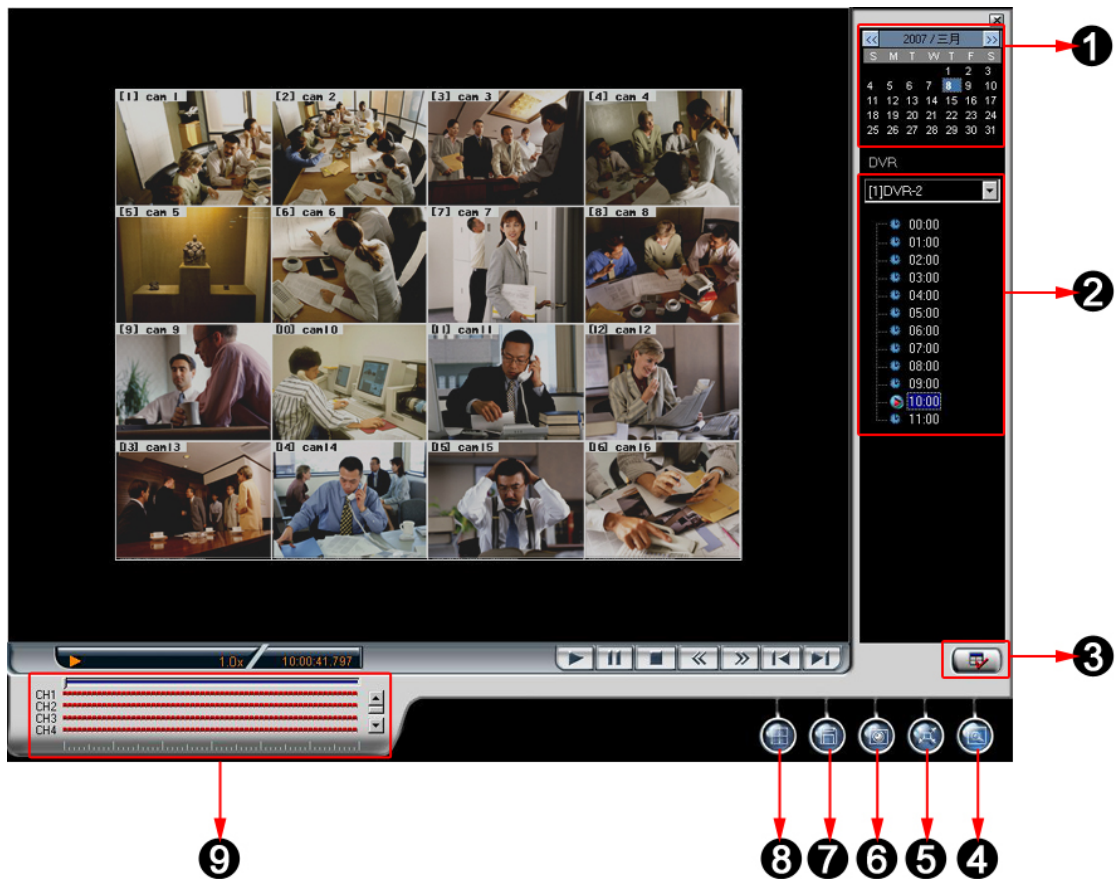


Items	Description
1	Zoom Out
2	Zoom In
3	Focus Far
4	Focus Near
5	Auto Focus
6	Adjust PTZ Speed
7	PTZ Preset Point

# Linux-Embedded DVR

## 6-2-5 Remote Playback


Click the **Playback** icon  to see the screen below.




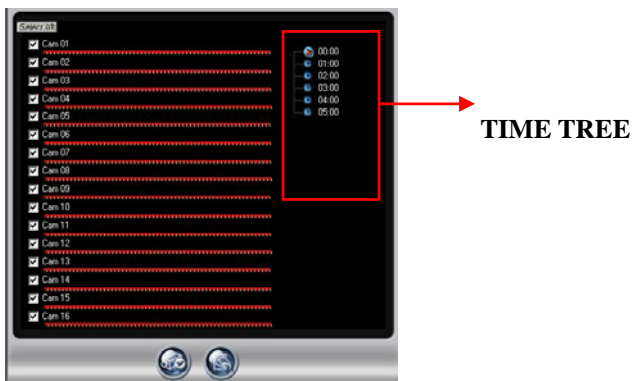
Items	Function	Description
1	Calendar	Select playback calendar
2	Data Tree	List recorded data file
3	Select Playback Channel	Select playback channels
4	Zoom the Playback Channel	Select different zooming screen
5	Full Screen	Playback in full screen
6	Snapshot	Catch playback image and save to the disk
7	Save Files	Download and backup the recorded files
8	Change Split Mode	Change playback division
9	Time Map	Select playback in minute


# Linux-Embedded DVR

## [Start to Playback]




- Select a date on the calendar.
- Click  button to select playback split mode. There are 1, 4 and 16-channel split modes.

Click  button to select the playback channels in different split modes and it will show the following Window to let you to select the playback channels. You can individually tick the cameras you want to playback or click **Select All** to select 16 channels at the same time. “Select all” button is only provided in 16-channel split. After selecting the playback channels, select the time slot you want to play in the “ Time Tree window. In the Time Tree Window”, it will list all of the time slots with recorded video files.



- Click  to save the configuration and start to playback according to the new configuration.

## [Download Files]




Click  button to download files and the following “**Download Window**” will appear. It will show all of the video files played in playback main window for user to download. When you click different camera, the played file in this camera will be ticked. You can also click “**Select None**” or **Select All** to quickly select the download files. After finishing the selection, click  button to start to download files or click  to exit to playback main window.

# Linux-Embedded DVR

Filename	Date	Start Time	End Time	Size(KB)
23-05-22-0.cam3	[2006-11-09]	23:05:22	23:16:23	27178
23-16-25-0.cam3	[2006-11-09]	23:16:24	23:26:25	32153
23-26-26-0.cam3	[2006-11-09]	23:26:26	23:36:27	32729
23-36-28-0.cam3	[2006-11-09]	23:36:28	23:46:29	33696
23-46-30-0.cam3	[2006-11-09]	23:46:30	23:56:31	30885
23-56-32-0.cam3	[2006-11-09]	23:56:31	23:59:59	11317
00-00-00-0.cam3	[2006-11-10]	00:00:00	00:10:01	32708
00-10-02-0.cam3	[2006-11-10]	00:10:02	00:20:03	32667
00-20-04-0.cam3	[2006-11-10]	00:20:04	00:30:05	32694
00-30-06-0.cam3	[2006-11-10]	00:30:06	00:40:07	32690
00-40-09-0.cam3	[2006-11-10]	00:40:07	00:50:09	32643
00-50-09-0.cam3	[2006-11-10]	00:50:09	01:00:10	32696

Download file window

## [Snapshot]

Click  button to show the **Snapshot Window**. If you don't want to print or save certain picture, you just click on that channel to "Hide" the screen. You can click the channel again to "Show" the screen. Click  button to print the snapshot pictures per channel per sheet by 320\*240 resolution or click  button to save the snapshot pictures as JPEG files.



SNAPSHOT WINDOW



Speed (-): To reduce the playback speed.



Speed (+): To increase the playback speed.



Playback



Previous 1 min: To rewind 1 minute.



Next 1 min: To forward 1 minute.




Pause

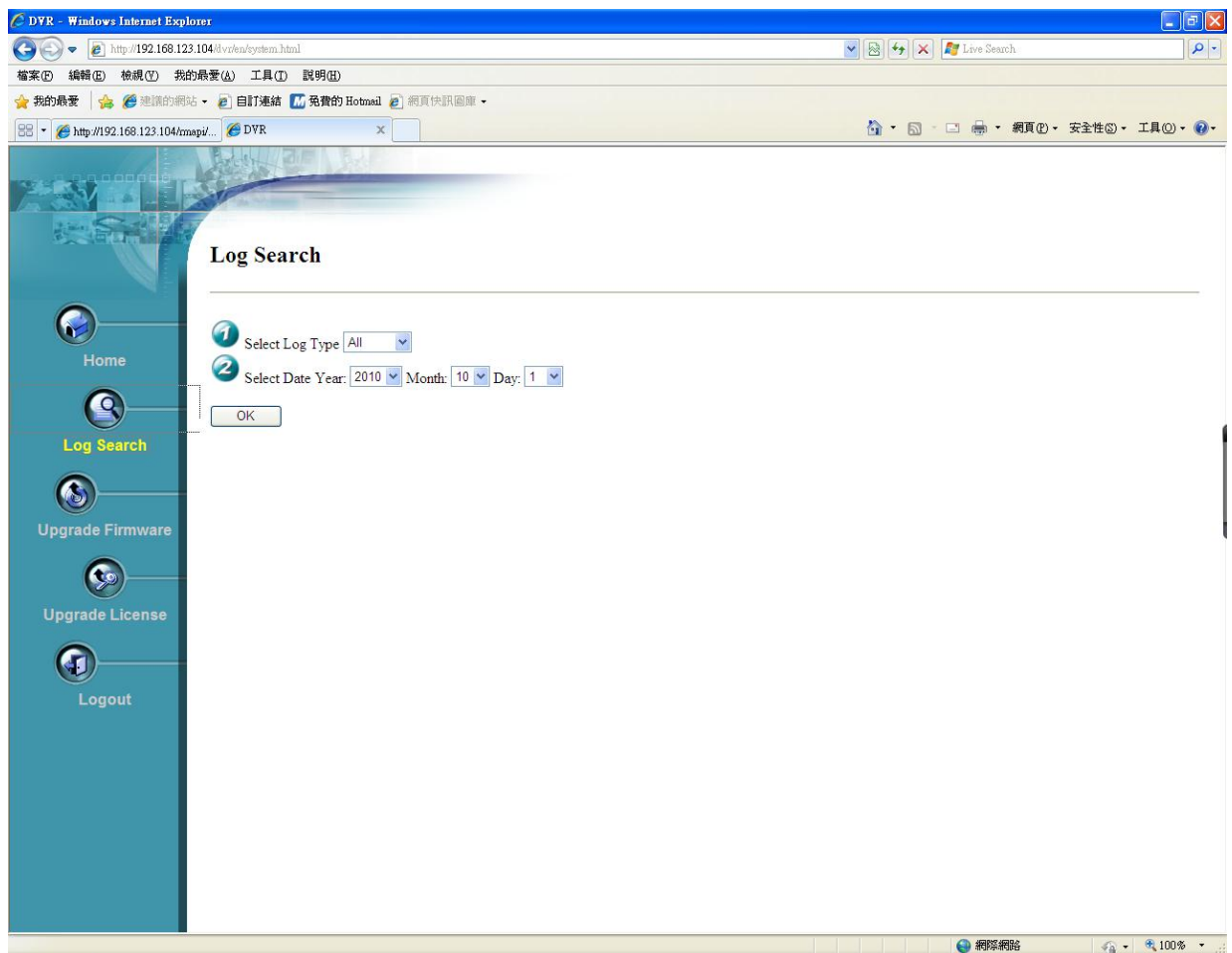


Stop

## 6-3 Remote DVR Log Query

You can query DVR log from remote IE browser.

Click the button of “Log”  in the front page and it will show the menu below.



### Step 1 Select Log Type

There are four types to select. All, System, Device and POS

### Step 2 Select the time for Log Query

You can query the logs by day.


### Step 3 Click “OK”

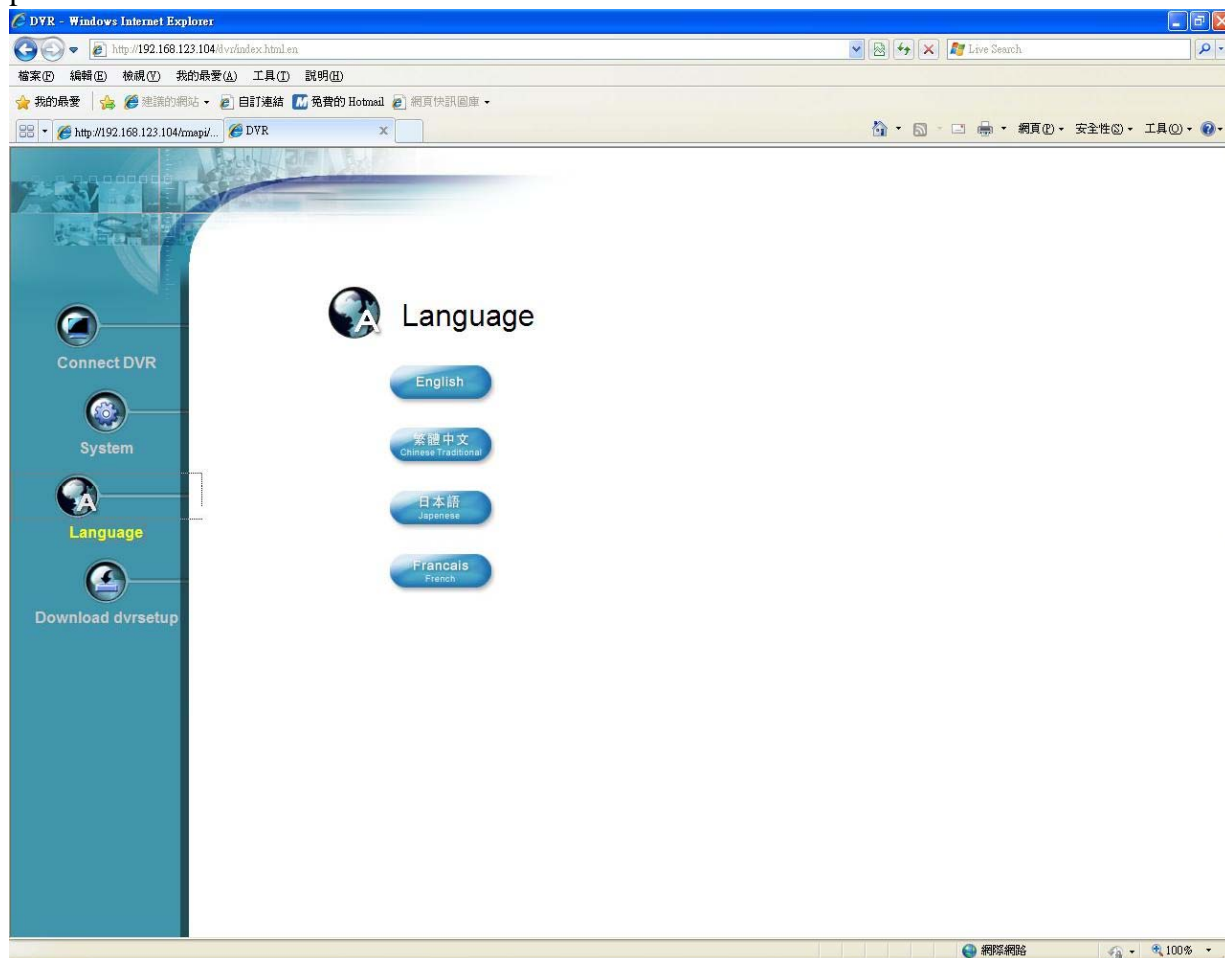
Click “OK” button to start log query and the result will show in the right window.



## 6-4 Remote Operation Language

In V5.01, DVR support four languages for remote IE operation including English, Traditional Chinese, Japanese and French. The default setting of operation language will be according to the language of Windows Operation System in your PC. If you want to change the operation

language, click the button of “Language”  in the front page and select the language you prefer.



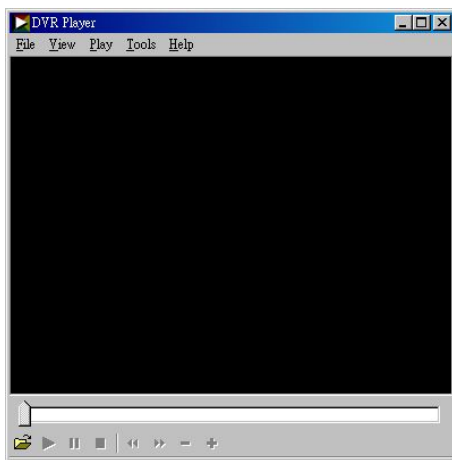
## 6-5 DVR Player


The DVR Player is used in three applications:

1. To watch the video clip downloaded from the DVR;
2. To watch the video clip burned on the CD-R/RW;
3. To verify the Digital Signature of the video clip.

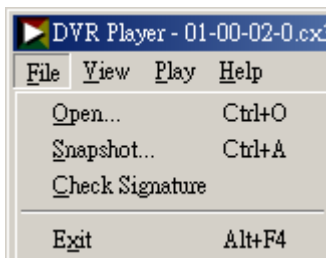


You can find the DVR Player application in the program files.



- Click on the icon  on bottom right to select a video clip.

You can check the digital signature in File -> Check Signature.

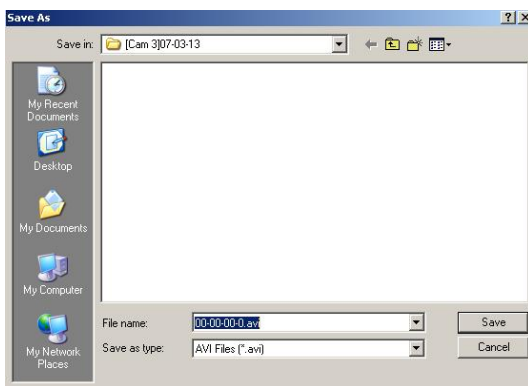


- **AVI Format Export:**

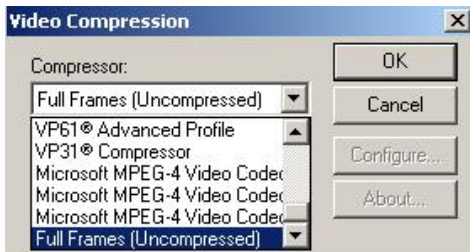
This function provides you to transform the download files from CX3 format to AVI format.

- a. Open a download file.
- b. In the "Tools" bar, select "**Convert to AVI**" and then select the path you want to save the AVI file and key in the AVI file name.

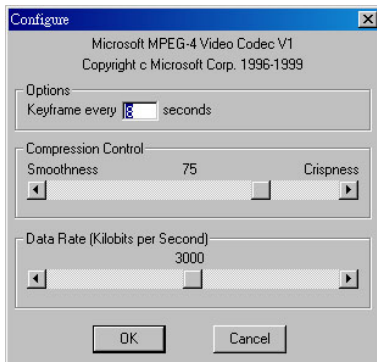
# Linux-Embedded DVR



c. Select the transforming format. Here we choose Microsoft MPEG 4 Video Codec.

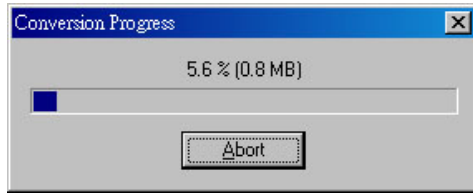


d. Select transforming parameters and it will influence the file's quality and size



# Linux-Embedded DVR

- e. Enter “OK” and then it will show the transforming status.



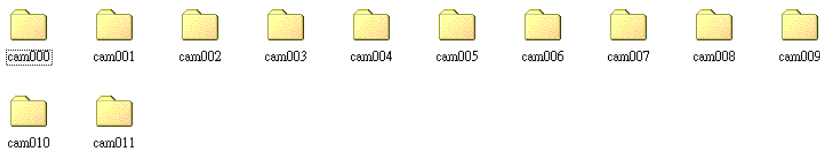
<b>!</b>	<p><b>Note</b></p> <ul style="list-style-type: none"><li>• The codec you choose are not all workable but it will prompt a warning message if it is not workable.</li><li>• Below four codecs are not supported by this systems,<ul style="list-style-type: none"><li>*Intel 4:2:0 Video V2.50</li><li>*Microsoft RLS</li><li>*Microsoft H.263 Video Codec</li><li>*Microsoft H.261 Video Codec</li></ul></li><li>• The time of transforming format will depend on the file size and the codec you choose.</li></ul>
----------	---

## 6-6 DVR Remote Backup

If the Network Share function is enabled, you can copy the video data of the DVR to any Windows PC in the same network.



- (1) Search computer in the network by the DVR name or IP address.
- (2) Enter the username and password you set in Chapter 5-3 “User Account Management”. If user wants to have the right of “ Remote Backup”, he should enable “Remote Playback”, ”Remote Setup” and “ Dial in Access”.
- (3) Copy the files to hard disk or storage for backup.



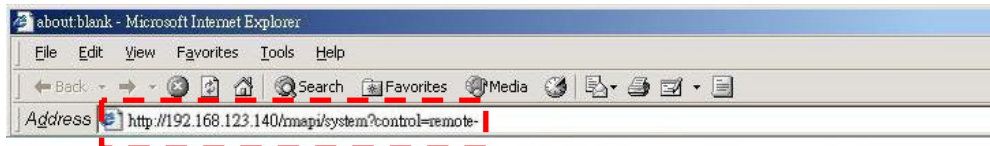
## 6-7 Remote Reboot DVR

This DVR system provides the function of rebooting DVR from remote IE browser. However, only “ Administrator” account has the right to do the remote reboot function.

**Step 1. Enable “ Remote Reboot” in “System” Setup menu of DVR. Please refer to Chapter 5-8-2.**

**Step 2. Open IE Browser and enter Remote Reboot command.**

**Remote Reboot command: <http://DVR ip/rmapi/system?control=remote-reboot>**



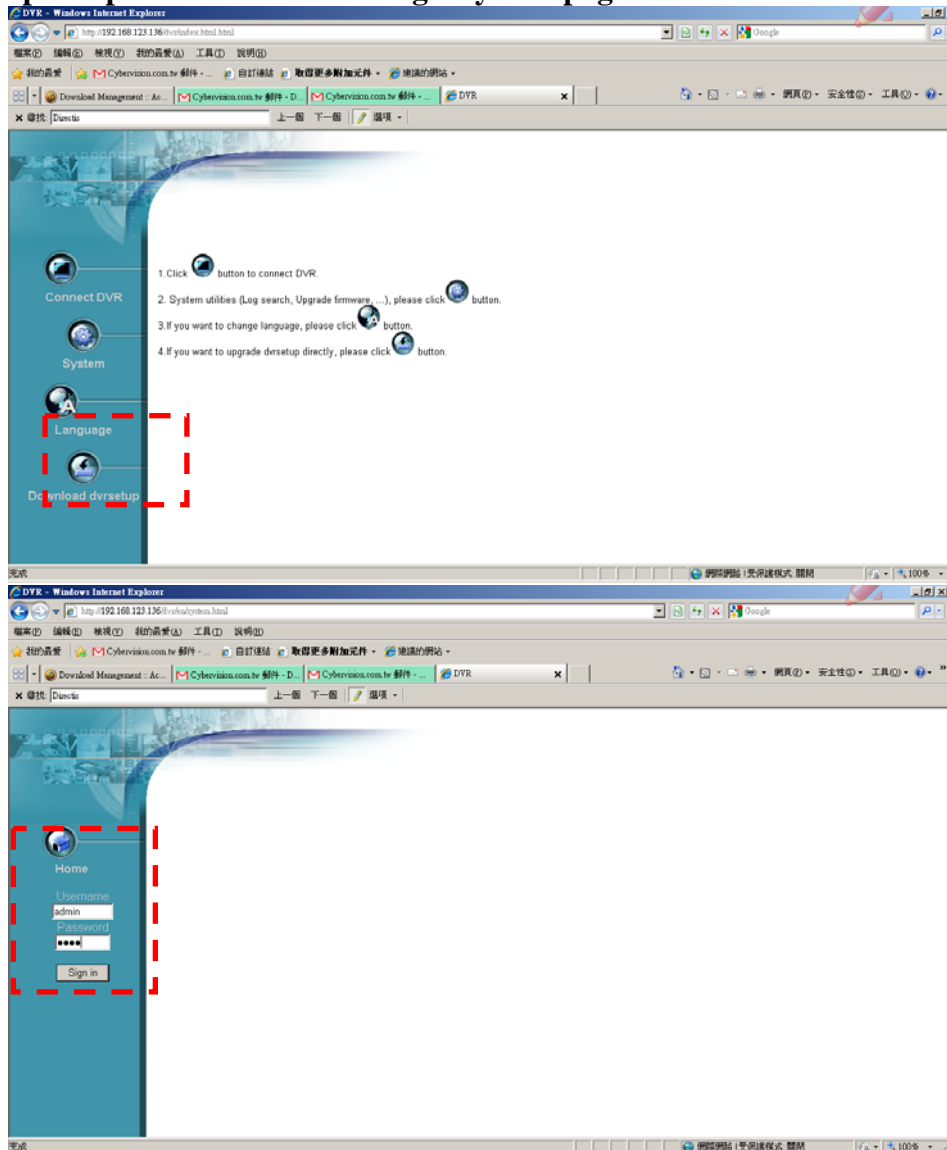
**Step 3. Enter “ User Account” and “ Password” .**

Only Administrator account has the authority to reboot DVR from remote side. If user account passes the authentication, DVR will start to reboot. If not or DVR reboot failed, it will return warning message.

## 6-8 Remote Upgrade DVR Firmware

This DVR supports the function of upgrading DVR firmware from remote IE browser. However, only “Administrator” account has the right to do the remote reboot function.

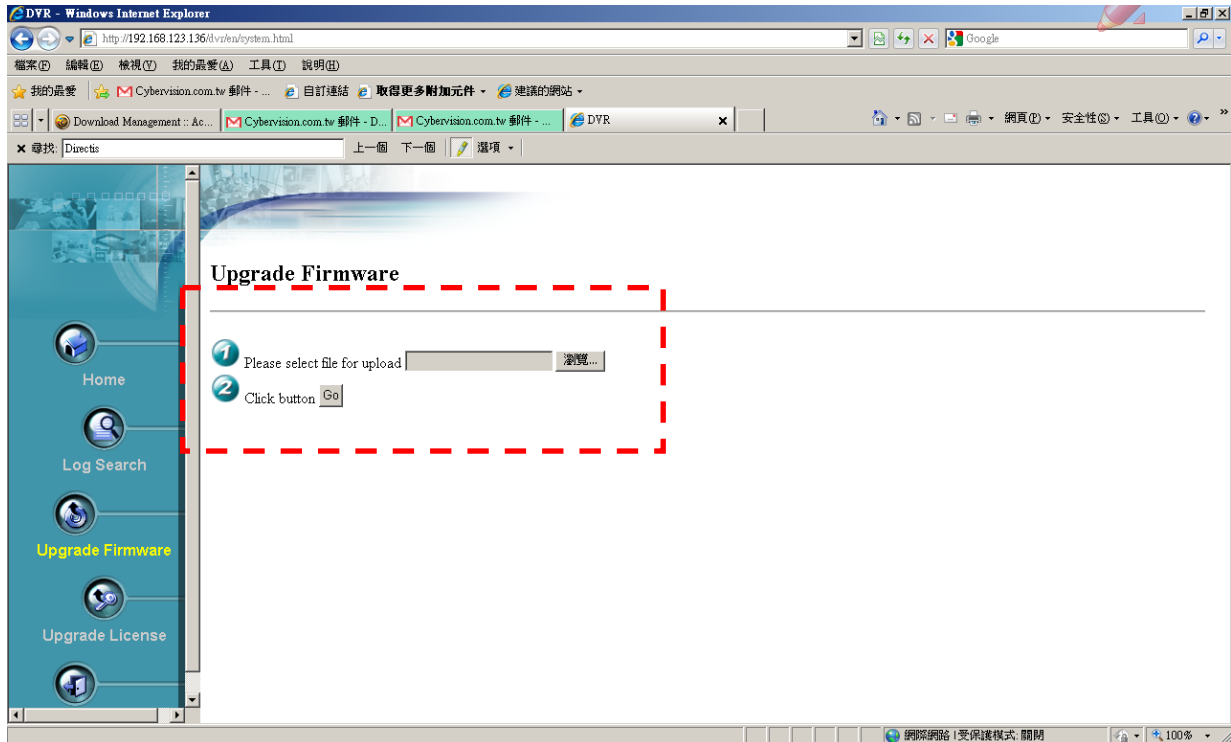
### Step 1. Open IE Browser and login system page



### Step 2 Click Upgrade Firmware and Select the file for upgrade and click “Go” button”

If file is successfully uploaded to the remote DVR, it will show the following message.

# Linux-Embedded DVR



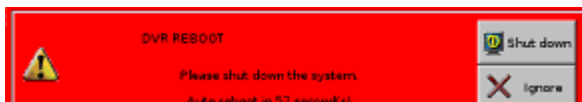
## DVR Firmware Upgrade Result

- Upgrade file name [dvrtools-cd-nv1608-0A02-5030A4-1.iso], size [78414.00 KB]
- Upgrade file is successfully uploaded to the DVR.
- DVR is starting to reboot and upgrade.

### Step 3: DVR Reboot

When proceeding DVR remote upgrade, there should be someone at the DVR side to monitor DVR remote upgrade process.

When file is successfully uploaded to the DVR at remote site, DVR will immediately pop up a message to show that it will start to reboot. You can click “Shut down” button or DVR will reboot itself after 60 seconds.

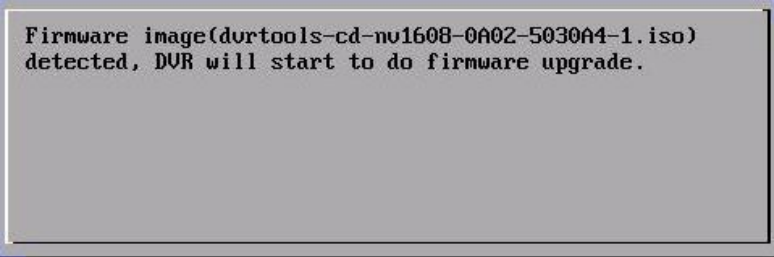


### Step 4: DVR Starts to Upgrade

After finishing SYSTEM/DVR rebooting, it will start to upgrade the new firmware and show the following message.

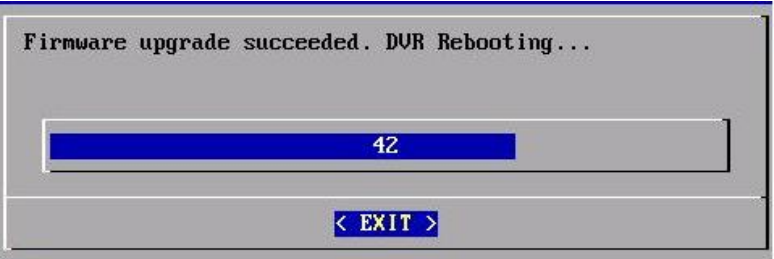


# Linux-Embedded DVR



```
Firmware image(durtools-cd-nv1608-0A02-5030A4-1.iso)
detected, DVR will start to do firmware upgrade.
```

After SYSTEM/DVR is successfully upgraded to the new firmware version, it will reboot again and SYSTEM/DVR will operate in a new firmware version.



```
Firmware upgrade succeeded. DVR Rebooting...
```

42

< EXIT >

If upgrade failed, you should use “DVR Tool” to do local SYSTEM/DVR upgrade.

## 6-9 Remote Monitor via 3G/GPRS/Wi-Fi

### Mobile Handsets

From V4.20, DVR also supports remote monitoring and remote PTZ control via two types of mobile handsets including Window mobile phone (Window Mobile V6.0 and above versions) and Symbian (Java) handsets. You can browse a live MJPEG image on your mobile handsets.

#### [Main Features]

- Access DVR image directly instead of using somebody's computer to transmit.
- Support MJPEG video format
- Support handsets with Window Mobile (V6.0 and above versions) and JAVA (Java MIDP 1.0 and MPDP 2.0) platform
- Support full screen display
- Support QQVGTA and QVGA display resolution
- Support channel switch
- Support snapshot and save function
- Support directional control to browser camera view
- Support camera PTZ control

### 6-9-1 Window Smartphone and Handsets

Once your Smartphone or handset runs on Window Mobile 6.0 and above versions, you can use Window Mobile Viewer to connect to DVRs to monitor DVR live images.

#### 6-9-1-1 Installing Window Mobile Viewer

- **Step 1:** Insert the CD with Mobile Viewer 1.0 program to the PC. Copy Mobile Viewer 1.0 to the hard disk of the PC.
- **Step 2:** Before start to copy Mobile Viewer 1.0 to your Smartphone, please make sure that your PC has been installed "ActiveSync" tool provided by Microsoft. If not, you can go to the Microsoft website "<http://www.microsoft.com/windowsmobile/en-us>

# Linux-Embedded DVR

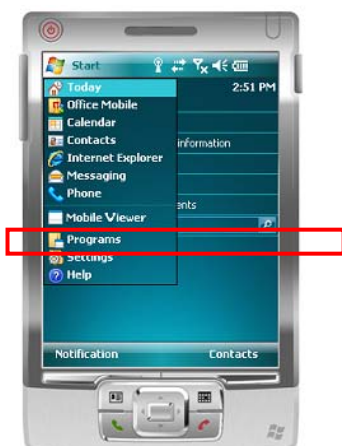
[/help/synchronize/device-synch.msp](#)” to download this free tool and install it to the PC. This tool is used to synchronize data transmission between PC and Smartphone.

- **Step 3:** Connect USB cable between PC and Smartphone and make sure that PC and Smartphone are synchronized.
- **Step 4:** Copy “Mobile Viewer 1.0” in your PC to your Smartphone.
- **Step5:** Execute “Mobile Viewer 1.0” in your Smartphone.

<b>!</b>	<b>Note</b> <ul style="list-style-type: none"><li>• Please make use that your Smartphone is installed Microsoft .Net framework 3.5 and above versions. If not, it will pop up an error message when you executing “Mobile Viewer 1.0” in your Smartphone. Please go to Microsoft website to download free version of “Microsoft .NET Framework 3.5 “ and install it to your PC. After installing this tool in your PC, please find “ “NETCFv35.wm.armv4i.cab*” in the program folder, copy and install it in your Smartphone. Furthermore, if your Smartphone runs in the language of Traditional Chinese, you should install another “NETCFv35.Messages.zh-CHT.cab*” in your Smartphone. This tool also can be found in the program folder after you install “Microsoft .NET Framework 3.5 “.</li></ul>
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## 6-9-1-2 Activate Mobile Viewer

In System menu, find the Mobile Viewer 1.0 program and click it to start to run Mobile Viewer 1.0 program.



# Linux-Embedded DVR

## 6-9-1-3 Connect to DVR, Hybrid DVR and NVR

Once you run Mobile Viewer 1.0 in your Smartphone, it will appear the screen as below. Enter IP address, Port number, Login username and password to connect to DVR, Hybrid DVR or NVR.



If your Smartphone successfully connects to DVR, Hybrid DVR or NVR, it will immediately show the live image as below.



- **Channel Switch**

Each time you can see one channel live image in the screen. You can switch the channel view by selecting the channel number in the field of channel option.

# Linux-Embedded DVR

- **PTZ Control**

If the channel you selected is PTZ camera, it will show PTZ control panel as below.



Zoom out



Zoom in



Left



Right



Up




Down

- **Setup:** Mobile View 1.0 supports two setup functions by clicking Setup  icon.

- Image Quality: Low, Middle and High

- Image Resolution: 160\*120 and 320\*240



- **Snapshot and Save function:** You can catch and save live image to your Smartphone by clicking Snapshot  icon.

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Set Picture Name





Select Folder



Select Location

- Full Screen: By clicking Full screen  icon, you can view live image in full screen. In the bottom left of full screen, you can see a “Hide”  icon. Click it to show the control buttons and click it again to hide the control buttons.



-  Hide Control
-  Back to original view
-  Snapshot & Save
-  Zoom out
-  Zoom in
-  Left
-  Right
-  Up
-  Down

## 6-9-2 Java Smartphone and Handsets

As long as your mobile phone supports JAVA MIDP 1.0 and 2.0, you can download this **Java Mobile browser** to your phone.

### [Java Mobile Browser]

There are two versions of **Java Mobile Browser** including **Commercial** and **Professional** version. **Commercial** version is free and tie-in with DVR system. **Professional** version is charged. Please confirm with your vender what version you get.

Function	Commercial Version	Professional Version
S/W Serial No	No	Yes
No of DVR connection	1	Unlimited
DVR authentication	Yes	Yes
Split Mode	Support	Support
Resolution selection	Yes	Yes
Quality selection	Yes	Yes
DDNS	Yes	Yes
Snapshot	No	Yes
Channel Switch	No	Yes
Remote PTZ Control	No	Yes
2.5G Transmit Speed	1~3 fps	3~4fps
3G Transmit Speed	1~2 fps	3~10fps

### 6-9-2-1 Download Java Mobile Browser

Before you start to use “**Java Mobile Browser**” at first time, you should download it from WAP Gateway to install it in your mobile phone. Because the application of “**Java Mobile Browser**” resided in the WAP Gateway and your mobile phone communicate with WAP Gateway via WAP protocol, you should use the WAP service to connect to the WAP Gateway. Before linking to the WAP Gateway, please refer to the user manual of your mobile phone to operate the WAP service.

- **Step 1: Link to the WAP Gateway**

Before using **Java Mobile Browser**, you should download it from WAP Gateway and install

# Linux-Embedded DVR

it in your mobile phone.

- ✓ Please use your mobile handset to connect to the WAP Gateway (wap.mo-soft.com/wap)
- ✓ Select “**Language**”



- ✓ Click “**Download**”.



## ● Step 2: Select system & version

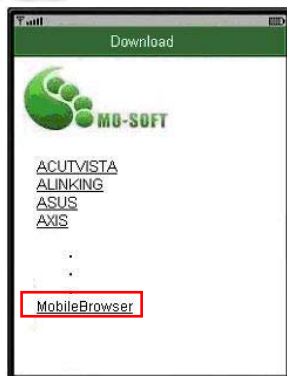
- ✓ Select “**Mobile Surveillance system**”



- ✓ Select “**Vender**”



# Linux-Embedded DVR



- ✓ Select “**Version**”

Select the Version you want to download. If you want to download “ **Professional**” version, please select “ **Full Version**”. However, “ **Full Version**” should get the license in advance before downloading. Please refer to Chapter 6-9-2-3 “Purchase a Serial No on line” .If you want to download “ Commercial” version, please just select “ **Free Version**”.



- ✓ Select **Java MIDP Version of your Mobile Phone supported**

If you select “Full version”, it will ask you to select the Java MIDP (Mobile Information Device Protocol) version your mobile phone support. If you select “Free version”, it won’t pop up the selection. Most of 3G mobile phones support MIDP 2.0 while 2G mobile phones only support MIDP 1.0. Please refer your mobile phone spec and select the correct version.

# Linux-Embedded DVR



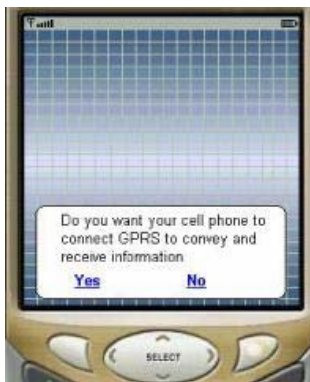
Then, the application of **Mobile Browser** will start to download to your mobile phone and install in your mobile phone.

## 6-9-2-2 Start to use Java Mobile Browser

- **Begin Mobile Browser**

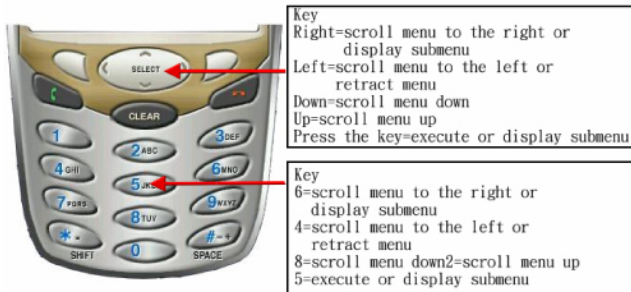
After you install **Java Mobile Browser** application, the icon of this application will exist in your mobile phone. Click the icon to start the **Java Mobile Browser**.

When you start **Java Mobile Browser**, it will ask you if you agree to convey or receive information. Please click “Yes” to enter the system.



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- **Control Key**

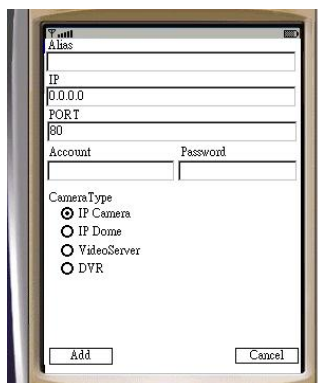


- **Main Menu**

- ✓ **Camera:**

- **Add:** this function let you to add new DVRs for mobile surveillance.

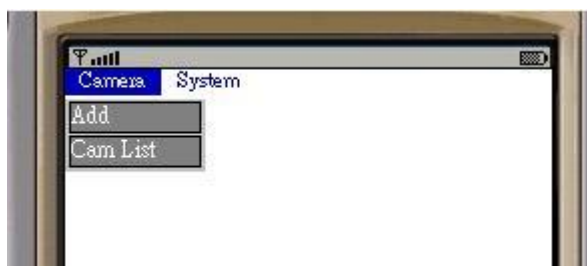
When you click  , it will show the below screen to ask you to enter the related DVR connection information including “DVR Alias Name “, “IP Address”, “Port”, “Username” and “Password”. In “**Camera Type**” column, please tick “**DVR**” and then click “Add” to finish the configuration. Then, this DVR will be shown in the “Camera List”.



- **Camera List:** List the DVRs you can access.

- ✓ **System:**

- **Language:** We provide English and Traditional Chinese version.
- **Quit:** Choose “Quit” to finish the system you are using.



# Linux-Embedded DVR

## ● Camera Setting

After adding a new DVR, you can find this DVR in Cam List. By clicking it, below menu will pop up for your selection.



- ✓ **Alias:** You can change the name of DVR.
- ✓ **Live Vision:** Show you the DVR live image you want.
- ✓ **Setting:** Set up the DVR configuration or remove the DVR.

Serial No	<input type="text"/>
IP	<input type="text"/>
Port	<input type="text"/>
DDNS	<input type="text"/>
Account	<input type="text"/>
Password	<input type="text"/>

Commercial version does not need to provide with Serial no. If you install Professional version, please enter serial No you bought.

- ✓ **Next:** Switch to another DVR to control.
- ✓ **Move:** You can move the DVR which you already chosen and move it to a certain place.
- ✓ **Main Menu:** Back to the Main Menu.

## ● Operation of Live Monitor (Live Vision)

When you click “Live Vision”, it will start the remote monitor screen as below picture.



- ✓ **Operation menu:**
  - **PTZ:** You can control the PTZ via your mobile handset. This Mobile Browser provides you with several control function including “ Moving up, Down, Left,

# Linux-Embedded DVR

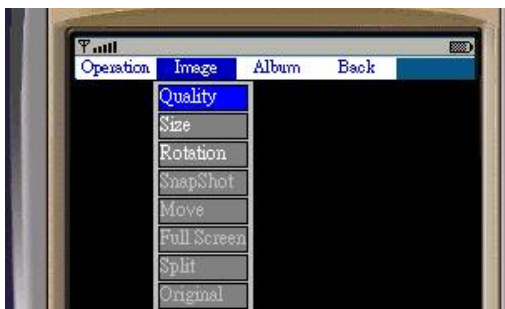
Right, Enlarging and Shrinking.



- **Preset:** Set a fixed position point.
- **Channel:** Switch the channel you want to monitor.
- **Split:** Select the split mod you want to monitor in.

## ✓ Image:

- **Quality:** You can adjust the image quality. There are three ranges of image quality including **Poor, Middle and High**.



- **Size:** Adjust image size including “Small” Middle” and “Large”
- **Rotation:** Rotate the Image.
- **Snapshot:** Capture a single image.
- **Move:** If the image you are monitoring is larger than the screen of your mobile phone, you can use this function to move the picture.



If the image you are monitoring is larger than the screen of your mobile phone, a moving frame will automatically pop up. Click “**Move**” and use direction key to adjust the monitor screen.

- **Full Screen:** You can use **Full screen** to adjust the image to fit the size of your phone.
- **Split:** This function provides you to monitor the previous images in the same screen. The picture on the left or upper left is the latest one. There are

# Linux-Embedded DVR

two-splits mode and four- splits mode.



Different Kinds of Split mode

- **Original:** Make the image back to the original size.
- ✓ **Album:** You can see the picture or image you save in the **Album**.
- ✓ **Back:** Back to the “**Main Menu**”.

## 6-9-2-3 Purchase a Serial No on line

### ● Step 1: Link to the Mo-Soft Shop

If you want to have a **Professional** version, you should purchase a serial No in the **Mo-soft Shop** of which **web address is www.mo-soft.com** before you start to download the **Web Browser** to your mobile phone. Click the button of “**Shop**”. If you just want to use **Commercial** version, please skip this **Section** and jump to the Section of **Download Mobile Browser**.



→ Purchase Serial NO

### ● Link to the purchase Page

Then, it will list below table for your selection. Please select “**MobileBrowser**” and click “**Buy**”.

<a href="#">MobileBrowser</a>	DVR	Price:US\$39.99 Member:US\$49.99	<b>BUY</b>
<a href="#">MOBOTIX</a>	M10	Price:US\$69.99 Member:US\$29.99	<b>BUY</b>
<a href="#">ORITE</a>	IC301	Price:US\$39.99 Member:US\$19.99	<b>BUY</b>

→ Click

### ● Enter the DVR Mac Address

Please check your DVR Mac Address and enter it in the empty column. Then, click “**Next**”.

# Linux-Embedded DVR

Please ENTER your MAC Address:  
  
Please CONFIRM your MAC Address:

You can query your DVR Mac Address by making the command of [http://DVR\\_IP/rmapi/info/productinfo.php](http://DVR_IP/rmapi/info/productinfo.php) in your IE explorer. The underline of “ DVR IP” in this command, please enter your DVR IP address. For example, if your DVR IP address is 192.168.123.55. This command will be <http://192.168.123.55/rmapi/info/productinfo.php>

## ● Finish

It will summarize all of the product information and please click “Paypal” if the information is correct.

Product Information	
Manufacture	MobileBrowser
Camera Type	DVR
MAC Address	192168123321
Price	US\$ 39.99
Channel	16
PTZ	none



After you finish paying by PayPal, you will receive a Serial number in your e-mail box sent by Mo-Soft. You can use this Serial number to download the **Java Mobile Browser** on your mobile phone.

<b>!</b>	<p><b>Note</b></p> <p>If you can't access the live image via your mobile phone, please check the items as below.</p> <ul style="list-style-type: none"><li>● You should set Fixed IP instead of Dynamic IP in DVR network setting.</li><li>● Please check if your mobile phone can connect to network</li><li>● Please check if DVR remote monitor is enabled.</li><li>● Please check if the version of your DVR is V4.20 and above.</li><li>● Please check if the network setting of your DVR is correct so that your DVR can be accessed through Internet. To make sure this point, you can connect DVR through IE browser from your PC and enter DVR IP address to see if DVR can be accessed through Internet.</li><li>● Please check if your mobile phone supports MIDP 1.0 or 2.0.</li></ul>
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## 7. Appendix

### A. Hardware Compatible List

#### Minimum Hardware Requirement

	HV3000				HV5000		SV2000
Channels	4	8	12	16	8	16	16
RAM	1G		2G		1G	2G	1G
CPU	Intel E2200 2.2G						
Power Supply	350 Watt		420 Watt		420 Watt		350 Watt

	SV1000	
Channels	4	8
RAM	256M	512M
CPU	Intel E2200 2.2G	

	SV/SV+			
Channels	4	8	12	16
RAM	256M	512M		
CPU	Intel E2200 2.2G			

<b>!</b>	<ol style="list-style-type: none"> <li>1. To ensure reliable DVR system, DVR will automatically detect system DRAM capacity. If DVR installs 1G DRAM, it will provide max 16 channels playback function. If DVR just installs 512MB DRAM or less, only four channels playback function will be provided.</li> <li>2. To enhance the DVR performance, please enter BIOS menu to load optimized setup when you install the DVR.</li> </ol>
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# Linux-Embedded DVR

## M/B Compatible List

Brand Name	Model	Chipset	# of PCI slot
Gigabyte	GA-EP45-UDP3P	Intel P45/ICH10R	2
Gigabyte	GA-P43-ES3G	IntelP43/ICH10	5
Gigabyte	GA-P31-S3G	IntelP31/ICH7	3
Gigabyte	GA-P31-ES3G	IntelP31/ICH7	3
Gigabyte	GA-G33-DS3R	IntelG33/ICH9	3
Gigabyte	GA-EP35-DS3L	IntelP35/ICH9	3
Gigabyte	GA-P35-S3G	Intel P35/ICH9	5
Gigabyte	GA-EG31M-S2	Intel G31/ICH7	2
Gigabyte	GA-945GCM-S2L	Intel 945/Ich7	2
ASUS	P5KPL-CM	Intel G31/ICH7	2
ASUS	P5QL-E	Intel P41/ICH10R	3
ASUS	P5GC-VM	Intel 945/ICH7	3
MSI	P43NEO3-F	Intel P43/ICH10	4
FOXCONN	G31AX-K	Intel G31/ICH7	5
FOXCONN	G31MX-K	Intel G31/ICH7	2



After installing the DVR, please enter the motherboard "BIOS" to have the settings as below to ensure SATA HDD work well,

1. If the chipset of South Bridge on Motherboard is ICH9, please select "**AHCI**" in the option of "**SATA RAID/AHCI Mode**" and "**Enable**" the option of "**SATA Port0~3 Native Mode**" or "**SATA Port0~1 Native Mode**" under the menu of "**Integrated Peripherals**".
2. If the chipset of South Bridge on Motherboard is ICH7, please select "**Enhance Mode**" in the option of "**On-Chip SATA Mode**" under the menu of "**Integrated Peripherals**".

# Linux-Embedded DVR

## VGA Card

Brand Name	Model
ASUS	N6200
ASUS	EN6600LE
Gigabyte	GV-NX84G256HE
Gigabyte	GV-NX73G158D
Gigabyte	GV-NX86T256H
Gigabyte	GV-N94T-512H
Gigabyte	GV-N94T-512I

# Linux-Embedded DVR

## RAID Support

Brand	RAID spec	Interface
ProWare	DataFree 7502 Hardware RAID Level 1	IDE to IDE Ultra DMA133 drives
Proware	SB-3160SS series Hardware RAID Level 0,1,3,5	SCSI SATA HDD
Proware	DP-503AA Hardware RAID Level 1,3,5,6,0+1	SATA HDD to SATA
Accusys	ACS-75200 Hardware RAID Level 1	SATA HDD to SATA
Accusys	ACS-7500 Hardware RAID Level 1	IDE to IDE Ultra DMA100 drives
Areca	ARC-5010 Hardware RAID Level 0,1,3,5	IDE HDD to IDE or SATA
Areca	ARC-5030 Hardware RAID Level 0,1,3,5	SATA HDD to IDE or SATA

## Mobile Surveillance Handsets-Window Mobile

- Support Smartphones & PDAs running on Window Mobile 6.0 and above versions

## Mobile Surveillance Handsets-Symbian/Java MIDP 1.0 & 2.0

Vender	Handset Models
Motorola	E770/E1070/E1000/V975/A760/A768/A780/E680/E680i/V3/V3x/T720/A388c
Nokia	N70/N90/7650/3650/7210/7250/6610/6100/6108/3300/N93/N80/E61/E70
Samsung	SGH-Z548
Sony Ericsson	Z800i/K608i/K500i/K700i/S700i/Z800/P800/P900/P910/K600i/M600i
BenQ	S80
Winll	F868/F860/F520/F320

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## PTZ Model

Model
Lilin
Pelco-D
Pelco-P
Panasonic
Sensormatic
DongHwa
TOA
Kalatel
SANYO
Hi Sharp
Samsung
GTICO(Small)
GTICO(big)
YoKo
Dynacolor
Elmo
Eye View
Messoa
Elbex
DongHwa

## DVD/CD-RW Burner

DVR Burner	Disk Type Support	Remarks
Pioneer	*DVD+R *DVD-R *DVD-RW *CD-R *CD-RW	Not support DVD+R/RW

# Linux-Embedded DVR

Asus	*DVD+R *DVD-R *DVD-RW *CD-R *CD-RW	Not support DVD+RW
NEC	*DVD+R *DVD-R *DVD-RW *CD-R *CD-RW	Not support DVD+R/RW
Nu	*DVD+R *DVD-R *DVD-RW *CD-R *CD-RW	Not support DVD+RW

# Linux-Embedded DVR

## IP Camera/Video Server Support

Solutions	Axis	Panasonic	Vivotek
IP Cam	AXIS 2XX Series	WV-NS Series, WV-NF Series, WV-NP Series, WV-NW Series	IP6112, IP6117, IP7138, IP7139, IP7142, IP7151, IP7152, IZ7151, FD6111V, FD6121V, FD6112V, FD6122V, FD7131, SD6112V, SD6122V, SD7151
PTZ Camera			PZ7151, PZ7152
Video Server + Analog Camera			VS7100
Video Server + PTZ camera			VS7100+Pelco D, Dynacolor, Lilin PTZ camera

Solutions	A-MTK	Planet
IP Cam	AM3519M, AM3811M, AM3610, AM363M, AM311M, AM312M, AM3110, AM3120, AM3512, AM3532, AM3534, AM3515, AM3516, AM3010, AM3012, AM3811, AM3810, AM3013, AM3015, AM3517, AM3511, AM3531,	ICA310, ICA350, ICA312, ICA108, ICA108W, ICA530, ICA525, ICA312 V.2 ICA120
PTZ Camera	AAM3210, AM3220, AM3230, AM3910, AM3911, AM323M	ICA601, ICA651, ICA230, ICA-M230
Video Server + Analog Camera	AM6111, AM6121	IVS110
Video Server + PTZ camera	Pelco D, Pelco , A-MTK, EPTZ, VC, K-ZM23E1N	Pelco D, Pelco , EPTZ, VC, K-ZM23E1N

## B. FAQ

1. **Q:** I have set the recording mode as motion sensor recording. But why the DVR still records a lot of video that has no motion at all?

**A:**

- (1) The digital recording system is very sensitive. It can detect the tiniest motion that human eyes cannot perceive. You can lower the sensitivity setting in camera setup menu.
- (2) Flickering fluorescent lights (when traditional 120 Hz ballast are used) or TV (or computer) screen can be the motion source. In this case, adjust the motion detection area so that these flicking sources will not be detected. It is recommended not to align the camera directly at fluorescent lights, TV, or computer screens. The use of better-quality fluorescent lights (with electronic ballast), monitors, and the cameras can be considered.
- (3) When cameras are installed, please make sure the quality of cables, connections, and workmanship. Sometimes interference could cause the image unstable. Avoid placing the system close to a compressor (fridge), or to a motor (washing machine) that might cause magnetic interference.

2. **Q:** What will happen if there is a power outage (cut)? Do I have to do anything?

**A:** If a power outage occurs, the last file will not be closed properly. Therefore, up to 10 minutes of data might be lost. It is recommend connecting the system to an Uninterruptible Power Supply (UPS). This will help to avoid shortening the system life span and partial data loss caused by the instability of power supply.

When the power returns, the system will automatically re-boot, restore data and go back to the normal operation in approx. 1 minute.

3. **Q:** Why the remote monitor not working?

**A:**

- (1) Using the windows command PING to check if the network connection is ok.
- (2) Turn the proxy setting off.
- (3) The remote PC needs to install the DVR client when the first time you want to connect to DVR from remote IE. Make sure you have installed the DVR Client

# Linux-Embedded DVR

(dvrsetup program) with correct version. If DVR with new version upgraded, you should also upgrade dvrsetup.

- (4) Check security setting in IE browser is not too restricted. The active X option must be enabled.

4. **Q:** How to check the log file of the DVR from remote site?

**A:** The log file can be seen from remote PC using IE browser. From V5.01, DVR provides Log viewer in IE client for user to query DVR log from remote side.

5. **Q:** How to capture the snapshot of the whole screen?

**A:** It can be done from remote PC using IE browser. Suppose the DVR IP address is 192.168.123.12, type <http://192.168.123.12/rmapi/misc/screen-snapshot> on a remote PC to see the picture.



## C. Internet Connection

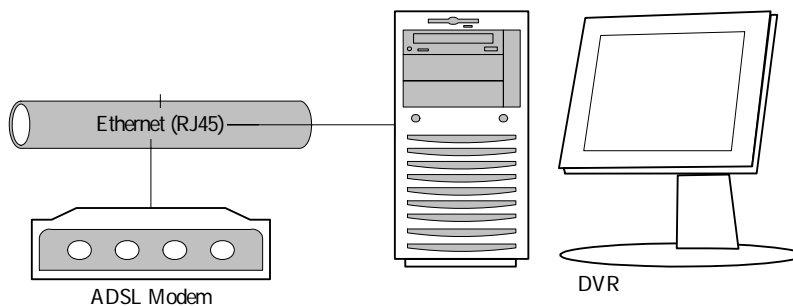
### D-1: IP address is used by one DVR only

Assume the static IP address you get from ISP is 211.23.87.163.

When

- i. The IP address is not used by any other devices, and
- ii. ISP does not require user name and password to connect,

You can connect like the following figure:



In this case, just follow the instructions in section 3-6-7 and section 4-2 to make the DVR on Internet.

User from Internet can use <http://211.23.87.163> to connect to the DVR.

### D-2: IP address is shared by more than one device

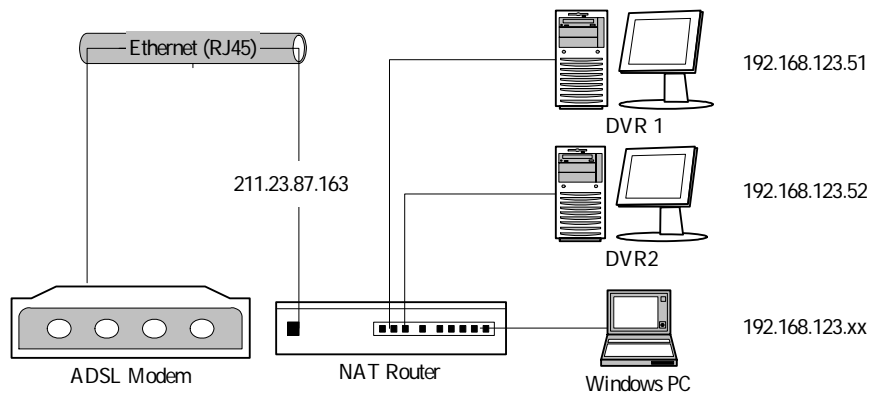
Assume the static IP address you get from ISP is 211.23.87.163.

When

- (1) The IP address is shared by more than one devices, or
- (2) ISP requires user name and password to connect

Please refer to following figure:

# Linux-Embedded DVR



In this case, you will need an NAT router to connect to the high-speed modem. Please refer to the user manual of your NAT router to translate DVR1 (192.168.123.51 port 80) to a port of 211.23.87.163, for example, port 8001. Similarly, translate DVR2 (192.168.123.52 port 80) to another port of 211.23.87.163, say, port 8002. You also need to set the user name and password on this router in order to successfully connect to ISP. Follow the instructions in section 3-6-7 to set the IP address of DVR1 as 192.168.123.51.

Users from Internet can now use <http://211.23.87.163:8001> to connect to DVR1 and use <http://211.23.87.163:8002> to connect to DVR2.

## D. Maintenance

Avoid placing the system in a high temperature or a high humidity environment and also keep away from the place with frequent vibrations. Operate the system under stable voltage. If possible, operate the system with a UPS (Uninterruptible Power Supply)

## E. Customer Service

For technical questions, please contact our Technical Support Team at 800-379-7226 \*2. Our technical support representatives are available to support you 24/7.