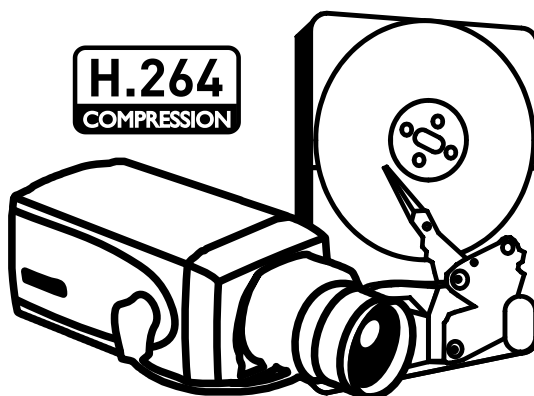


4 Channel H.264 Stand-Alone DVR

User's Manual

- H.264 Stand-Alone DVR
- Real Time Recording System
- Superior Video Quality
- S-ATA Hard Disc Drive
- USB Mouse & Backup
- Advanced Network Features



Preface

We welcome you as a new user of the world's best digital video recorder (DVR), and the leading Digital Video Surveillance System. For effective usage, please read this manual carefully. For future reference, please keep this manual close to hand.

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Authentication

CE, FCC, MIC

Trademark

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Limited Warranty

- The manufacturer, importer and agent shall not be responsible for accidental damage (including injury) and other damage caused by inappropriate use or operation of this product.
- The information in this manual is prepared based on the current specifications for the product. The manufacturer is currently adding new functions and will continue to upgrade the product with new technology. All specifications may be changed without notice to individual users.

Cautions

We strongly recommend that users read all safety cautions carefully before operating the product, to operate the product appropriately.

Since the indicated cautions contain critical safety information, they must be fully complied with. The cautions are categorized into Danger, Warning, Caution and Important.

 Danger	Risk of death or serious injury. This is the highest priority danger warning.
 Warning	Risk of serious or lesser degree of injury. May also cause damage to the product or to property.
 Caution	Risk of minor injury or damage.
 Important	Requirements or limitations regarding operation. Users are recommended to read the relevant details carefully so as to operate the product properly and without harm.

The above cautions indicate the degree of damage that may occur due to inappropriate use of the system.



Danger

Non-compliance may result in death or serious injury.
The highest degree of urgency.

- RISK OF EXPLOSION IF BATTERY IS REPLACED BY INCORRECT TYPE. DISPOSE OF USED BATTERY ACCORDING TO THE INSTRUCTIONS.
- THIS EQUIPMENT IS INDOOR USE AND ALL THE COMMUNICATION WIRINGS ARE LIMITED TO INSIDE OF THE BUILDING.
- Please connect the power cord only to the type of AC outlet indicated in the manual or product specification. If connected to other types of power outlet, fire and electric shock may result.
- Do not expose the product to moisture and dampness. Doing so may result in fire and electric shock.
- Do not place heavy objects on top of the power cord. Damage to the power cord may result in fire and electric shock.
- Do not place containers with liquid or small metal objects on top of the product. Liquid or small metal objects getting into the unit may lead to fire and electric shock.
- Do not score, bend, twist, pull or heat the power cord. Damage to the power cord may lead to fire and electric shock.
- Do not remove the top casing of the product. Doing so may result in electric shock. If internal examination and maintenance are deemed necessary, contact the authorized system vendors or installers.
- Do not modify the product in any way. Doing so may lead to fire and electric shock.
- In case of lightning, immediately turn off the power switch and remove the power cord from the power outlet. Failure to do so may result in fire and electric shock.
- Please use only the power cord supplied with the product. Use of other power cords may result in fire and electric shock.
- In case of smoke, smell or noise, immediately turn off the power switch and remove the power cord from the power outlet. Continued operation of the product may result in fire and electric shock. Request a maintenance service from the authorized system vendors or installers.
- If the product is dropped or damaged, turn off the power switch and remove the power cord from the power outlet. Continued operation of the product may result in fire and electric shock. Users should request a maintenance service from the authorized system vendors or installers.
- Do not touch the product with wet hands. Doing so may result in electric shock.




Warning


Non-compliance may result in a serious or lesser degree of injury.
It may also cause damage to the product or to property.

- Do not leave the power cord or other cables in passageways. Passers-by may trip and fall.
- Avoid contact with water or beverages. Contact with water or beverages may result in damage that cannot be repaired.
- In case of lightning, immediately turn off the power switch and remove the power cord from the power outlet. The product may otherwise be damaged.

- Excessive current from the product and the camera may result in an electric shock. Connect the power cord to an external device only when the products themselves are disconnected from their power supply.

 Caution	Non-compliance may result in minor injury or damage.
--	--

- If a foreign substance is stuck to the product, remove it using a soft cloth or tissue. Do not use chemical agents (thinner, solvent, etc.) to remove the substance.
- Do not operate or store the product in the following places.
 - *An area that is either too cold or too hot*
 - *An area of high humidity, or in front of an air-conditioner, or in places subject to sudden temperature changes*
 - *An area where there is excessive dust*
 - *Areas where heat from the product cannot be emitted through both of the product's side ventilation openings*
- Do not place credit cards/telephone cards/bank account books/tickets and other objects with magnetic properties near the product.
- Static electricity may cause damage to the internal parts of the product. Please remove static electricity from your body before touching the rear panel and internal electronic parts of the product.
- If this product is damaged beyond repair or reaches its maximum service life, dispose of it in compliance with local laws and regulations regarding the disposal of lead and plastic waste.

 Important	Denotes requirements and limitations in operation. Users are recommended to read the relevant details carefully so as to operate the product properly and without harm.
--	---

- The product may not work properly if the power source is unstable or and if electric shock occurs. Make sure the correct rated power is available.
- The product is designed to be proof against electric power failures; however, damage may occur as a result of power failure. Current data may be damaged or data might not be recorded. Make sure to use an Uninterruptible Power Supply (UPS).
- Since the product is designed to record video data on the hard disk, an error in the hard disk or other miscellaneous errors might prevent the product from recording properly. Periodic maintenance is required for proper operation of the product.
- The product is designed for users to configure their own interface. However a user configuration error could lead to operation malfunction. This product should be set up by certified installers only.
- Since the product is connected - and tightly coupled - to exterior accessories (camera, sensor, LAN, Hard Disk, etc.), there is a risk of malfunction from external causes. Ensure periodic maintenance by the certified installers.
- Use the rack mounting handle provided with the product for installation.
- In this product, 1 Kbyte equals 1,024 bytes, 1 Mbyte equals 1,024,000 bytes and 1 Gbyte equals 1,024,000,000 bytes.

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Chapter 1. Introduction

1. The System

Introducing the most reliable 4 channel DVR with high image quality. HD04 provides better compression than current other MPEG4 DVR and best image quality, smallest packet size, DVD quality video, transmits video more efficiently over networks than any of previous technologies.

The DVR guarantees the most reliable security system ever introduced in the market. The DVR brings you the most reliable and fully featured surveillance technology you have ever experienced. The latest official H.264 video compression standard will lead you the new technology in CCTV.

2. General Features

- Embedded Linux System to Guarantee Maximum Reliability
- H.264 Video Compression Standard
- Max.120(NTSC) / 100(PAL) ips Recording
- Supports D1 / Half D1 / CIF Resolution
- Multi Operational System: Display, Recording, Playback, Networking, Backup
- Dedicated DB System for Stability
- Offers Lower Bit Rates and Better Picture Quality
- Easy One Touch Backup
- Backup, Upgrade, Setup via USB and Network
- Superior Image Quality of H.264 in Low Bandwidth
- Interactive Setup for Easy Remote Control
- 4 Cameras In / 1 Audio In
- Supports SATA HDD

3. Specification

Video

- Signal Format : NTSC or PAL (Auto Detection)
- Video Inputs : 4 Composite, 4 Loop though (1Vp-p, Auto-Terminating, 75 Ohms)
- Monitor Outputs : 1 Composite (1Vp-p, 75 Ohms), 1 VGA
- Video Resolution : 704 x 480 (NTSC) : 120 ips / 704 x 576 (PAL) : 100 ips
- Record / Playback : Simplex Mode 352x240 (NTSC) :120 ips / 352x288 (PAL):100ips
Duplex Mode 352 x 240 (NTSC) : 60 ips / 352 x 288 (PAL) : 50 ips

Inputs / Outputs

- Alarm Input : 4 Programmable NC/NO to GND
- Alarm Output : 2 TTL
- Network : 10/100 Mbps Ethernet, RJ45
- Audio Input : 1 RCA (Line-In Level)
- Audio Output : 1 RCA (Line-Out Level)
- Alarms / RS485 : Terminal Block
- USB Ports : USB x 2

STORAGE

- Primary Storage : SATA HDD x 1
- Backup Storage : USB HDD, USB Flash Media

APPROVALS

- FCC, CEE, MIC

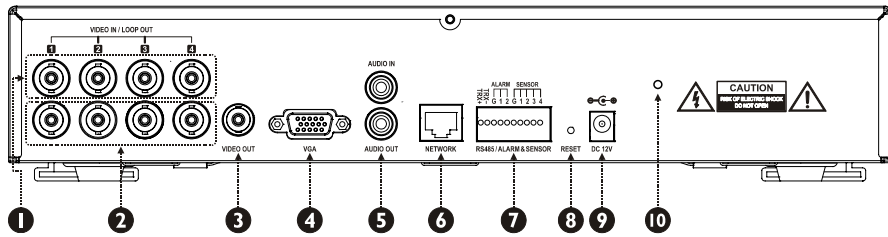
4. Package Contents

The following components are included in the product :

DVR Unit	
DC Adaptor	
Power Cord	
CD (User's Manual & Network S/W)	
Remote Controller	
Quick Guide	
HDD fastening screws & Anti-Shock pads	
Wire Saddle	

5. System Installation

The rear panel of the DVR comprises the following:



- ❶ Video Input port : BNC
- ❷ Video Loop Through : BNC
- ❸ Video Out : BNC
- ❹ VGA Out : D-SUB15
- ❺ Audio In / Audio Out : RCA

The "Audio In" should be from a pre-amplified source, not directly from a microphone.

- ❻ Network : RJ-45

Connect a UTP-CAT5 cable with an RJ-45 to the DVR connector.

- ❼ Terminal Blocks

RS-485 : For control the PTZ cameras and external control keyboard.

Alarm Out : This terminal blocks connect external alarms to the DVR.

Sensor In : This terminal connects external sensors to the DVR.

- ❽ Reset

This reset switch will return all the settings to the original factory settings.

- ❾ DC Power Jack

DC12V / 3.33A

- ❿ Wire Saddle Hole

You can insert a wire saddle to this hole for clamping the adaptor cable.



6. Cautions

- Avoid installing the product where there are direct rays or it is hot by locating near from heat generator. (May cause fire)
- Do not put vase, flowerpot, cup, cosmetics, drug, and anything the contain water on product. (May cause fire or electric shock, and it may injure people by falling)
- Do not insert or drop any metal object (coin, hair pin) or flammable object (match, paper) into air hole. (May cause fire or electric shock)
- Do not put any heavy object on it. (May injure people by being fell or destroyed.)
- Put power plug surely not to be moved. (If not, this may cause fire.)
- Unplug power plug and antenna when there are thunders and lightening. (May cause fire.)
- For cleaning the product, wipe surface with dry towel. Using chemical agent or cleaner may change the color and unpeel paint.
- Do not put several plugs at same time. (May cause electric shock.) If there is smoke or strange smell, stop operation. In this case, turn the power off and unplug it, and then contact our service center. (If you keep using it, this may cause fire or electric shock.)
- Do not unplug by pulling cord. (If cord is damaged, it may cause fire or electric shock.)
- Do not plug or unplug with wet hands. (May cause electric shock.)
- Keep the power cord untwisted. (May cause fire or electric shock.)
- Use proper adapter. (Using too much electric power may cause fire or electric shock.)
- Do not install it at where exposed to rain and wind and water drop. (May cause fire, electric shock and transformation.)
- Keep away from fire. (May cause fire.)
- Do not disassemble or remodel on your own. (May cause malfunction or electric shock.)
- Do not put next to flammable materials like flammable spray. (May cause fire.)
- Do not install it at a place with too much dirt. (May cause fire.)
- Do not install it on unstable places like shaking table and inclined place or shaking place. (May injure users by falling down or being upside down.)
- Do not put an heavy object on power cord or avoid it from being pressed by the device. (May cause fire or electric shock.)
- In case of using extension cord, do not use several devices at same time. (May cause fire with abnormal heating of extension.)
- When there are dirt on power plug pin or power outlet, clean it nicely. (May cause fire.)
- Do not damage on power cord or plug, and bend or twist or pull too much, and put it between other objects or heat. If power outlet insertion part is not tight, do not use it. (May cause fire or electric shock.)
- Do not drop or give a shock to the product. (May injure people or cause malfunction.)
- Do not touch power adaptor or signal controller. (May cause electric shock.)
- Do not put any object too close to block cooling fan. (May cause fire.)
- In case of exchanging batteries with improper type, there might be danger of explosion.
- For used batteries, throw away separately from other garbage.
- When you take out batteries, avoid children from eating them by mistake. Keep them away from children. (If a child ate them, contact a doctor right away.)

Chapter 2. Using DVR

1. Basic Operation

1-1. Front Panel & Remote Controller

USB Port : USB ports on the front panel provides following functions:

- i. Back Up files using USB Flash Memory or USB-IDE HDD
- ii. Control the system using USB Mouse
- iii. Save/Load the system settings using USB Flash Memory.



HDD LED : LED will be on when data is being recorded or searched in HDD.

NETWORK LED : LED will be on when the system is being connected via network.

ALARM LED : LED will be on when the alarm is being activated.

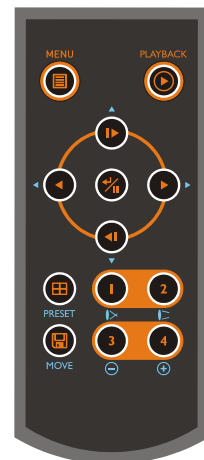
MENU : Press the 'Menu' button to enter/exit the setup screen.

PLAYBACK : Press the 'Playback' button to enter playback mode.

If press the 'Playback' button during playback, it will pop up the playback menu.

BACKUP / MOVE : Press the 'Backup/Move' button to enter back up menu. But the button can be also used to display menu to load PTZ presets under PTZ mode.

DISPLAY / PRESET : Press the 'Display/Preset' button to change display mode from Quad to Sequence or Sequence to Quad. But the button can be also used to display menu to save PTZ preset under PTZ mode.



1 / I> : Display Camera no.1 / Focus on far distance under PTZ mode.

2 / I> : Display Camera no.2 / Focus on near distance under PTZ mode.

3 / ⊖ : Display Camera no.3 / Zoom In under PTZ mode.

4 / ⊕ : Display Camera no.4 / Zoom Out under PTZ mode.

I> : Move forward by one frame under Pause. Use this button to move up when setting the menu.

I< : Move backward by one frame under Pause. Use this button to move down when setting the menu.

I< : Plays the video backward. Press the button repeatedly to increase play speed up to max 32 times (1, 2, 4, 8, 16, 32 times) faster. Use this button to move left when setting the menu.

I> : Plays the video forward. Press the button repeatedly to increase play speed up to max 32 times (1, 2, 4, 8, 16, 32 times) faster. Use this button to move right when setting the menu.

ENTER / PAUSE : Press the button to complete the settings. Under playback mode, the button can be used to pause the playback screen.

1-2. Turning on the System


Connecting the power cord will turn on the power of DVR. It will take approximately 10 to 20 seconds for the system to be initialized. Once the system is initialized, it will display quad screen, and begin to record video automatically.

Note : To turn off the system, select **SHUTDOWN** under main menu (**MENU > SHUTDOWN**) and unplug the power cord when the shutdown message appears

1-3. Menu Bar


The menu bar will appear on the bottom of the screen as shown below.



 : Pressing the Menu will bring up the main menu list

"%" : Shows the % of HDD being used

 : Turns on when the HDD is set to be overwritten.

 : Turns on when the system is connected to the network

 : Turns on when the Alarm is being activated


1-4. Display Icons


 : Recording

 : No Recording

 : Event Recording


 : Pre Event Recording

 : Motion Detection

 : Sensor Detection

 : Sequence

 : PTZ Camera

 : Backup

1-5. User or Admin Login

A screenshot of the 'Login' dialog box. It has a title bar that says 'Login'. Inside, there are two input fields: 'ID :' followed by a dropdown menu, and 'Password :' followed by a text box. Below these are two buttons: 'OK' and 'Cancel'. At the bottom, there is a numeric keypad with four buttons labeled '1', '2', '3', and '4'.

Press **MENU** to enter main menu screen. Login in screen appears to enter ID (Admin or User) and Password. Password can be set up to 8 numbers by the combination of numbers from 1 to 4. The factory default password is 'none' so press OK to log in to the system. Password can be set under password set up option (**MENU > SYSTEM > Password**). System will be automatically log out if it is not in-use for sometime. This "Auto Logout Time" can be set under password set up option (**MENU > SYSTEM > Password**).

1-6. The Main Menu

The **Main Menu** of DVR consists of SYSTEM, DEVICE, RECORD, DISPLAY and NETWORK. And each menu consists of various sub menus that allow detail set up of the system. Use Mouse, Remote Controller or Front Buttons to access to each menu.

Note: Please make sure the system log out is done when the system setting or operation completed to prevent any unauthorized changes of system settings or operations.

1-7. Contextual Menu

Display ▶	✓ ALL
Sequence	1.CAM1
PTZ	2.CAM2
Backup	3.CAM3
Playback	4.CAM4
Setup Menu	

Additional **Contextual Menu** screen appears by clicking right button on the Mouse. Display option allows changing Camera on the monitor. Select All to display all cameras on the monitor.

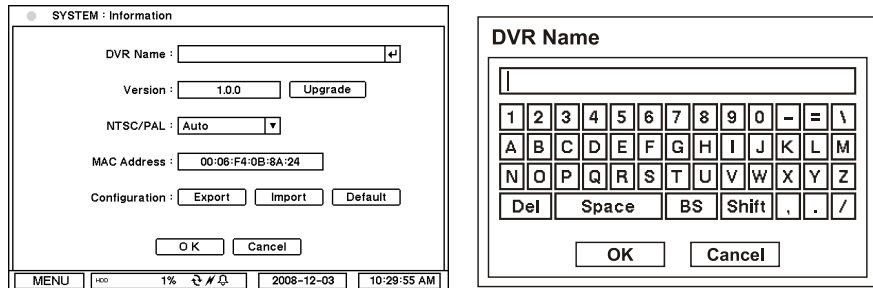
For other menu options on Contextual Menu please refer to Ch2. DVR Configuration.


2. DVR Configuration

2-1. System

Under system menu, System configuration options for general Information, Date &Time, Password, Storage, System Log and Back Up can be selected.

2-1-1. MENU > SYSTEM > Information



In the **Information** screen, DVR Name, System Version, Upgrade, Mac Address and Configuration options can be selected. Highlight and press DVR Name  to enter or change DVR name. Name the DVR by using the virtual keyboard.

To Upgrade the system, save the upgrade file to USB Flash Memory and connect it to DVR. Once the Device is connected, press Upgrade button to execute system upgrade.

Upgrade will take approximately 5 minutes. DVR will reboot automatically when the upgrade is completed.

Note : *DO NOT remove USB Flash Memory or turn off the system during the upgrade. Removing USB Flash Memory or Turning off the system during the upgrade may cause system malfunctioning.*

NTSC/PAL : Select Video Source type (NTSC/PAL). Select Auto to detect Video Signal type automatically

Note : *If the video signal is not stable, the system could not detect the signal type properly under Auto detection mode. In this case, select the video signal type manually from the menu and restart the system.*

Configuration

System settings can be saved and loaded using Configuration option

Export: Save settings to USB Flash Memory

Import: Load saved settings from USB Flash Memory

Default: Load factory default settings

Note : ***Configuration Import** does not affect or changes system and network settings. Network settings will also not be changed when selecting Default option.*

2-1-2. MENU > SYSTEM > Data & Time

SYSTEM : Date & Time

Time Zone : (GMT) Greenwich Mean Time: Dublin, Edinburg ▾

Use Daylight Saving Time

	Month	Week	Day	Time
Begin	3	5	SUN	02:00:00 AM
End	10	5	SUN	03:00:00 AM

Date/Time : 2008-03-01 12:00:00 AM

Use NTP

NTP Server : Time sync

OK Cancel

MENU 0% 2008-03-01 12:00:00 AM

In the **Date & Time**, Time Zone, Date, Time and NTP Server options can be selected. Highlight and press Time Zone ▾ to select right Time Zone. Select 'Use Daylight Saving Time' if it is applicable. Enter start and end date/time for local 'Daylight Saving Time'. Click ▲/▼ button to set up Date and Time.

Select 'Use NTP' to enter Time Servers to be synchronized with DVR. Highlight and press ← button to enter Time Server using the virtual keyboard. Press 'Time Sync' to synchronize the DVR time with the registered time server.

Note: NTP is not essential for DVR operation. Any type of Standard Time Server can be used (e.g. time.windows.com). Time Synch might not be completed due to heavy traffic or delays from the Time Synch server.

2-1-3. MENU > SYSTEM > Password

SYSTEM : Password

Admin Password : Change

User Password : Change

Auto Logout (min) : 5

OK Cancel

MENU 0% 2008-03-01 12:00:00 AM

Admin

Current :

New :

Confirm :

OK Cancel

1 2 3 4

In the **Password**, Admin Password, User Password and Auto Logout options can be selected. Press 'Change' and Password set up screen will appear to set or change Admin/User Password.

Current : Enter current password

New : Enter new password

Confirm : Re-Enter new password for the confirmation

Note : DO NOT have to enter Current password when setting password for the first time as there is no default password for Admin/User.

Set time interval for Auto Logout using ▲/▼ button

2-1-4. MENU > SYSTEM > Storage

● SYSTEM : Storage

HDD : 0.10 GB

Record Period : From
To

Auto Deletion (day)

S.M.A.R.T. _____

Disk Status :

Temperature : Threshold :

MENU | 0% | 2008-09-04 | 11:02:12 AM

In the **Storage**, HDD Format , Record Period and Smart options can be selected.

When installing the HDD for the first time, the HDD should be formatted first.

Highlight and press **Format** button to begin HDD format.

Record Period displays the information on the period of recorded data.

Auto Deletion : System will automatically delete the data older or earlier than the time period (day) set by user disregarding the remaining capacity of HDD.

S.M.A.R.T option allows checking the status of installed HDD.

Disk Status : Shows the HDD's condition

Temperature : Show the HDD's current temperature

Threshold : Allow to set acceptable max HDD temperature

***Note** : If the HDD temperature exceeds the preset temperature under Threshold, the system will activate an alarm to notify the change.*

2-1-5. MENU > SYSTEM > System Log

SYSTEM : Log

Time	Contents
2008-03-14 11:36:29 AM	Setup end
2008-03-14 11:36:30 AM	Setup begin
2008-03-14 11:36:31 AM	Setup end
2008-03-14 11:36:45 AM	Setup begin
2008-03-14 11:37:20 AM	Login (Admin)
2008-03-14 11:40:01 AM	Power on
2008-03-14 11:42:23 AM	Setup end
2008-03-14 11:51:32 AM	Shutdown
2008-03-14 11:55:00 AM	Setup begin
2008-03-14 11:57:29 AM	Login (Admin)
2008-03-14 11:59:59 AM	Power on

MENU | 0% | 2008-03-01 | 12:00:00 AM

In the System **Log**, full list of system logs can be searched.

Press 'Reload' button to refresh log list. USE < > button to search log list page by page.

2-2. Device

Under **Device** menu, Device configuration options for Camera, PTZ, Sensor & Motion and Alarm & Buzzer can be selected.

2-2-1. MENU > DEVICE > Camera

Camera	Use	Covert	Title
1	On	Off	CAM1
2	On	Off	CAM2
3	On	Off	CAM3
4	On	Off	CAM4

OK Cancel

MENU 0% 2008-03-01 12:00:00 AM

In the **Camera**, Use, Covert and Title options can be selected.

USE : Turn on or off connected cameras.

Covert : If select Covert on, no video images will be displayed on the monitor.

Title : Name each Camera using virtual keyboard by pressing

***Note** : Even though it shows no video images on the monitor by selecting Covert on, it still records the video images. It only blocks the video images from being monitored by others.*

2-2-2. MENU > DEVICE > PTZ

DEVICE : PTZ

Port	Baud Rate	Data Bit	Stop Bit	Parity
RS485	9600	8	1	None

Camera	Model	Address	Speed
1	None	1	5
2	None	0	5
3	None	0	5
4	None	0	5

MENU 0% 2008-03-01 12:00:00 AM

In the **PTZ**, PTZ model, options such as Address, Baud Rate and Speed can be selected.

Model : Select appropriate PTZ model from the list.

Press button to drop down the PTZ list.

Address : Set PTZ address (1-99) using button.

Baud Rate : Select appropriate Baud Rate from the list. Press to drop down the list.

Speed : Select PTZ speed from 1 to 10 using button.

Note: Please refer to PTZ camera manual for appropriate setting values for PTZ settings

PTZ control

Display	<input checked="" type="checkbox"/> ALL
Sequence	1.CAM1
PTZ	2.CAM2
Backup	3.CAM3
Playback	4.CAM4
Setup Menu	

Select channel connected with PTZ camera. Select PTZ from the contextual menu appears by clicking right mouse button.

Note : PTZ can only be controlled in single screen mode



: Zoom Out

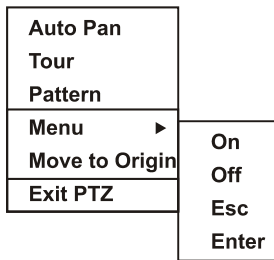
: Zoom In

: Focus on near distance

: Focus on far distance

: Save Presets

: Load Presets



Auto Pan : On/Off Auto Panning

Tour : On/Off Touring

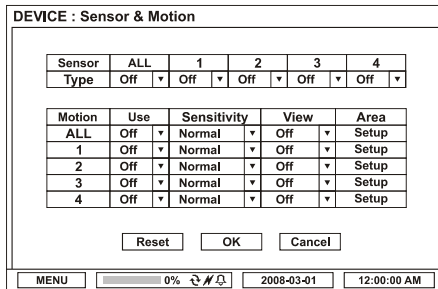
Pattern : On/Off pattern

Menu : On/Off or Set the menu of PTZ camera

Move to Origin : Bring PTZ to original position

Exit PTZ : Exit PTZ mode

2-2-3. MENU > DEVICE > Sensor & Motion



In the **Sensor & Motion**, Sensor Type and Motion Detection options can be selected.

Select **Sensor Type** using button.

NC: Normally Closed

NO: Normally Opened

The system provides **Motion Detection** function. Set Motion Detection using below option:

Use: Turn Motion Detection On or Off

Sensitivity: Set system's sensitivity to motion

View: Display selected Motion Area on the monitor

Area: Define the area where motion to be detected

Highlight and press '**Setup**' under area to set the area motion to be detected. Motion setup screen will appear. The blocks indicate the area is defined for motion detection. Use mouse or Enter/Channel (1~4) buttons to select/unselect the blocks. Motion contextual menu will appear by clicking right mouse button.

Select Block: Select four blocks at a time

Clear Block: Unselect four blocks at a time

Select All: Select all blocks

Clear All: Unselect all blocks

2-2-4. MENU > DEVICE > Alarm & Buzzer

DEVICE : Alarm & Buzzer

Alarm Duration (sec) : 30

Alarm 1 : Sensor Motion Video Loss S.M.A.R.T.

Alarm 2 : Sensor Motion Video Loss S.M.A.R.T.

Buzzer : Sensor Motion Video Loss S.M.A.R.T.

Reset OK Cancel

MENU 0% 2008-03-01 12:00:00 AM

In the **Alarm & Buzzer**, Alarm Duration, Alarm Outs and Buzzer options can be selected.

DVR has two alarm outs which can be associated with all or selected event types.

Set **Alarm Duration** time from 1 to 300 seconds using button.

Select event type to be synch with Alarm out. The system has internal **Buzzer** can be synch with events. Select event type to activate internal buzzer whenever the system detects events.

2-3. Record

Under **Record** menu, Record configuration options for Recording, Schedule, and Event can be selected.

2-3-1. MENU > RECORD > Record Setting

Mode	ips	Quality
Default(Time)	15	Standard
Default(Event)	15	High

In the **Record Setting**, HDD Overwrite, Audio Record, Simplex Record Mode, Resolution, and Recording Speed (ips) and Quality for Time/Event Recording options can be selected.

Note : *Only single channel recording is supported at D1 resolution.
Only two channel recording is supported at Half D1 resolution.*

HDD Overwrite : Overwrite recorded data and continue recording when HDD is full.

Audio Record : Select Audio Record option to record audio with video images.

Note : *Audio will be recorded but it will not be synched with specific channels.*

	Simplex Mode	None Simplex Mode
Max. Rec/Playback	120(100) ips	60(50) ips
Rec. during Playback	1ips	60(50) ips

Simplex Record Mode : Simplex Record mode allows the system to record at the maximum speed of 120ips but it will only record 1ips *during the playback*.

Note : *To record data all the time at the full recording speed as preset, even during Playback, DO NOT select Simplex Record Mode option. Max recording speed will be limited by 60 (50)ips under **None Simplex Record Mode** but the system will record at full recording speed as preset during the playback.*

Select recording **Resolution** from CIF to D1.

Set desired recording speed using button. Max. recording speed can be changed depend on the recording mode.

Select record image Quality from Low to Very High. Higher image quality means larger the image size.

Low : 1~2Kbytes / image (CIF, 30ips)

Standard : 2~3Kbytes / image (CIF, 30ips)

High : 3~5Kbytes / image (CIF, 30ips)

Very High: 5~7Kbytes / image (CIF, 30ips)

2-3-2. MENU > RECORD > Schedule

RECORD : Schedule						
	Day	From ~ To	Mode	Camera	Setting	X
1	MON-FRI	09:00~18:00	Time	1,2,3,4	Default	X
2	MON-FRI	00:00~09:00	Event	1,2,3,4	Default	X
3	MON-FRI	18:00~24:00	Event	1,2,3,4	Default	X
4	SAT-SUN	00:00~24:00	T&E	1,2,3	User	X
5	HOL	00:00~24:00	T&E	1,2,3	User	X
6						X
7						X
8						X
9						X
10						X

MENU | 0% | 2008-03-01 | 12:00:00 AM

In the **Schedule**, Day, From ~ To, Mode, Camera and Setting for detail recording options can be selected.

Day : Various days can be selected for recording by Day, Week (MON to FRI), Weekend (SAT to SUN), Holiday (HOL) and All.

From ~ To : Set desired recording time using button. Time can be selected from 00:00 to 24:00.

Mode : Select recording mode by Time, Event, Time/Event (T/E) and No Record.

i. **Time** : Continuous Record Mode

ii. **Event** : Record only when there is an event as preset

iii. **Time & Event** : Combination of Time and Event record mode.

Note : Event settings will be applied only when there is an event otherwise the system is recording by following the Time.

Camera : Select cameras to be recorded.

Settings : Select desired settings of recording speed and image quality.

Schedule4 : Camera	
<input checked="" type="checkbox"/>	All Cameras
<input checked="" type="checkbox"/>	1.CAM1
<input checked="" type="checkbox"/>	2.CAM2
<input checked="" type="checkbox"/>	3.CAM3
<input checked="" type="checkbox"/>	4.CAM4

MENU | 0% | 2008-03-01 | 12:00:00 AM



Schedule4 : Setting		
Mode	ips	Quality
Time	15	Standard
Event	15	High

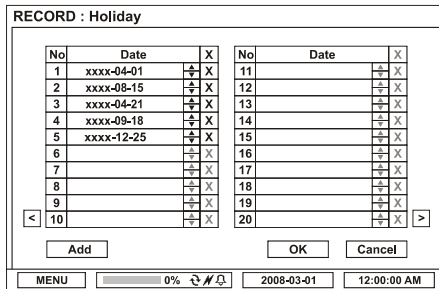
Use Default Setting

MENU | 0% | 2008-03-01 | 12:00:00 AM

Note : If select Use Default Settings, the system will record at 15fps and Standard quality.

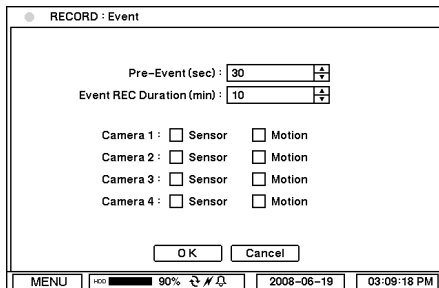
Important : The system always follow recording settings under Recording Setting menu unless specific time and recording options are set under Recording Schedule.

Holiday : Press Holiday to set specific dates for Holiday setup. Set specific date by pressing Add button. Change and delete dates using  and  and X buttons.



Note : There are some Holidays fall on different days. Therefore, they have to be updated every year.

2-3-3. MENU > RECORD > Event



In the **Event**, various event options of Pre-Event, Event REC Duration and Camera associations can be selected.

Pre-Event(sec) : Video Images occurred right before an Event can be recorded by setting Pre-Event under Event Mode. Duration Pre-Event recording can be set using Pre-Event(sec) upto 60 seconds.

Event REC Duration(min) : Set recording duration for events upto 30 minutes.

All the events can be associated any cameras. Mark event types to be associated with each camera.

2-4. Display

Under Display menu, Display configuration options for OSD and Monitor can be selected.

2-4-1. MENU > DISPLAY > OSD

DISPLAY : OSD

Date Display Format : YYYY-MM-DD

Time Display Format : 12 Hours

Language : English

Status Bar : Auto Hide

OK Cancel

MENU 0% 2008-03-01 12:00:00 AM

In the **OSD**, Data & Time display format, Language, Status Bar Hide can be selected.

Date Display Format : Select preferred Date Display Format from the list using button.

Time Display Format : Select preferred Time Display Format from the list using button.

Language : Select preferred Language from the list using button.

Status Bar : If you mark Auto Hide, the status bar disappears in 10 seconds while the system is not in use.

2-4-2. MENU > DISPLAY > Monitor

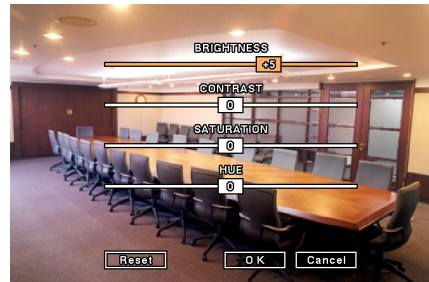
DISPLAY : Monitor

Sequence Duration(sec) : 10

Camera	Bright	Contrast	Saturation	Hue	Setup
1	0	0	0	0	Setup
2	0	0	0	0	Setup
3	0	0	0	0	Setup
4	0	0	0	0	Setup

OK Cancel

MENU 0% 2008-03-01 12:00:00 AM



In the **Monitor**, Sequence Duration(sec) and color control options can be selected.

Sequence Duration (sec) : Set interval time for the camera sequence.

Press Setup button to adjust video color.

Click or drag control box to adjust each color levels.

2-5. Network

Under Network menu, Network configuration options for network Address and DDNS can be selected.

2-5-1. MENU > NETWORK > Address

NETWORK : Address

Type : Static IP

IP Address : 192 . 168 . 1 . 127

Subnet Mask : 255 . 255 . 255 . 0

Gateway : 192 . 168 . 1 . 1

Port : Setup

DNS Server : 0 . 0 . 0 . 0

OK Cancel

MENU 100 1% 2008-12-03 10:39:47 AM

In the **Address**, Information such as Type, IP address, Subnet Mask, Gateway Port and DNS can be set for network connections.

Type : Select network type of Static or DHCP.

IP Address : Enter IP address using button.

Subnet Mask : Enter Subnet Mask using button.

Gateway : Enter Gateway using button.

Port : Network ports can be set as below when selecting the Setup button.

Port

Remote Port : 10101 (8000 ~ 12000)

Web Port : 80

	Port
Live	10101
Playback	10102
Setup	10103
Web	80

OK Cancel

MENU 100 1% 2008-12-03 11:08:33 AM

Note : Default TCP port is 10101 but it can be set from 8000 to 12000 if it is necessary.

Note : Router or similar devices users need to open additional TCP ports for network connection.

Example 1) if system port is set as 10101, following ports need to be opened by 10101, 10102(+1) and 10103(+2) in router.

Example 2) if system port is set as 8000, following ports need to be opened by 8000, 8001(+1) and 8002(+2) in router.

DNS : Set up the IP address of the DNS server. If you set up the DNS Server, the domain name of the DVRNS server instead of the IP address can be used during the DVRNS Server setup.

2-5-2. MENU > NETWORK > DDNS

The screenshot shows a configuration window titled "NETWORK : DDNS". It contains the following fields and options:

- Use DDNS
- DDNS Server :
- Hostname :
- Use ID
- ID :
- Password :


At the bottom of the window are three buttons: "Update", "O K", and "Cancel". Below the window is a status bar with the following information: "MENU", "0%", "2008-10-08", and "08:25:39 PM".

In the **DDNS**, network options for DDNS can be selected.


DDNS : Dynamic Domain Name Server allows dynamic network connections.

***Note** : "www.dyndns.org" offers free registrations or trial for DDNS service.*

"www.dyndns.org" is recommended if other DDNS is not available.

Host Name : Name the DVR or site where DVR is located using the virtual keyboard by pressing .

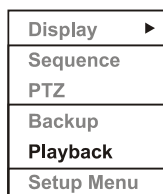
Use ID : Check Use ID box if DDNS server requires authentication (Log In) process.

ID/Password : ID and Password are required for Authentication using the virtual keyboard by pressing .

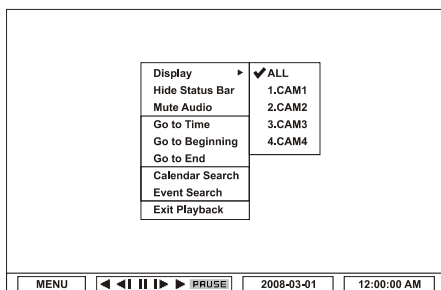
***Note** : Use ID/Password registered in DDNS.*

3. Playback

The system provides various playback menu to search recorded data. Please click **right mouse button** on mouse or press **playback button** on the front panel.



3-1. Display



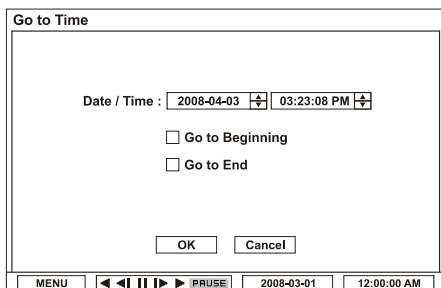
Select display mode or camera from **Display** list or double click on a camera to bring up specific camera in full screen mode.


Highlight and press **Hide Status Bar** to keep the status bar disappear from the screen. If do not want to hear recorded audio, select **Mute Audio**.

3-2. Search Options

Please select most convenient search options from the contextual menu.

3-2-1. Go to Time

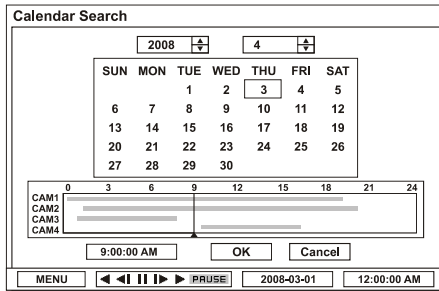


Select Go to Time to search recorded data by time/date. Set time/date using  button. Go to Beginning and End options are selectable to search the very first and last data recorded. Once desired settings are completed, press OK to begin search.

Go to Beginning : Move to the very first recorded data.

Go to End : Move to the latest recorded data.

3-2-2. Calendar Search

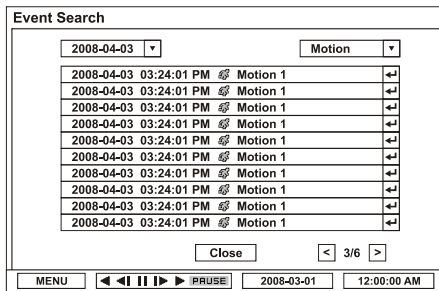


Calendar Search provides easy graphical search by displaying numbers (dates). Dates with recorded data will be highlighted. Once you select the date, it will display record time table below.

The numbers on the top of the table shows the time frame in 24hours format, and titles on the left indicate cameras numbers. The color bar shows the full information of recorded data on the selected date. Move the indicator (line) to select specific recorded time of the selected date.

Once desired settings are completed, press OK to begin search.

3-2-3. Event Search




Event Search provides easy search by event list recorded. Select the date and type of event to find specific data.

All : System displays every events

Motion : System displays every events related to Motion

Sensor : System displays every events related to Sensor

Once find specific list of event, move up and down button to highlight the log and press  button to playback the data.

3-2-4. Playback Control





R.Play : Reverse Playback

Step Backward : Go to the previous image

Pause : Freeze or Stop current image

Step Forward : Go to the next image

Play : Play the data at normal speed

To control the backward and forward playback speed, press on  or  repeatedly. Playback speed can increase up to x32.

4. Backup

4-1. Backup

The screenshot shows a 'Backup' window with the following fields and controls:

- Device: Flash (dropdown menu)
- File Name: untitled (text input)
- From: 2008-10-09 03:44:34 PM (date and time pickers)
- To: 2008-10-09 03:44:34 PM (date and time pickers)
- Camera: ALL, 1, 2, 3, 4
- Audio: Audio
- Status: Ready (0 Bytes / 48.0 MB) (text input) with an Update button
- Start and Close buttons

At the bottom of the window, there is a status bar with: MENU, REC, 0%, a play/pause icon, 2008-10-09, and 03:44:40 PM.

In the **BACKUP**, the recorded data can be selected for backup to USB devices.

Press **USB Device** to select the type of USB Device connected to the system.

Select date & time period of data to be backup using button.

Select **Camera** number to be backup or All to backup all the data recorded during the selected period. To back up recorded Audio with video data together select **Audio**.

Status shows capacity of the device being prepared for backup, and it will show backup progress during backup.

***Note** : The backup process could be slowdown if the system is being monitored/playback on the remote using the client program during the backup process.*

***Note** : "DO NOT remove the back up media while the data backup is being processed. It may cause critical damage to either the media or system if the backup media is removed during the backup process."*

4-2. Instant Backup

Press backup button to start Instant Backup during the playback. Instant Backup window will appear when press backup button during the normal playback mode. Select Device, File Name, Audio and press Start to continue the playback and backup. The Backup Icon will appear on the screen during the Instant Playback. Press backup button one more time to stop and complete Instant Backup.

***Note** : "DO NOT remove the back up media while the data backup is being processed. It may cause critical damage to either the media or system if the backup media is removed during the backup process."*

***Note** : Playback speed will be slower than usual while instant back up is processing.*

4-3. Clip Maker

Clip Maker allows to create single channel backup file which can be played on PC. Select Clip Maker option on the pop up menu during the live or pause mode on the playback.

Display	>
Sequence	
PTZ	
Backup	
Clip Maker	
Playback	
Setup Menu	

Select the backup option for Clip Maker. Press Start button to create Clip Maker. Use Quick Time player to play the file created using Clip Maker

Clip Maker

Device: Flash

File Name: untitled

From: 2008-10-09 05:50:21 PM

To: 2008-10-09 05:50:21 PM

Camera: 1

Audio

Status: Ready (0 Bytes / 48.0 MB) Update

Start Close

MENU HD 0% 2008-10-09 05:50:26 PM

Note : The Clip Maker file can not be played on other programs such as Window Media Player.

Chapter 3. Remote Software - Nemon

1. The Software

The Integrated Remote Software, Nemon, provides full functions of remote system monitoring, controlling and managements via internet.

2. General Features

- Remote monitoring for individual or multiple locations
- Remote system set up
- Remote search on registered locations

3. System Requirements

- Operating System: Microsoft Windows XP / Window Vista
- CPU: Intel Pentium IV (1.0GHz or higher) or other CPUs have similar performance
- RAM: 512MB or higher
- VGA: AGP, Video RAM 64MB or higher (1024x768, 16bpp or higher), DirectX 7 or higher
- ETC: Microsoft .NET 2.0 or higher

Chapter 4. Installing Remote Software

1. Software CD

Find Software CD contains 'Nemon' in the box and Insert CD into PC

2. Start Installation

2-1. Double click on NemonSetup.exe file to start installation procedure

2-2. When the following dialog box appears, click Next.



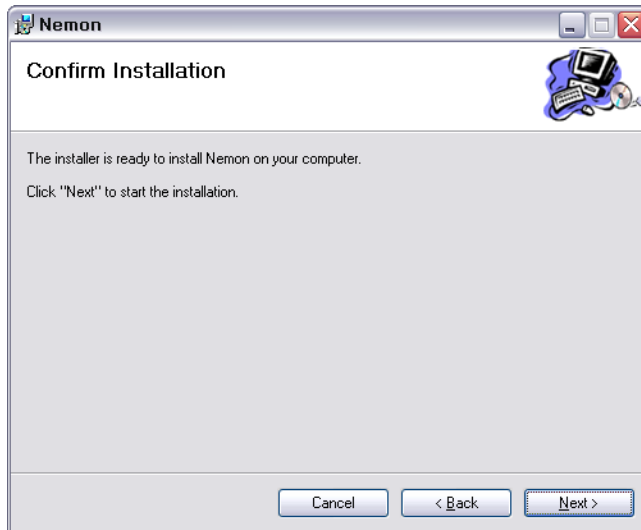
2-3. After selecting program folder and desired option, click Next.



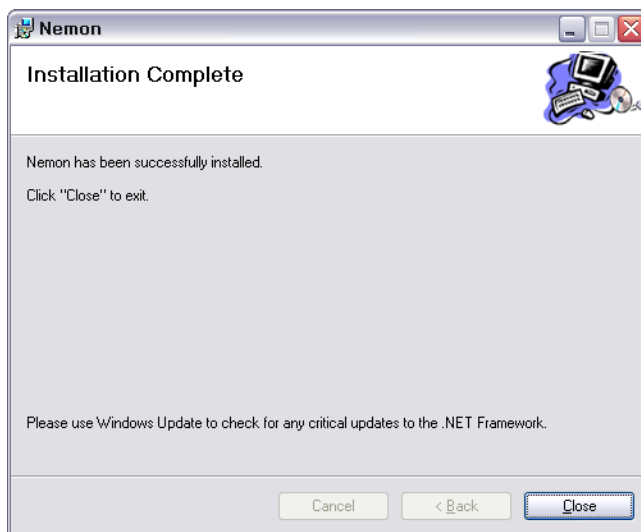
* **Everyone** : Allow all PC users to get access to Nemon software.

* **Just me** : Allow only private PC user access to Nemon software.

2-4. When the following dialog box appears, click Next.



2-5. Click Close to complete installation procedure.

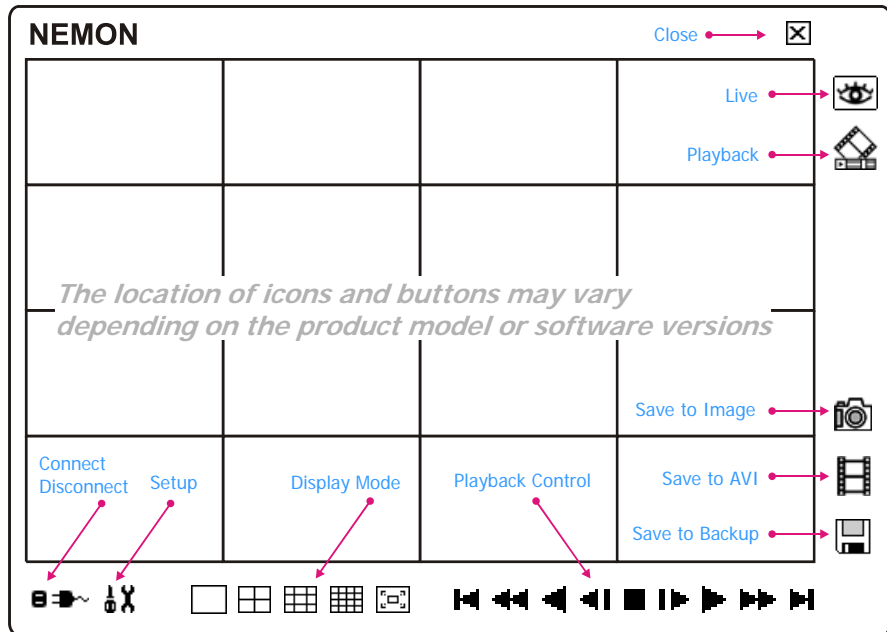


Chapter 5. Using Remote Software

1. Starting the Software

1-1. Site Set Up

- Double click on 'Nemon' icon on PC to run the software.
- Main screen of the remote software appears as shown below.



Live : click the image to enter the live mode

Playback : click the image to enter the playback mode

Display Mode : select display modes (single screen, 2x2, 3x3, 4x4 and full screen)

Connect / Disconnect : click button for site setup and connect


Setup : click button for remote software setup

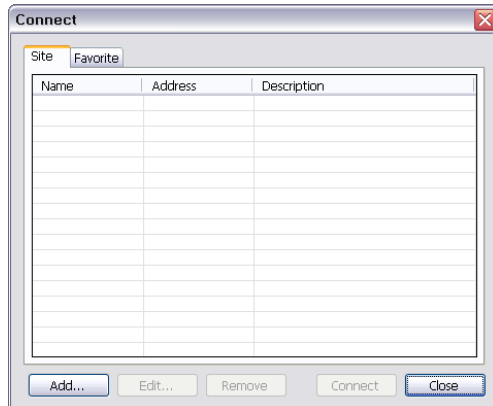
Save to Image : Save the recorded data in Image file format.

Save to AVI : Save the recorded data in AVI file format.

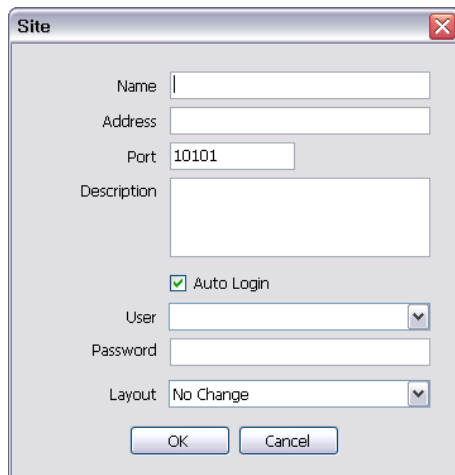
Save to Backup : Backup the recorded data.

Close : click the image to close the software

- Click  button to display registered remote locations or add new locations.



- Click **Add** button to add remote location and required information.



Name : Enter Site Name

Address : Enter IP address or domain name of the site

Port : Enter port number if there is a specific port to be set for the software

Description : Enter the description of the site

Auto Login : If do not want the Log In window to be popped up every time starting the remote S/W, check Auto Login to skip User/Password authentication process

User : Select the type of user from the list

Admin : allows full access to all the software functions

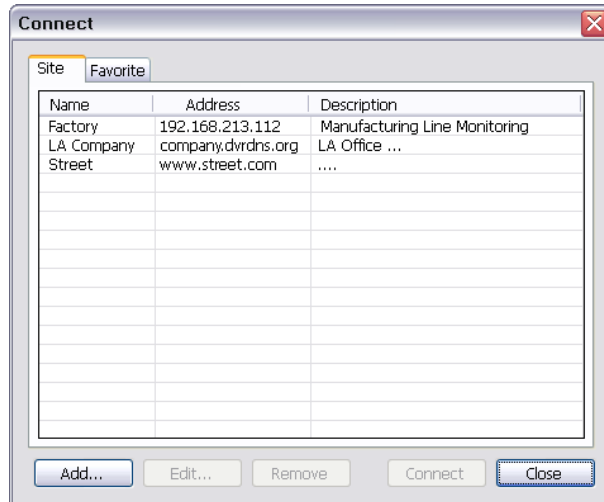
User : only allows limited access to the system (monitoring only)

Password : Enter the password of DVR

Layout : Select desired display layout for the site when it is connected


Note : *Layout can be changed after begin connected using the display option on the menu.*

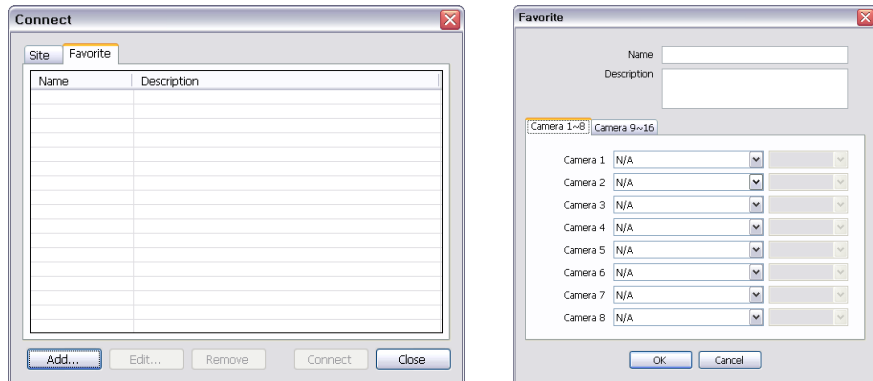
-
- Click **OK** to save information and complete the registration.
 - **Double click** the location or Highlight it and click **Connect** button to get connected to the site.




1-2. Favorite Set Up

Favorite function allows multi site management. Up to 16 different cameras and sites can be monitored and managed on one screen.

- Click  button and select **Favorite** tap.

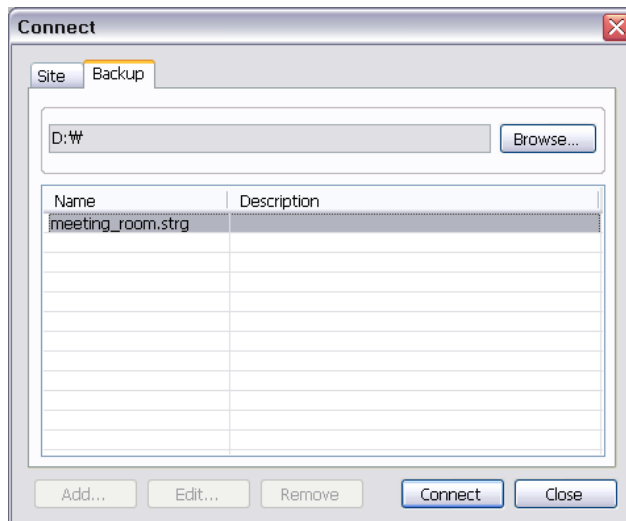


- Click **Add** button to group multiple sites as one favorite group.

- Enter the group name and description. Up to 16 different cameras or sites can be grouped and displayed together. Select sites and cameras from the drop down list by clicking  button.

Note : sites should be registered under 'Site' menu before setting the favorite.

1-3. Play Backup Data



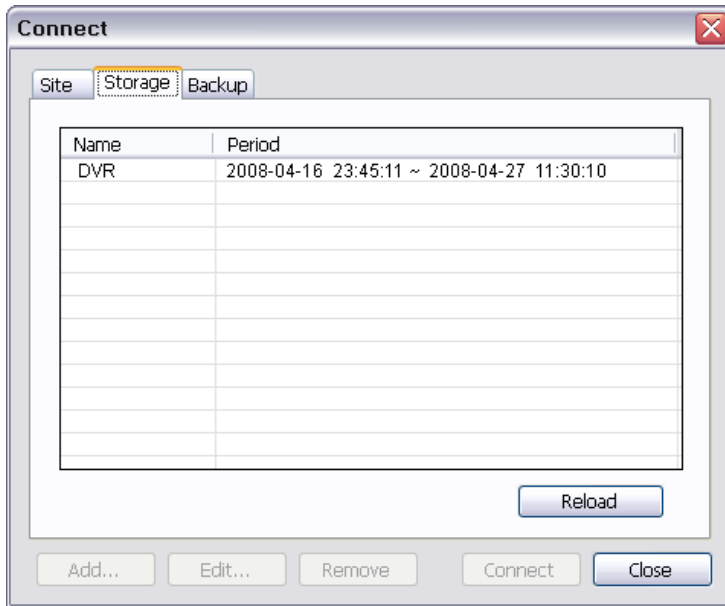
Backed up data from the local site can be played on the remote site.

- Select the location where the data is saved.


-Select the file and click **Connect** to play the video.

Note : Recorded Audio can be played on single screen only.

1-4. Play Independent HDD Data on PC





Independent HDD (removed from a DVR) data can be played on PC using Nemon S/W. Have the HDD connected to PC using a SATA to USB connector cable.

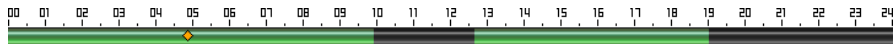
- Make sure the HDD is connected to PC properly
- Open Nemon S/W and Click  button.
- Click 'Storage' tap to display HDD information (if HDD is not shown please click 'Reload' button to refresh the list).
- Double click the list or highlight and click 'Connect' button.

2. Remote Playback



2-1. Calendar Search

- Click on  icon on the menu screen to bring up search menu.
 - Click  for **Calendar** search. Dates with recorded data will be displayed in bold letter.
- Select the date and use time table to select specific time. Click play button to start playback.


May, 2008						
S	M	T	W	T	F	S
				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



Playback Control Button

-  Rewind
-  Reverse Play
-  Beginning
-  Step Backward
-  Stop
-  Step Forward
-  End
-  Play
-  Fast Forward


Go To Time

- Click on  icon to display time search window. Enter specific time to search the data



Select Time

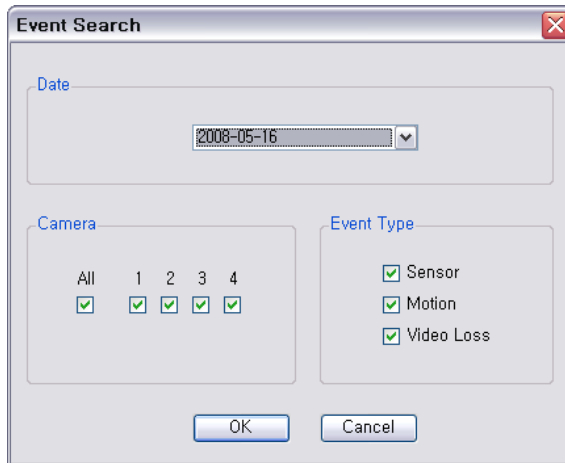
AM 12:00

OK Cancel

- Click on  icon refresh and update the calendar info.

2-2. Event Search

- Click  tap to display menu for **Event** search
- Click  to enter event query option.












The 'Event Search' dialog box contains the following elements:

- Date:** A dropdown menu showing '2008-05-16'.
- Camera:** A group box containing 'All' (checked) and camera numbers '1', '2', '3', and '4', each with a checked checkbox.
- Event Type:** A group box containing 'Sensor', 'Motion', and 'Video Loss', each with a checked checkbox.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

Select an event from the list for playback. Search through the list using   buttons.


Select the date of event search for from the Date list. Select All or specific camera numbers for related event search. Type of events can be selected from the list for detail and effective search.

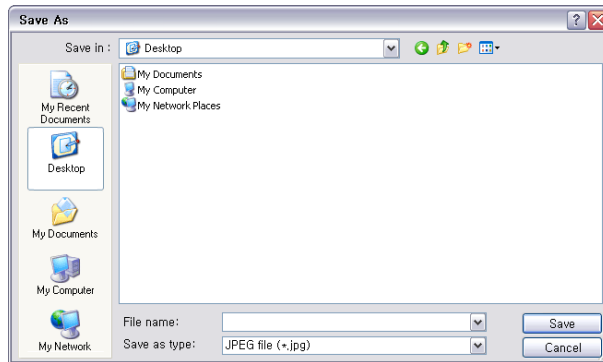
	04	2008-05-14	14:52:21
	03	2008-05-14	14:52:21
	01	2008-05-14	14:52:21
	02	2008-05-14	14:51:23
	03	2008-05-14	14:50:32
	01	2008-05-14	14:50:32
	01	2008-05-14	14:50:32
	02	2008-05-14	14:50:22
	01	2008-05-14	14:49:17
	01	2008-05-14	14:49:17

2-3. Saving the recorded data

2-3-1. Save to Image




-Pause the playback and press  button to save the recorded data in Image file format. 'Save As' dialogue will appear.

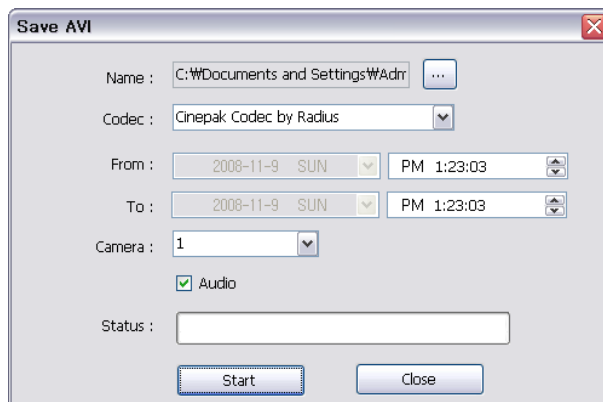


- Enter file name and file type.
- The Image can be saved in JPEG, BMP and PNG format.

2-3-2. Save to AVI




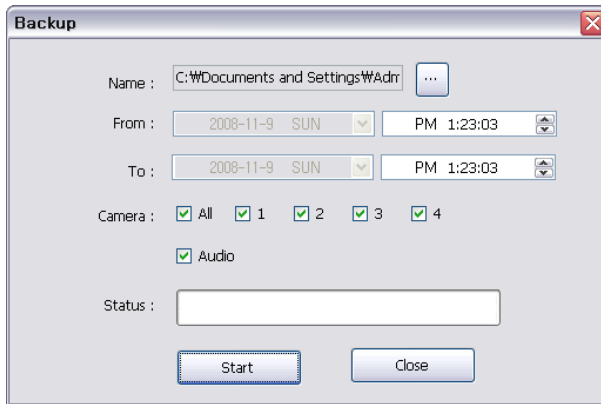
- Pause the playback and press  button to save the recorded data in AVI file format. 'Save AVI' dialogue will appear.



- Enter file name and select Location.
- Select appropriate Codec.
- Select the time period.
- Select Camera number and Audio. Press Start to create AVI file.

2-3-3. Save to Backup

- Pause the playback and press  button to backup the recorded data. 'Backup' dialogue will appear.




The screenshot shows a 'Backup' dialog box with the following fields and controls:

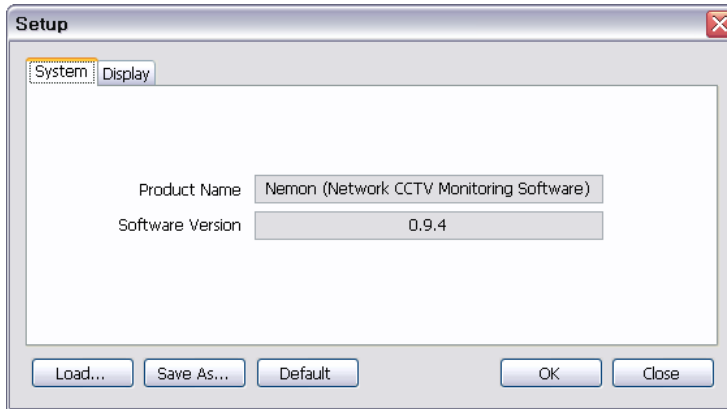
- Name:** A text field containing 'C:\Documents and Settings\Adri...' and a browse button (...).
- From:** A date and time selector showing '2008-11-9 SUN' and 'PM 1:23:03'.
- To:** A date and time selector showing '2008-11-9 SUN' and 'PM 1:23:03'.
- Camera:** A row of checkboxes for 'All', '1', '2', '3', and '4', all of which are checked.
- Audio:** A checkbox labeled 'Audio' which is checked.
- Status:** An empty text input field.
- Buttons:** 'Start' and 'Close' buttons at the bottom.

- Enter file name and select Location.
- Select the time period.
- Select Camera number and Audio. Press Start to create Backup file.

3. Setup

3-1. Nemon Setup

- Click on  to enter local setup menu.



Product Name : Displays general information of the S/W

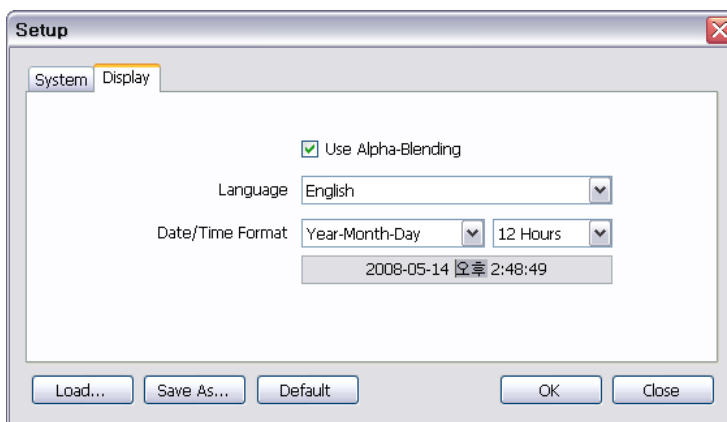
Software Version : Displays current S/W version

Load : Load saved data for settings for remote software

Save as : Save current settings of remote software

Default : Set default settings of remote software

- Click on display tap to enter remote display setup menu.




Use Alpha-Blending : Enables alpha blending effect to S/W UI


Note : There are some graphic cards do not support such functions. In this case, unselect the option as it might result in abnormal system operation


Language : Select language option for the remote software

Date/Time Format : Select Date/Time Format for the remote software

3-2. Remote Setup

Click  to enter remote set up menu.

Single connection (single site) : please get a site connected for monitoring first, and  Button.

Favorite connection (multi sites) : please click camera or site on the monitoring screen, and click  button.

***Note:** The remote software provides interactive setup system that allows easy local DVR settings from remote sites. It gets exactly same menu and options as the local system. Therefore please refer to "2. DVR Configuration" and following chapters for the detail information.*

Appendix A. Remote Access Using Internet Explore

DVR can be accessed remotely using Internet Explore. Execute internet explore program and enter DVR address (e.g. IP) to get connected.



Remote Log In page appears once connected to DVR. Enter ID and PW, and select Live or Playback mode to display desired remote control option. Please install Active X when Internet Explore displays Active X installation message.



Remote Monitoring



Remote Playback

Please refer to the remote program 'Nemon' manual if detail instructions on the control option is needed.

Note : Web is supported only on Internet Explorer 7.0 or above.

COMPLIANCE NOTICE OF FCC:

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE, IN WHICH CASE USERS WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE.

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WEEE (*Waste Electrical & Electronic Equipment*)

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This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

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