

EDNS2000 Series

EDNS2000-4/8/16

User Manual

? The pictures might differ according to the specifications.
? This User Manual is based on EDNS2000-8EP.

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First Edition Januar 18st, 2005

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Thank You for purchasing Ernitec 's, Digital Security System. Before operating the system, please read this User's Manual thoroughly and retain it for future reference.

WARNING

TO REDUCE FIRE OR SHOCK HAZARD, DO NOT EXPOSE
THE UNIT TO RAIN OR MOISTURE.

This installation should be made by a qualified service person and should
conform to all local codes.

Cautions

Read Before System Operation

Follow these details to prevent material damage or personal injury.

Signs of Caution and Warning



Warning: This sign indicates that the user could die or be seriously wounded if not used or installed properly.



Caution: This sign indicates that the user could be wounded or could expect property damage if not used or installed properly.



Warning: Do not expose the product to fog, rain or too much humid to decrease danger from electric shock or fire.

Important Safeguards



Warning

1. Change the battery after turning the off the power of the product.
2. Check the polarity of the lithium battery while changing.
3. Change the battery with the same one, which is in the product or with the similar type recommended by your vendor.
4. Dispose of the changed battery according to the instructions of the battery manufacturer.
- ? There is danger of explosion when instructions are not followed.

General Warning



Warning

1. Use the power cord, which is supplied or recommended by the supplier.
It may cause fire.
2. Do not dismantle or assemble the product.
It may cause malfunction or fire.
3. Enquire from your vendor for repair.
It may cause electric shock or fire if the repair is not done properly.
4. Do not touch the product with wet hands.
It may cause malfunction or electric shock.
5. Matters must be ensured to a professional for product installation.
It may cause malfunction, electric shock or fire.
6. Consult the place of purchase if the need for installation arises.
Delinquent installation may be the reason for malfunction, electric shock or fire.
7. Ground applies to video products equipped with a 3-wire grounding type plug having a third (grounding) pin.
This plug only fits into a grounding-type power outlet.
If grounding is not done, it may cause malfunction or electric shock.
8. Ground connection must not touch gas pipe, water pipe or telephone line.
If grounding is not done properly, it may cause electric shock.
9. Prevent metallic foreign substance from going inside the product.
It may cause malfunction or electric shock.
10. Do not spray insecticide or flammable spray while driving.
It may cause fire.
11. Prevent water from entering inside electrical parts.
Clean with a dry towel or malfunction or electric shock could result.

Caution

1. Use the power cord, which is supplied or recommended by the supplier.
The internal fan rotates at high speed and may cause an accident.
2. Do not drop, give strong vibration, or shock to the product.
It may cause malfunction.
3. The air inhaled of the front panel and air outlet of the back panel must not be blocked during installation.
The internal temperature of the product would be greater than allowable and could cause malfunction or fire.
4. Do not touch the product or the power cord when there is thunder.
It may cause electric shock.
5. Do not install the product near or on top of heating source.
The internal temperature of the product would be greater than allowable and could cause malfunction or fire.
6. Do not install the product on inclined or unstable location or where vibration could be committed.
It may cause malfunction.

Cautions about the Power

Warning

1. Must use the outlet of the grounding to connect the power cord.
It may cause fire.
2. Do not connect on the middle of power cord or use extension cord.
It may generate heat or cause fire.
3. Do not touch the power cord with wet hands.
It may cause electric shock.
4. Keep power cord dry and protect from humidity.
It may generate heat or cause fire. The power cord is not waterproof.
5. Hold the body of the plug while removing the power plug.
Do not pull the power cord. Damage to the power cord may generate heat or cause fire.
6. Check the power plug regularly.
Humidity and moderation in smoking may cause fire.
7. Remove power cord from outlet when product is not used for a long time.
It may cause short-circuit or electric shock.

Caution

1. Do not turn off the power by removal of the power plug.
To turn off the power, click the power button from the front panel.
When the system stops abnormally, the power button might not work. Click power button for 5 full seconds to turn power off.
2. Do not cut off the power artificially, or give shock or vibration to unit while the hard disk is activating.
It may cause hard disk failure or loss of data.

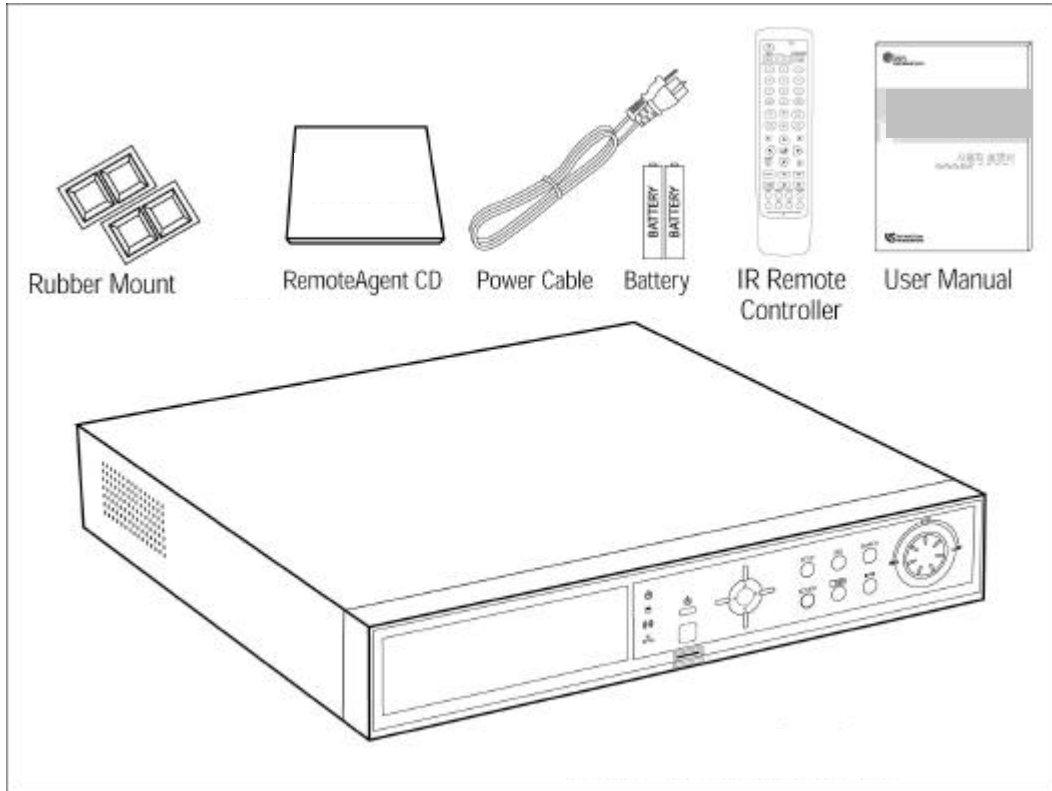
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1. System Structure and Installation

The following accessories are supplied with the EDNS2000 series digital video recorder. Keep the packing utilities for moving or storage purposes afterwards.

Note If any of these items is missing or damaged, notify your vendor immediately.

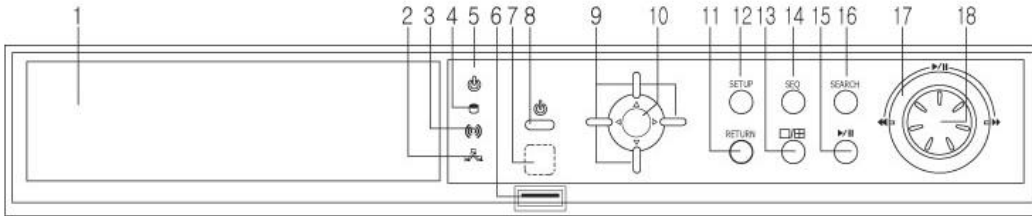


Qty	Accessories
1	User Manual
1	IR Remote Controller
1	RemoteAgent CD
1	Power cable
2	Power battery (AAA Size)
1	Rack Mount Set

2. Explanations for each function

2.1 Front Panel

The buttons on both the front panel of the EDNS2000 and IR Remote Controller have the same functions. Each button can activate different functions. The buttons on the front panel of EDNS2000 may be different in shape with the remote controller buttons, but the IR Remote Controller can also control most of the functions controlled by the front panel of the EDNS2000.



No.	Buttons	Functions
1	CD-RW	Backup the recording image by internal CD-RW. (Option)
2	Network LED	LED is lit while the network client(s) (RemoteAgent) is connected to the system.
3	Alarm LED	LED is lit when the sensor signal is inputted to the connected system.
4	HDD LED	Shows if the camera image is being stored into or retrieved from the HDD (Hard Disk Drive).
5	Power LED	Shows Power On/Off status of the system (GREEN: Working, RED: Stand-by).
6	USB Port	USB interface Port to connect to external storage equipment.
7	Remote Control Receiver	Receives input signal of the Remote Controller
8	Power Button	Use to turn the Power On/Off.
9	Select Channel	The channel image will change when the corresponding up, down, left and right button is pressed. This is same as using cursor key (direction key) on the main screen.
10	ENTER Button	Use to enter detail menu, go into the next stage, select or set value.
11	RETURN Button	Use to exit from the setting menu or to cancel setting value.
12	SETUP	Menu to set user environment of the system.
13	Screen Mode Selection	Select the screen mode from 1, 4, 8 and PIP screen.
14	SEQ Button	Automatic time sequencing for monitor images.
15	Playback / Pause	Playback recorded images/pause.
16	SEARCH	Search recorded images
17	Shuttle	Shuttle (outer dial): Speed up the playback speed of the image (2~32X).
18	Jog	Jog (inner dial): playback frame by frame.

2.1.1. CD-RW (Option)

The EDNS2000 series system can select the CD-RW as Option. Use the CD-RW to backup the recorded image. Refer to "Image Backup" for detail explanation.

2.1.2. Network LED

LED is blue when the system is connected to any network client (RemoteAgent). Light is automatically out when all clients are disconnected.

2.1.3. Alarm LED

LED is lit if the system's connected Alarm activates.

2.1.4. HDD LED

LED is blue when the camera image is being stored into or retrieved from the HDD. So, even though the system is continuously recording, the HDD LED is only lit when actual data is recorded in the HDD. Usually, the LED will be flickering, and this is normal.

2.1.5. Power LED

LED to show the power input and status of the system. The LED is red when the system is in stand-by position, but is green when the system is working and power is being supplied.

2.1.6. USB Port

Use to backup recorded images of the EDNS2000 series by using USB storage device. System software upgrade is possible with USB storage device.

Note Refer to "Image Backup" for detailed explanation of USB storage devices supported by EDNS-3000 series.

2.1.7. Remote Controller Receiver

EDNS2000 can be operated conveniently, using the remote controller. Receives input signal from the remote controller

2.1.8. Power Button

Connect the power cable of the product before pressing this button to turn the power on and off.

2.1.9. Select Channel

These buttons are used to change the channel images. Left/Right button is used to change the channel on 1-screen mode or PIP mode and Up/Down button is used to change PIP channel from PIP mode. Also, these buttons are used to move cursor in "Setting" mode as up, down, left, or right, and also used to increase or decrease the setting value.

2.1.10. ENTER Button

The [Enter] button is used to go to the next stage, select value or settings.

2.1.11. RETURN Button

Use to cancel the password just typed at the setting menu or return to previous menu.

2.1.12. SETUP

Set the environment of the EDNS2000 system according to the user requirement. Refer to "Setting" for detailed explanation.

2.1.13. Screen Mode Selection

Screen mode can be selected from the monitor screen. Whenever the buttons is pressed, it will change in sequence in 1, 4, 8, 16 and PIP screen.

2.1.14. SEQ Button

Press SEQ Button and the screen will automatically changes. Refer to "Settings" for automatic sequencing interval (does not work on 4 split screen mode).

2.1.15. Playback / Pause

Playback recorded screen. The corresponding channel can be playback in 1 screen mode or PIP screen and all the channels can be playback in 4, 8 or 16 channels at once.

2.1.16. SEARCH

Search the recorded image by date and time. Refer to "Recording Image Playback Mode" for detailed image searching method.

2.1.17. Shuttle

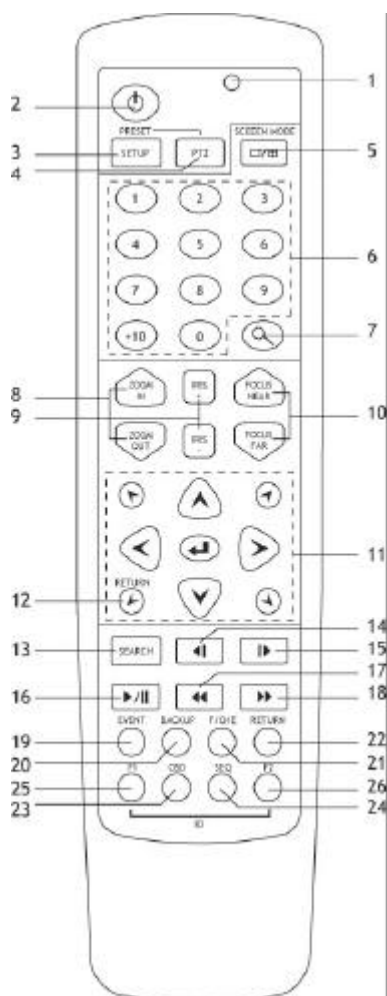
Jog/Shuttle dial is used to playback recording images. The inner dial is called Jog and the outer dial is called Shuttle. The Jog/Shuttle dial has two kinds of functions. The Shuttle is used to speed up the playback speed of images by clockwise or anti-clockwise. Playback speed is indicated as x2, x4, x8, x16, x32 on the lower end of the screen.

2.1.18. Jog

The Jog is used to find the recording image frame by frame. Turn the Jog dial clockwise or anti-clockwise (only I-Frame is playback during anti-clockwise) to see the image frame by frame during pause state.

2.2 IR Remote Controller

The function buttons of the IR Remote Controller are the same functions as function buttons on the front panel as shown below.



No.	Functions
1	Activating LED
2	Power Button
3	SETUP (Use the Preset Button while using the PTZ)
4	PTZ
5	Screen Mode Selection (1/4/8/PIPsreen sequence button)
6	Number Input Button
7	Digital Zoom Button
8	ZOOM IN (enlarge) /ZOOM OUT(decrease)
9	IRIS+ (Open) / IRIS – (Close)
10	FOCUS NEAR / FAR
11	Direction Key
12	RETURN (Use the 4 diagonal direction key button while using the PTZ)
13	SEARCH Button
14	Playback Backwards Frame by Frame
15	Playback Forward Frame by Frame
16	Playback/ Pause Button
17	Fast Playback Forward Button
18	Fast Playback Backwards Button
19	EVENT Button
20	BACKUP Button
21	F/O/E Button
22	RETURN
23	OSD Button
24	SEQ Button
25	F1 (Use to enter ID)
26	F2 (Use to enter ID)

Note F/O/E Button (use only on remote controller)

The object in the recorded image might show the feathering effect during frame playback because images at 704x480(PAL:704x576) resolution have higher vertical resolution than 704x240(PAL:704x288) or 352x240 (PAL:352x288). The feathering of the image can be solved when only one of two Fields (Odd, Even Field) is selected. Default is frame playback. When the button is pressed, it will change to Odd Field Playback-> Even Field Playback-> Frame Playback order.


Note To use the IR Remote Controller, set the initial ID to be as same as the ID in SETUP->RECORDER->GENERAL->IR REMOTE CONTROLLER. The user requires setting the ID only once. Refer to the next page for detailed information about ID input.

Note Number Button

Change the channel on 1-screen mode. Press the number buttons for 1~4 channels to see the corresponding channels. It is also use to set the setting value on the "Setup" menu.

Direction Key Button

The direction key activates differently for Realtime Image/Playback Mode, Setup Menu Mode, Search Menu Mode and Digital Zoom Mode. The Digital Zoom Mode only activates in Realtime Image Mode, Recording Image Playback Mode and 1-screen mode. Thus change the screen to 1-screen mode to activate direction key.

On RealTime Image/Playback Mode	On Digital Zoom Mode
Right Side Direction Key: Increase the channel on screen	Up, Down, Left, Right Button: To Move Direction
Left Side Direction Key: Decrease the channel on screen	Enter () Button: PIP Screen On/Off
Up Side Direction Key Button: Increase PIP channel on PIP Mode.	Zoom In/Out Button: To Decrease or Enlarge Screen
Down Side Direction Button: Decrease PIP channel on PIP Mode	Diagonal Direction Button: Return
Setup Menu, Search Menu Mode	
Up, Down, Left, Right Button: To Move direction	PTZ Mode
Diagonal Direction Button: Return	Up, Down, Left, Right Button: To Move Direction
	Diagonal Direction Button: To move Direction

2.2.1. Setting IR Remote Controller

As one IR Remote Controller can control several product, ID will have to designated to use each Remote Controller on each product.

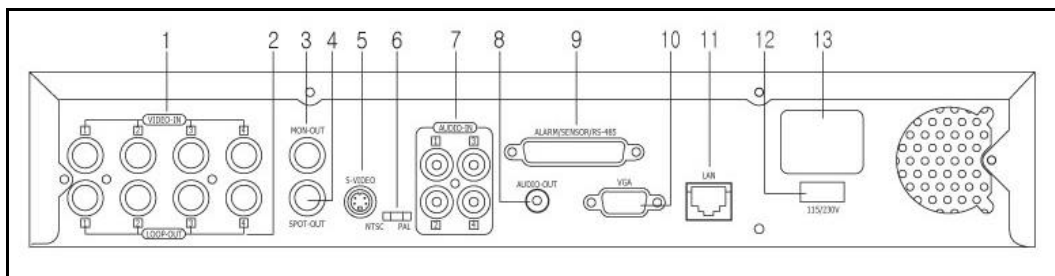
The following below is the method to set the ID of IR Remote Controller. Default ID will be 00.

1. Insert the battery into the IR Remote Controller (AAA Size×2).
2. Press both [F1] Button and [F2] Button at once on the IR Remote Controller for more than 2 seconds.
3. Check whether LED of the IR Remote Controller is lit.
4. By using the IR Remote Controller's number button, set the ID number from between 00~99. Set the ID number in 2 digits (ex. 03,55).
5. Set the ID of the system as same as the number set on the IR Remote Controller, by using front panel direction key.
6. Press [OK] Button on the screen to save the set ID.

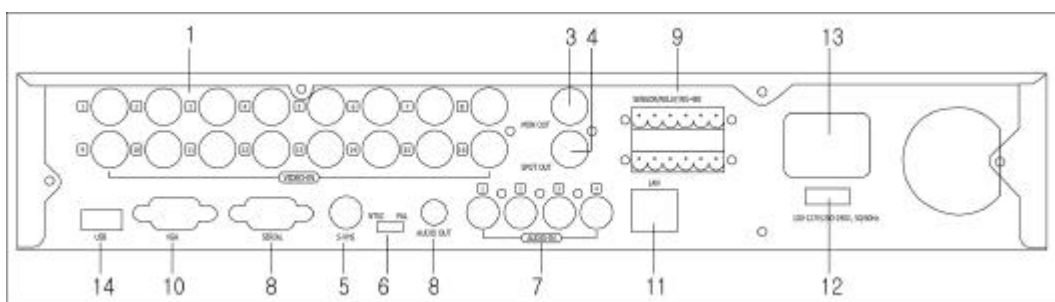
Note All the System had same default value ID when it is out from the factory. Therefore, when the default value is used, one IR Remote Controller can control several systems at once. To prevent this, it is recommendable to set each ID for each system. As it is easy to change the ID for IR Remote Controller, several systems can be controlled separately by changing the ID of the Remote Controller whenever it is used.

2.3 Rear Panel

The following is the rear panel of the EDNS2000 series system.



[EDNS -2004/2008]



[EDNS -2016]

No.	Name	Description
1	VIDEO-IN (BNC)	Connect camera. (Supports NTSC/PAL)
2	LOOP-OUT	Camera images of each channel will be outputted as is. Also, used when the corresponding image is required for other product (8 /16 channel has no LOOP-OUT).
3	MON-OUT	Connect to the main monitor for camera image for surveillance/management/playback.
4	SPOT-OUT	Use to output the entire surveillance screen one by one, in an interval.
5	S-VIDEO	Connect to S-Video input terminal to output image of the main monitor.
6	Select NTSC / PAL	Select the signal system. (NTSC / PAL)
7	AUDIO IN	Connect Audio Input Device. (with Amp.)
8	AUDIO OUT	Connect Audio Output Device. (with Amp.)
9	ALARM/ SENSOR /RS -485	Terminal to connect external input sensor of 1~4 channel. (Supports N/O or N/C) Connect RS-485 signal output or relay for P/T/Z camera control.
10	VGA Port	Connect to PC Monitor.
11	LAN Port	10/100 Ethernet connection terminals for remote connection.
12	Power Input	Power cable connection terminal for connecting to main power.
13	Power Switch	Switch to change input power. (115/230V)
14	USB Port	USB interface Port to connect to external storage equipment.

Note Check whether the specification of the peripheral devices connecting to the EDNS2000series matches with the specification supported by EDNS-2000 series system. Enquire from your vendor for detail explanations. For Audio input/output, use the product with amp attached.

2.3.1. VIDEO-IN

Connect the BNC plug of the camera cable to the corresponding channel number's image input BNC plate, which is on the rear panel.

Note Camera Input voltage level is $1V_{p-p} \pm 10\%$.

2.3.2. LOOP OUT

Use to apply the video of camera input to other device. Without using a video distributor, the same image can be connected to the camera input of other product. **(Not applicable for EDNS2008/2016)**

2.3.3. MON OUT

Connect the BNC cable of the monitor to MON OUT BNC cable of the rear panel. The monitor is use for surveillance on the image shown and to manage system or playback recording image. .

2.3.4. SPOT OUT

The spot monitor can only be used to display input images in automatic interval mode. Refer to " Settings" for automatic interval time setting of spot monitor.

2.3.5. S-Video Output

One additional main monitor can be installed by using the S-Video output. Use the S-Video cable to connect the EDNS-2000 with the monitor, which has S-Video Input.

2.3.6. Select NTSC / PAL

Turn off the power of the EDNS2000 series and select the NTSC/PAL switch correctly . Then turn on the power again.

2.3.7. Audio In

Connect Audio Input Device.

Note Input voltage of audio input device is line level.
Use of audio output device with amplifier is recommended.

2.3.8. Audio Out

Connect Audio Output Device

Note Use of audio output device with an amplifier is recommended

2.3.9. ALARM/SENSOR/RS-485

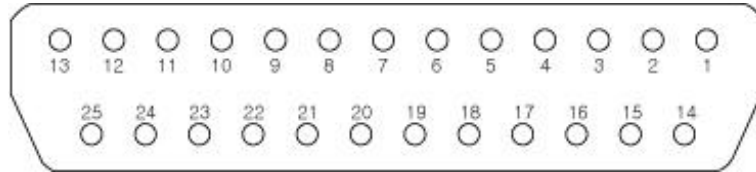
Connect sensor (dry contact type). Separate the terminal block and wire all devices to desired pins, before connecting the terminal block again. Connect each ground (GND) line to " G" pins.

Note Support both N/O (Normal Open) and N/C (Normal Close). If connected sensor is not functioning, ensure wiring is correct.

Connect various alarm devices controlled by relay output. EDNS2000 series supports RS-485 for P/T/Z control.

Note The connection method differs according to the type of P/T/Z controller use. Enquire from your vendor in case you are using other than RS-485.

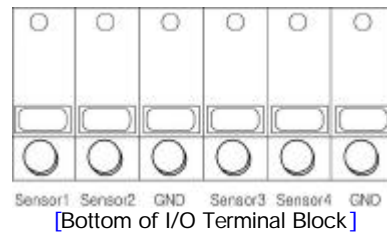
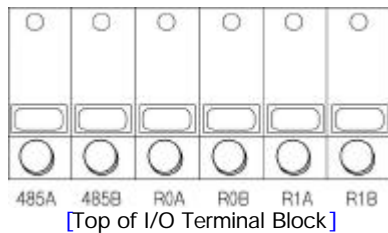
Refer to picture below for printer port connection of the EDNS-2004 & EDNS-2008 series rear panel.



NO.	SENSOR	NO.	RELAY	NO.	Serial Communication	NO.	NO Connect
1	SENSOR1	5	RELAY1(+)	8	RS485-RX	9	NO Connect
2	SENSOR2	6	RELAY2(+)	20	RS485-TX	10	NO Connect
3	SENSOR3	7	GND	22	RS232-TX	11	NO Connect
4	SENSOR4	13	GND	24	RS232-RX	12	NO Connect
14	SENSOR1-GND	18	RELAY1(-)			23	NO Connect
15	SENSOR2-GND	19	RELAY2(-)			25	NO Connect
16	SENSOR3-GND	21	GND				
17	SENSOR4-GND						

Refer to the picture below to connect I [I/O Terminal Block] to the Alarm/Sensor/RS485 port of the EDNS -2016 system's back panel.

First connect RS485~R1B to the top and Sensor1~GND to the bottom.



2.3.10. VGA Port

See the image by connecting with normal PC Monitor.

2.3.11. LAN Port

Connect RJ-45 jack of LAN cable to LAN port. Network has to be TCP/IP base 10/100 Ethernet LAN (Local Area Network), Internet or exclusive line, and IP address should be fixed one. Consult network administrator for proper network configuration.

2.3.12. Power Input

Connect to main power cord of the system.

Caution Before plugging-in the power cord to the system, check if the power is in accordance with the system specification (Single Phase AC 115/230V)

2.3.13. Input Power Switch

Input power can be used, by selecting according to the user environment. Check input power before inputting power.

2.3.14. Port

Use the USB device to backup the saved image of the EDNS -2016 system. S/W upgrade can be also done using USB device.

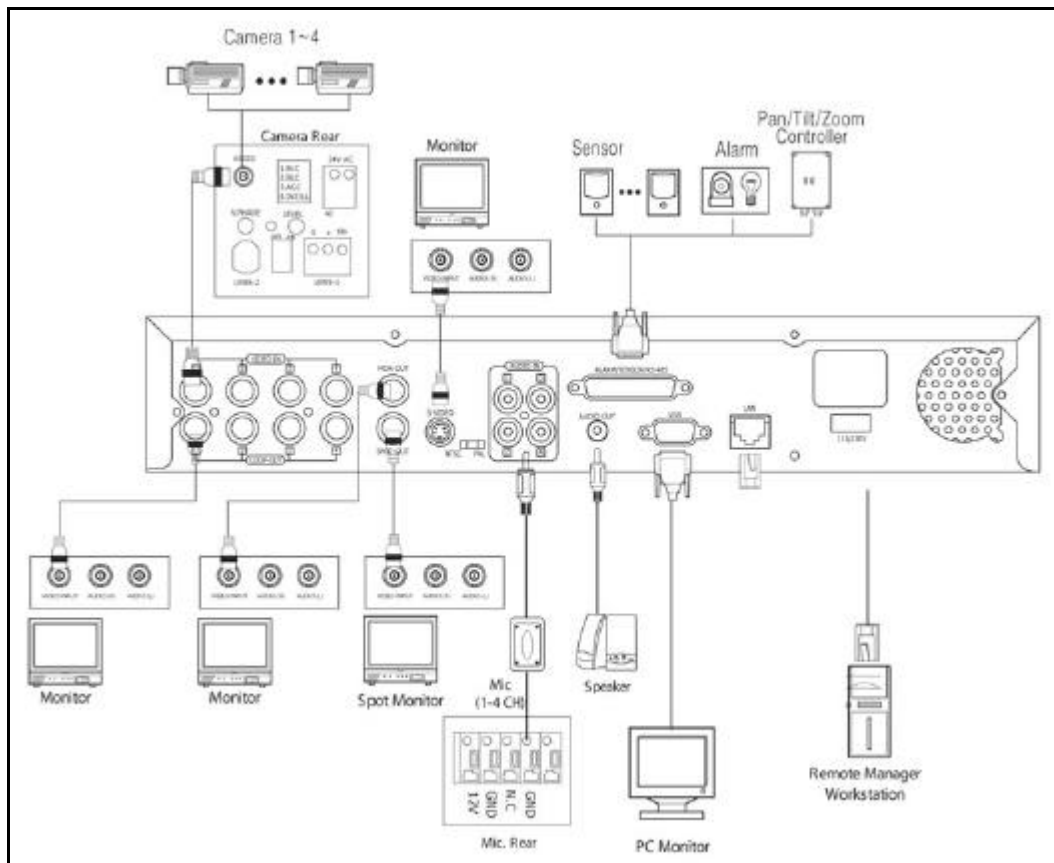
3. Installation

3.1 Connecting Peripheral Device

This section describes how to efficiently hook up peripheral devices using with the EDNS2000series. Below picture shows connection of the EDNS2000series with the peripheral devices.

Install the EDNS2000 series on flat surface. If required, attach a rubber mount for installation. In case 19-inch rack is used, it is recommend to install the system on shelf and use 2.5~3U(1U=1.75 inch or 4.45 cm) space for proper ventilation.

Note Install the system in location with good ventilation to prevent overheating.



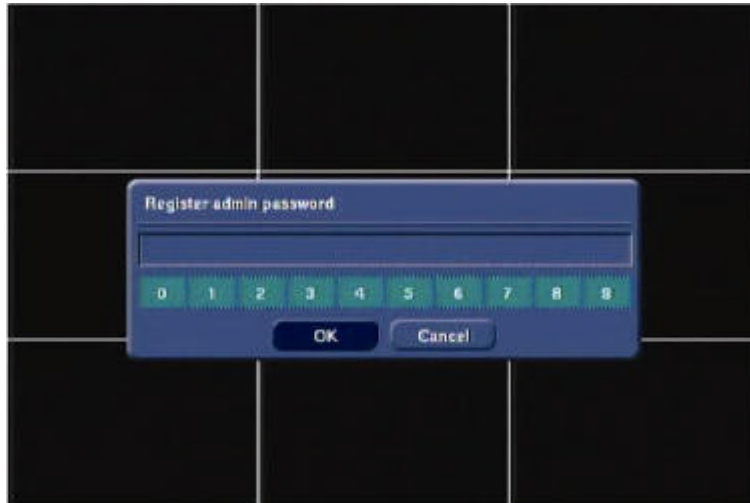
Caution Depending on the grounding, the coaxial cable connecting to the camera has danger of electric shock. Shut down power of the system completely (unplug the power cable) before connecting video cable to BNC port.

3.2 System Startup and Shutdown

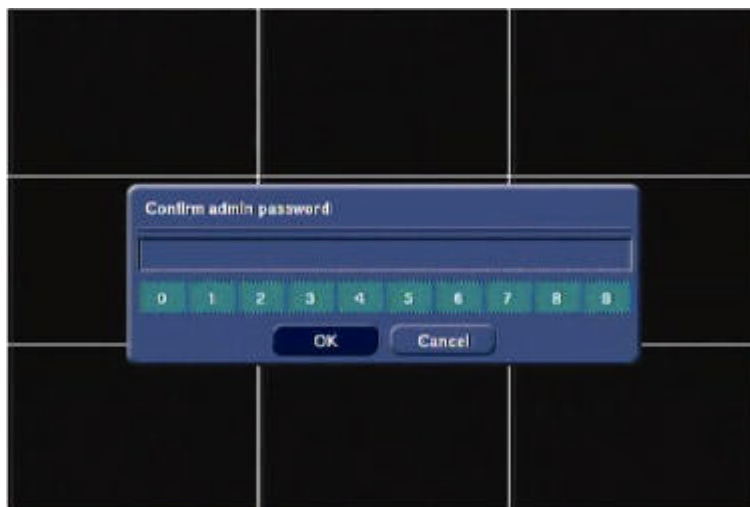
3.2.1. System Startup

After connecting all peripheral devices, connect power cord to EDNS2000 series for system startup. The power will turn on automatically if there was abnormal shutdown, such as power failure.

Register admin password after inputting power and turning on the system. This is to prevent others from using. In case password is not required, press [OK] without the entering password.

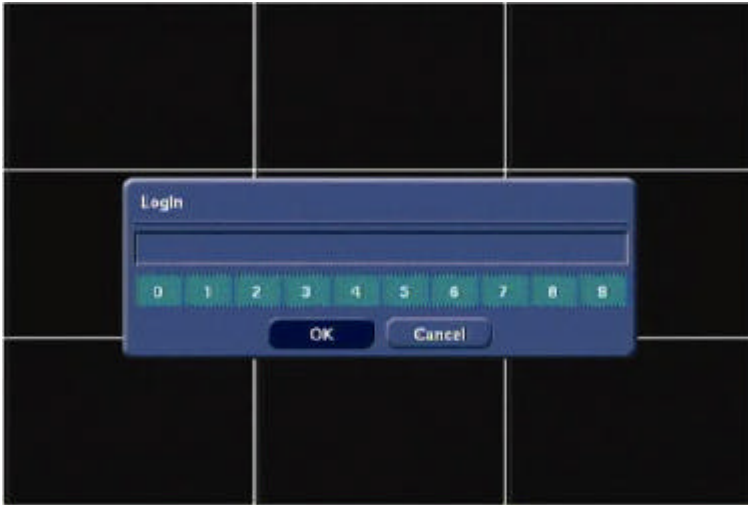


Enter the Password and press [OK] button. Next reenter once again.



Caution Do not forgetting the administrator's password, which had been set for the first time. In case, the password is forgotten, enquire from your vendor.

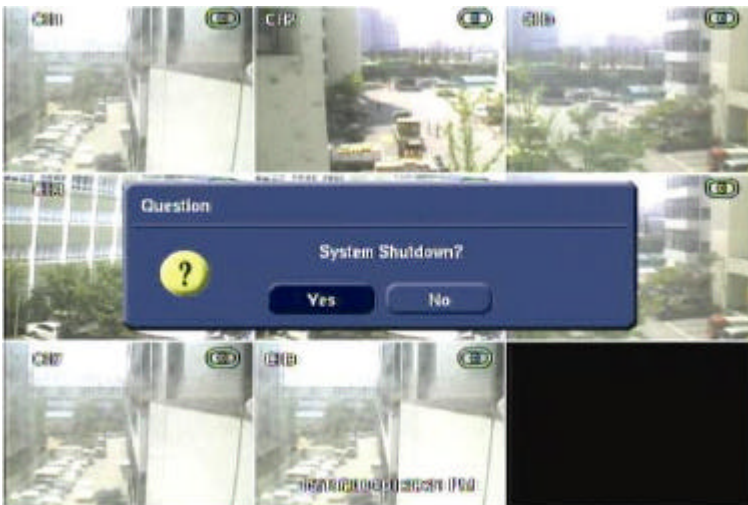
A screen asking for admin password will appear when the system power is turned on for the first time. Then, Log In screen will appear. Next step will be proceeding right away without Log In process, in case there is no admin password. Several users can use one system, using different password. Refer to "Recorder->Password" part for user setting method.



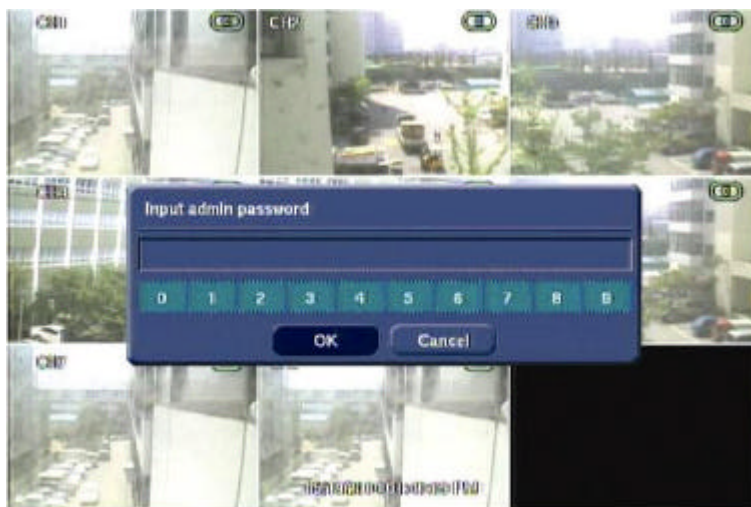
3.2.2. System Shutdown

To turn the power off, press the power button for proper shutdown of the system. Do not pull off the power by pulling the power plug.

The below message will appear when the [Power] button is pressed to shutdown the system.



Press [Yes] button and confirmation admin password will appear. Enter the proper password and press [OK] button to shutdown the system safely.



Note In case the power plug has been plug off to turn off the power while the system is activating, the files will not be closed properly. Therefore, when the power plug is plug to turn off the power, the index information for efficient search for corresponding file will not be saved even though recorded image is not damaged (Journaling File System).

The power button had to be used to turn off the power, so that the system can be used right away after booting and to prevent product defect.

3.2.3. Countermeasures after abnormal shutdown

EDNS2000 series has been designed to operate for long periods without a problem.

The operation of the system can be locked up however, when major parts (such as hard disk) function abnormally due to external electric shock, physical damage, or other various reasons.

The system stops operating during abnormal situations, and the internal watchdog circuit is activated in order to reset the system for rebooting within 2 minutes. The system will then recover normally. It will also automatically reboot even when there is power failure. However, if major parts (such as hard disk) are physically damaged, it is impossible to recover normally. This will cause continuous rebooting by watchdog or deadlock without reset.

Countermeasures for abnormal discontinuation are as follows.

1. In case the power cannot be turned off, turn off by pulling the power cord.
2. Wait for about 10 seconds and reconnect the power. Ensure the system is functioning properly.
3. Consult your dealer if system is not functioning properly after reconnecting power.

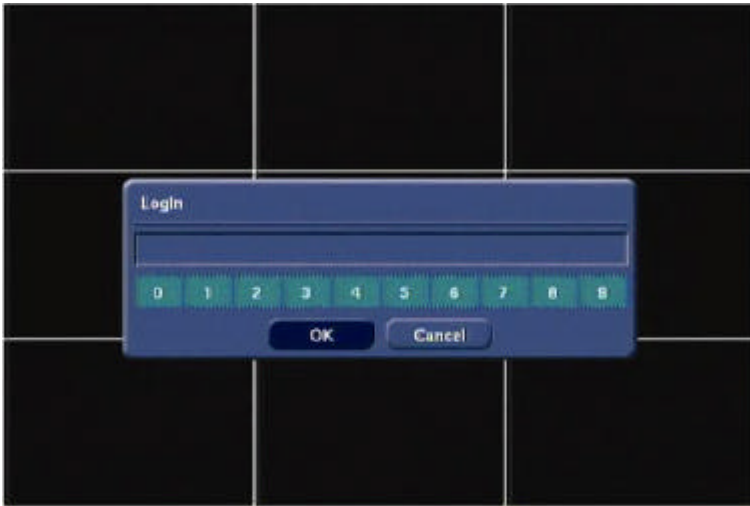
4. Operation

4.1 Log In

Check the power connection. The system can be used after power-on.

EDNS2000 series has various setting categories. The administrator can set the system password and <User> to prevent unauthorized changes to setting values and alteration to recorded file.

Enter the <Admin> or <User> password which had been set. In case the <Admin> and <User> password are same, it will recognize as <Admin>.



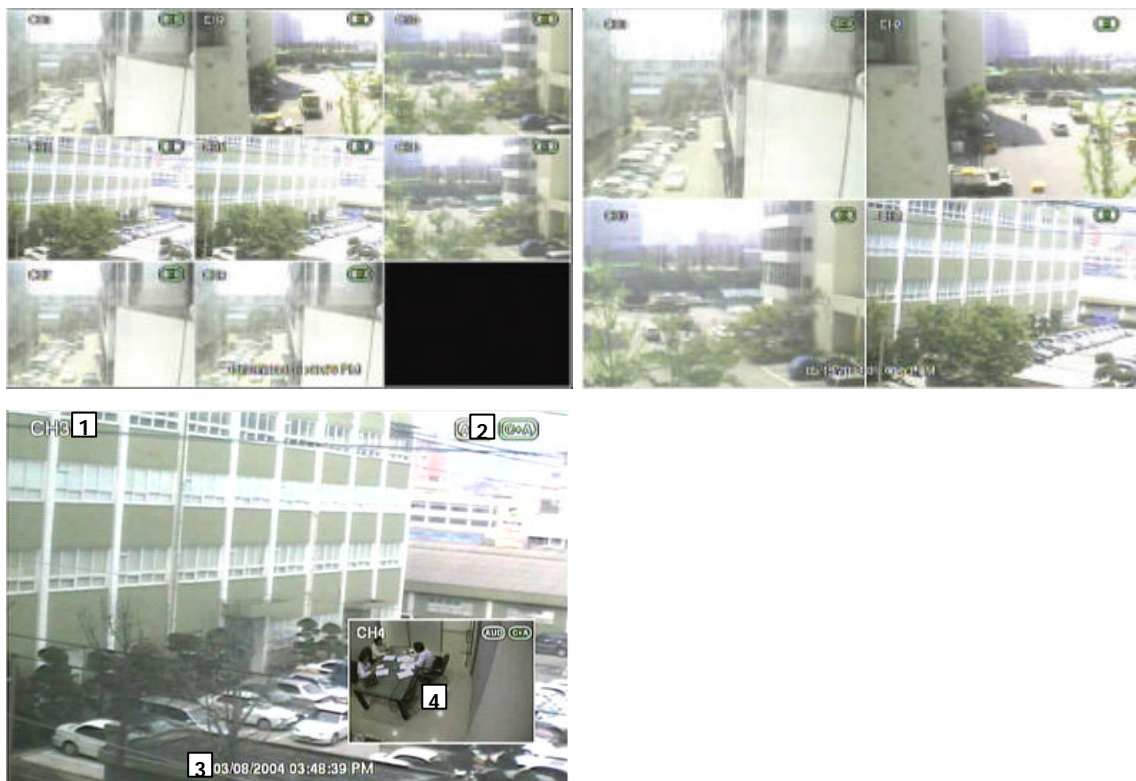
Note Do not forgetting the administrator's password, which had been set for the first time. In case, the password is forgotten, enquire from your vendor.

4.2 Real time Live Mode

Real time live image can be seen by easy button operation after inputting power.

The images can be seen realtime by 1, 4, 8 and PIP screen. Whenever the button on the front panel or IR remote controller [] is pressed, the screen will change in 8 -> 1 -> PIP -> 4 channels in sequence. To change the channel from 1 screen mode, press the left/right arrow button on the front panel or IR remote controller.

4.2.1. Screen Configuration



Above is typical screen with displayed items. Press [OSD] button on the front panel or IR Remote Controller to control the display of OSD. Whenever the button is pressed, the display of OSD will toggle between appearance and disappearance.





















The following is the explanation of each item displayed on the screen.

1. Channel Name: Shows camera title of the location. Refer to "Setting->Camera-Common" to input camera location.
2. Recording Status: Indicates present recording, recording mode, camera information such as PTZ and icons for activating motion and alarm, according to the schedules.
3. Date and Time: Indicates present date and time of the system. When the recorded data is playback, it indicates date and time of the recorded time displayed.
4. PIP : PIP screen will be indicated as one of the multiple screens and it also appears when digital zoom is used in full screen mode. Digital zoom is used to enlarge or decrease screen image and the digital zoom button of the remote controller is used.

4.2.2. See Operating Status

In real time live mode, icons or messages will be indicated on the screen to notify the system mode or status.

Below are the icon categories, which are indicated on the monitor.

	Fast Backward Playback (Indicates Kind of Times: X2, X4, X8, X16, X32)		Alarm
	Playback Backward Frame by Frame		Smart Alarm. Pre-Alarm for HDD error
	Stop / Pause		Alarm Activating Channel
	Playback		Motion Detecting Channel
	Playback Forward Frame by Frame		Audio Activating
	Fast Forward Playback (Indicates : X2, X4, X8, X16, X32)		P/T/Z Control Activating
	Automatic Screen Sequence		Continuous Recording (c)
	Using Zoom Function		Motion Detection Recording (m)
	Using PTZ Function		Audio Activating Recording (a)
			Continuous + Alarm Activating Recording (c+a)
			Motion Detection + Alarm Activating Recording (m+a)



While Alarm Activates



While Using Digital Zoom Functions

Note When an alarm occurs in the connected channel, the [Alarm] icon will appear on the right bottom side of the screen. To find out which camera has alarm activating, go back to Live and see the alarm icon indicated on the right bottom side of each channel.

4.3 Recording Image Playback Mode

For the user to search recording image of the EDNS2000series, the user will require selecting the date and time to search recording data easily.

4.3.1. Playback Recording Images

To playback recorded image, press Playback (?) button from the Front Panel or IR Remote Controller. Press the Playback button and the latest recording image will be playback.

It is easy to use the Front Panel's Jog/Shuttle to playback recording files. Turn the Jog and the recorded files can be seen backwards or forwards frame by frame. Turn the Shuttle and the playback speed can be controlled 2, 4, 8, 16, 32 times while playback backwards or forwards.

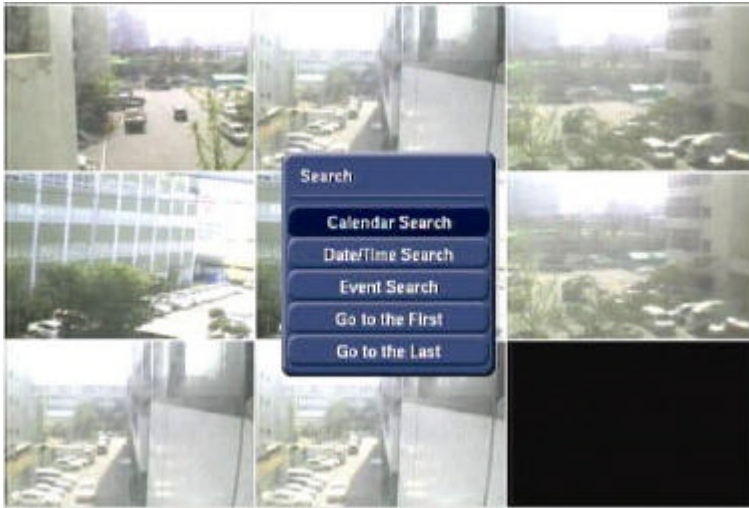
The below picture is when the playback is done 2 times.



4.4 Search Recording Image

4.4.1. Calendar Search

The user can select date and time to search for a certain file within the recorded image. Press the [Search] button of the IR Remote Controller and the Search Menu will be indicated on the screen as below picture.



The following below is the sequence to search date and time.

1. Select the date with recorded image by clicking the calendar with the arrow button. The date with recorded image will be indicated in gray.
2. Move the arrow button to the date desired before pressing [Enter] button of the Front Panel or IR Remote Controller.
3. Next, move the cursor to the time graph below the calendar to the desired hour range.
4. Then from the min unit graph, select the minute.
5. Move the cursor and press [OK] button and the recorded image for the corresponding time will be recall by pause state. Press the [Play] button to see the playback of the recorded image.

4.4.2. Search Date/ Time

Enter the desired date and time for the user to playback the recorded image. Select [Search->Date/Time Search] category and the screen as below will appear.

Use the arrow button to move to each day/month/year and time (hour:min:secs AM/PM) category for entering date and time.

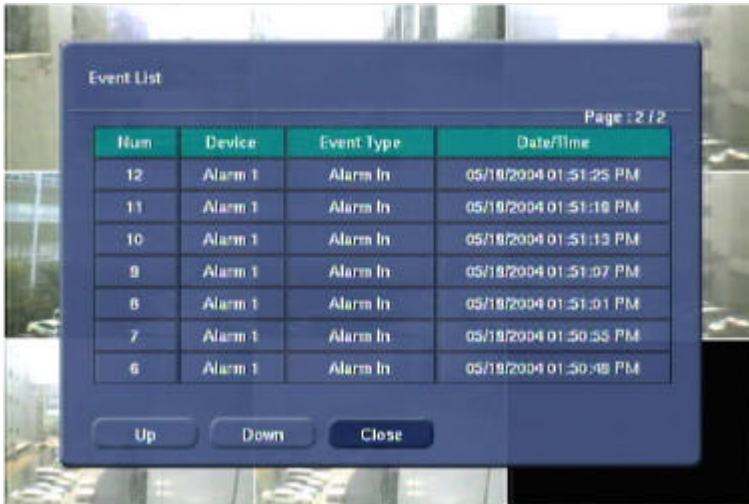


Enter the date and time before pressing [OK] button and the picture as below will appear to show image of the searched date/time. Image will not appear incase, there is no recorded images. Press [?] button to playback the recorded images.



4.4.3. Event Search

The Event Search function is used to find particular event, quickly and easily.



The screenshot shows a window titled "Event List" with a table of events. The table has four columns: "Num", "Device", "Event Type", and "Date/Time". The data rows show seven alarm events, all from "Alarm 1" on "05/18/2004". Below the table are three buttons: "Up", "Down", and "Close". The page number "Page : 2 / 2" is visible in the top right corner of the window.

Num	Device	Event Type	Date/Time
12	Alarm 1	Alarm In	05/18/2004 01:51:25 PM
11	Alarm 1	Alarm In	05/18/2004 01:51:18 PM
10	Alarm 1	Alarm In	05/18/2004 01:51:13 PM
9	Alarm 1	Alarm In	05/18/2004 01:51:07 PM
8	Alarm 1	Alarm In	05/18/2004 01:51:01 PM
7	Alarm 1	Alarm In	05/18/2004 01:50:55 PM
6	Alarm 1	Alarm In	05/18/2004 01:50:48 PM

To see particular event of activated time, move the arrow button of the Front Panel or Remote Controller to the desired time range.

Following is the category indicated on the Event Viewer.

1. Alarm by Sensor
2. Alarm by Motion
3. Alarm by Video Loss

Select the time and press [Enter] or [?] button of the Front Panel or IR Remote Controller, to playback the image of the time with activating event.

Note In case the Alarm does not activate even though the alarm input setting had been done, check the alarm connection port of the product's rear panel.

4.4.4. Go to the First

Go to the first screen of the recorded image. This is the oldest image recorded.

4.4.5. Go to the Last

Go to the last screen of the recorded image. This is the latest image recorded.

5. Setting

To operate EDNS2000 series system, appropriate setting values in the setting menu are necessary. Users can either input or change the settings values listed in the table below.

Main Classification	Sub Classification	Setting Category	Default
Recorder	General	Resolution	352x240
		Sequence Dwell	3
		Spot Dwell	3
		IR Remote Controller	00
		Language	English
	Date & Time	Date and Time	
		Date Format	MM/DD/YYYY
		Time Format	AM/PM
		Daylight Saving	US
	Backup	Device	
		From	
		To	
		Size	
	Disk Format	HDD Disk	
Size			
Passwords	Admin		
	User1~User5		
Log Off			
Camera	Common	Title	CH no.
		Security Mode	Off
		Show Title	Security
		Auto Deleting	None
	Recording	IPS	30
		Quality	Standard
		Sensitive	80
		Area	Select Entire Area, (Tracking : Off)
		Audio	None
		Record	ON
		Schedule	Select Camera
	Color	Bright	0
		Contrast	0
		Color	0
		Tint	0
	PTZ	Protocol	None
		Address	0
Audio	Audio On/Off	Off	
	Two Way Audio	Off	
	On/Off	Off	
Alarm	Alarm In/Out	Camera	None
		Out	None
		IPS	30
		Mode	Set
		Dwell	5 sec
		Pre-Alarm	0 sec
		Type	N/O

Main Classification	Sub Classification	Setting Category	Default
Alarm	Motion Alarm	On/Off	Off
		Out	None
		IPS	30
		Dwell	5 sec
		Pre-Alarm	0 sec
	Video Loss	On/Off	Off
		Alarm Out	None
	Smart Alarm	Smart Alarm	On
Alarm Out		1	
Dwell Time			
Network	IP Setting	IP Address	192.168.000.XXX (MAC Address Lowest Value)
		Subnet	255.255.255.000
		Gateway	192.168.000.001
		Mac Address	
		Band Width Limit	
	Dynamic IP Server	Dynamic IP Server	
		UDP Port	
System	System Information	Signal System	
		Software Version	
		Firmware Version	
		Disk Usage	
		IP Address	
		MAC Address	
	System Log	Log Number	
		Log Type	
		Date/Time	
	System Upgrade	Select	
		HostAddress	
		Current Version	
		New Version	
	Import Setup	Device	
		Current Version	
		New Version	
	Export Setup	Device	
		Current Version	
Factory Default			

5.1 Recorder - General

Set general user environment of the system.



Use the button of the Front Panel or Remote Controller to select the category and press [Enter] button. Then, detail menu of each category will appear.



5.1.1. Resolution

Select resolution for the recording image. In here, the resolution means required horizontal and vertical pixel number of a page. The resolution is indicated as (horizontal) X (vertical) pixel number. Thus, select one setting from 352×240, 704×240, 704×480. Default is 352×240. As the resolution number increases, the picture quality is higher. In fact, 352×240 is VHS level and when high quality camera is used, 704×480 show DVD level picture quality. When the picture quality gets higher, the storage capacity is bigger and the recording period will be shorter. Thus, selecting appropriate resolution according to the situation is important.

Note The storage capacity for the same image will differ. That is, image per byte is ratio to the image dimensions (horizontal x vertical) thus 704×240 is twice the size of 352×240 and 704×480 takes about 4 times the storage capacity.
Therefore when high resolution is selected for the same period, the storage capacity taken up will be larger and the storage period will be shorter on the same Hard disk capacity.

Note For the same resolution, frame per byte size will vary according to various reasons such as recording picture quality setting, movement, complexity of the image and noise. Therefore, total recording period will differ hugely according to the image particularity.

- 352×240 : Standard Quality Standard 3~5KB
 - 704×240 : Standard Quality Standard 5~10KB
 - 704×480 : Standard Quality Standard 10~20KB
-

5.1.2. Sequence Dwell

When realtime image mode is in automatic sequencing mode, set the time interval between each screen sequence.

Sequence Dwell function is for the user to select certain time interval between each page.

Example, when sequence function is activated on the 1-screen mode, the next screen will be shown in sequence according to the set time interval. By pressing [SEQ] button of the Front Panel or Remote Controller, activating can be done. Possible setting limit is 1~60secs and default is 3 seconds.

5.1.3. Spot-out Dwell

Set the screen sequencing of the connected monitor, which had been connected to the product by external output.

Setting can be done by 1~60secs unit. External output cannot use other functions except seeing the image on the screen.

5.1.4. IR Remote Controller

An IR Remote Controller ID can control several units at once using one remote controller. Thus, ID will be required to be set to control each unit with one Remote Controller.

Below is method to set the ID of the IR Remote Controller. Default ID is 00.

1. Insert battery to IR Remote Controller. (AAA Size×2)
2. Press [F1] and [F2] Button of IR Remote Controller together at once for more than 2 seconds.
3. Check if the LED had been lightens up on the IR Remote Controller.
4. Press the ID Number between 00~99 by using the number button of the IR Remote Controller (ex: 03, 55).
5. By using the direction key on the Front Panel, designate the ID number as same as what has been set on the IR Remote Controller
6. Save the ID setting by pressing the [OK] button on the screen.

Note All the systems have same ID as default when it is out from the factory. Therefore, if same default value is used, one IR Remote Controller will control several systems at once. To prevent this, it is advisable to set own ID for each system. It is easy to change the ID of the IR Remote Controller. The user can change the Remote Controller ID to control several systems separately.

5.1.5. Language

EDNS2000 series supports 3 languages. According to the environment, the user can select among English, Korean or Japanese. Select the language and the entire menu will change to the selected language. The following below is the screens when Korean and Japanese had been selected.



[Korean Menu Screen]

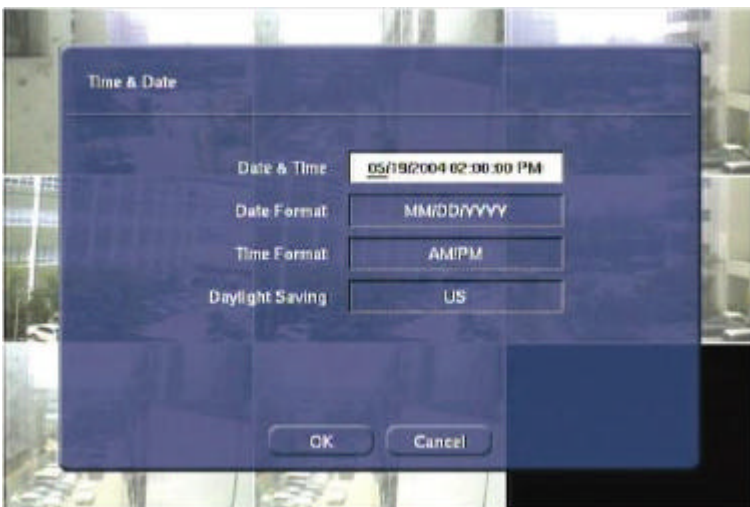


[Japanese Menu Screen]

5.2 Recorder - Time & Date

Set the date and time of the system. Below is the setting method to set the date and time.

1. Use the up and down button of the Front Panel or IR Remote Controller to move to the desired category.
2. Press the [Enter] button of the Front Panel or IR Remote Controller to start editing.
3. Allocate the cursor by using the left and right button of the Front Panel or IR Remote Controller for editing and use the up and down button to change the value.
4. Press the [Enter] button of the Front Panel or IR Remote Controller and the editing will be finished.



5.2.1. Date and Time

Insert exact date and time. Press [Enter] button and the state will change to input date. Input the time and date of the system accurately as possible as it plays an important role in solving any problem with recorded image or event log.

The current time and date is stored in each recorded images with precision, and they are displayed during playback.

Be cautious that although the time and date is stored in recorded images are wrong, they cannot be altered afterwards due to encryption.

Note Users can change the time and date to the future without any problem. However difficulty arises when changing it to the past (the same files might exist in the hard disk). Therefore, under complex recording setting, unexpected problems might arise in the system.

Note When a long time has elapsed after setting date/time, it can be distorted. To maintain exact time, date/time setting should be set once a month.

5.2.2. Date Format

Set the date display format. Use the arrow button to select the desired format in the date display format.

5.2.3. Time Format

Set the time display format. Time format can be selected either by 24-hour or 12-hour base (AM or PM).

5.2.4. Daylight Saving

Select the daylight saving time for each country. Daylight saving time setting is automatically processed when country is selected. Supported countries are displayed in the table below.

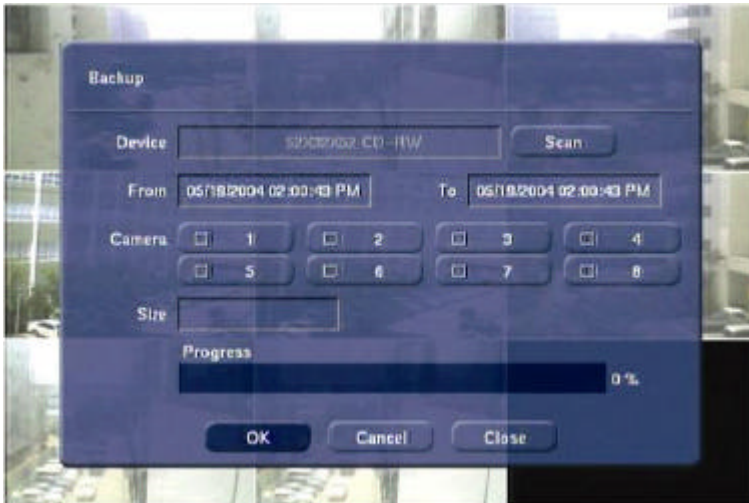
No.	Country	Representative Region	No.	Country	Representative Region
1	None	GMT	2	Australia	Australia/Melbourne
3	Austria	Europe/Vienna	4	Belgium	Europe/Brussels
5	Brazil	Brazil/East	6	Canada	Canada/Eastern
7	Denmark	Europe/Copenhagen	8	Egypt	Egypt
9	Finland	Europe/Helsinki	10	France	Europe/Paris
11	Germany	Europe/Berlin	12	Greece	Europe/Athens
13	Israel	Israel	14	Italy	Europe/Rome
15	Mexico	Mexico/General	16	Holland	Europe/Amsterdam
17	Norway	Europe/Oslo	18	Poland	Europe/Warsaw
19	Portugal	Portugal	20	Russia	Moscow
21	Slovakia	Slovakia	22	Spain	Europe/Madrid
23	Sweden	Europe/Stockholm	24	Switzerland	Europe/Zurich
25	UK	Europe/London	26	US	US/Eastern

5.3 Recorder - Backup

There is two kind of method to backup recorded data in the EDNS2000series. First method is using the CD-RW Drive (selected specs) to backup by CD and second method is using the USB external storage device for backup.

Use the CD-RW Drive or USB Device attached to the EDNS2000 series to backup the recorded images. Press the [Backup] button on the IR Remote Controller and the following screen will appear.

Note The specifications of the CD-RW Drive will be shown differently, according to the model. Refer to the CD-RW Drive manual for detailed information.



Error message will appear when the CD-RW is not installed or not properly connected.

Note Consult with your vendor if detailed information of the CD-RW is required.

Note The following is the list of media supported in the internal CD-RW of the EDNS2000 series.

CD-R :

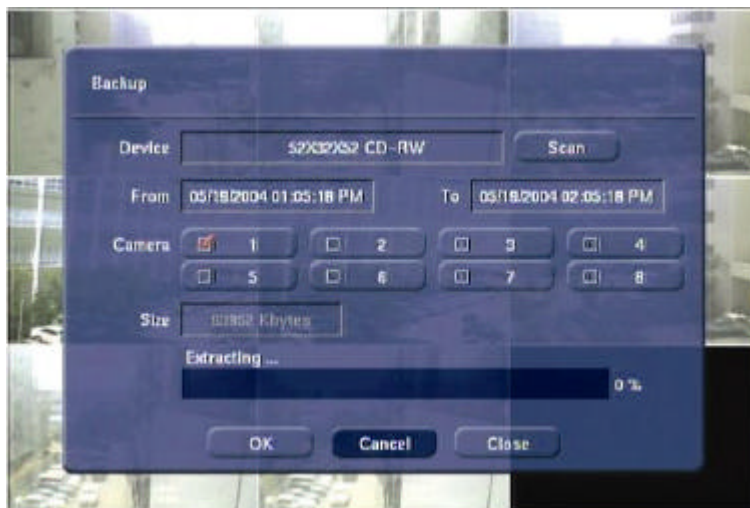
Acer, AMT, CMC, Kodak, LeadData, Maxell, Mitsubishi Chemical, Mitsui, Nan Ya, Philips, Princo, Prodisc, Ricoh, Ritek, Sony, Taiyo Yuden, TDK, Verbatim, Yamaha

CD-RW :

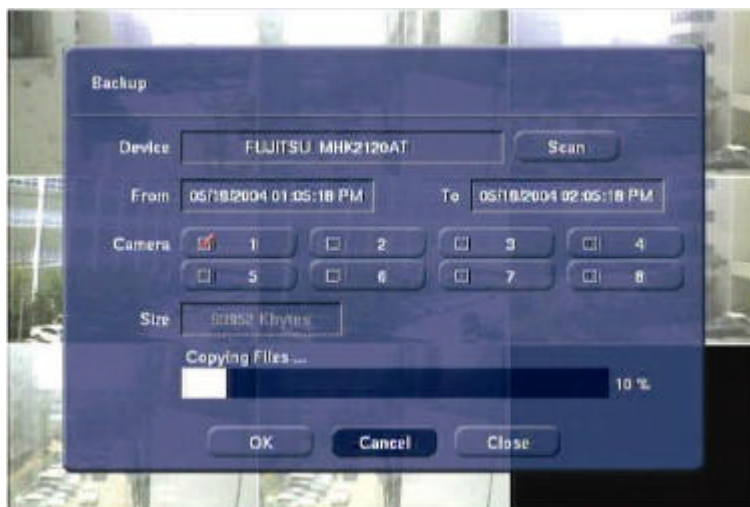
Acer, AMT, CMC, Digimaster, Maxell, MaxMax, Melody, Mitsubishi Chemical, Philips, Plextor, Prodisc, Ricoh, Ritek, Sony, TDK, Traxdata, Verbatim, Yamaha

Enter each item on the screen below to backup recorded images.

1. Select the recording start time for backup.
2. Also, select the recording end time for backup.
3. Select channels to backup. The user can select several channels together, but if the backup data capacity is more than the storage capacity, backup will not proceed. Select the channel by using the cursor and pressing [Enter] button.
4. After selecting all the items, press [Next] button to proceed to the next screen.
5. Extract the file for backup.



6. Copy file to backup device.



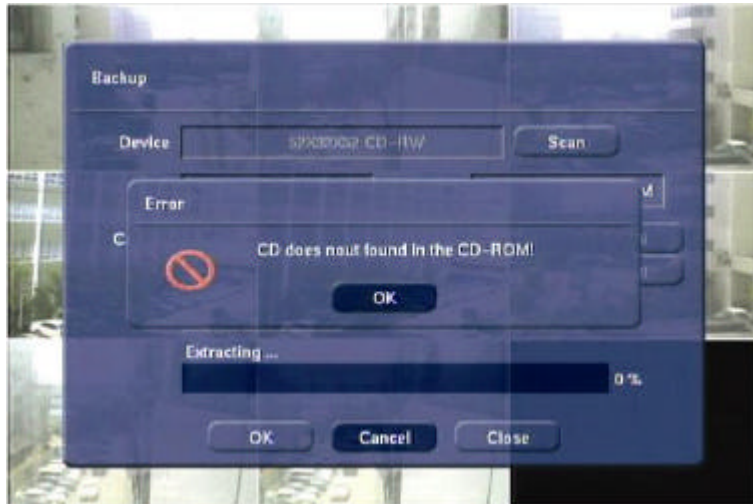
7. When the backup has been done properly, the message as below will appear.



In case the operation had been canceled while backup, the error message below will appear.



In case the CD-R Media (Blank CD) for backup has not been inserted on the drive, the following error message as below will appear.



In case the space of the CD-R is too small or the storage capacity is too huge, the following error message will appear.

Prepare larger capacity CD-R or decrease the time of the backup image.



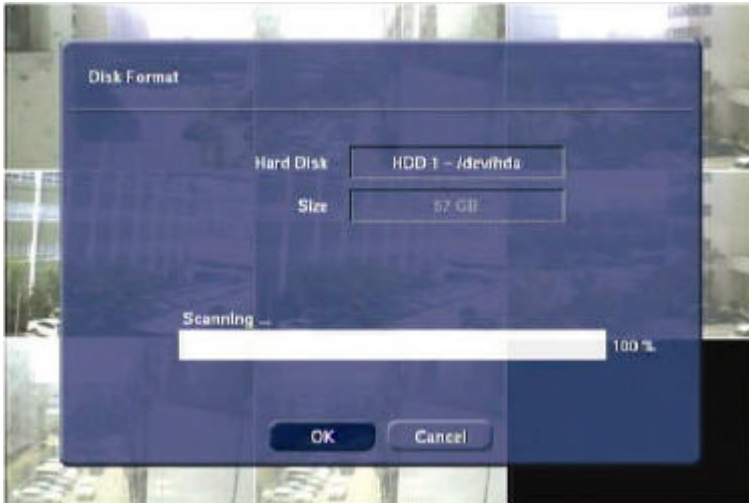
5.4 Recorder - Disk Format

Supports the attached HDD format of the system.

Note HDD format is not supported for the HDD that had been using, as surveillance will be vulnerable.

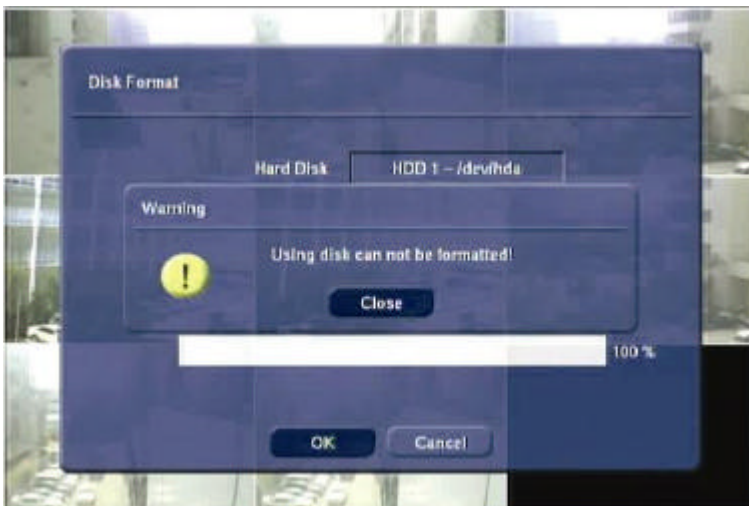
Select Disk Format category and the following screen will appear.

Select the HDD to format and check the capacity. Press [OK] button and the format will be proceeding.



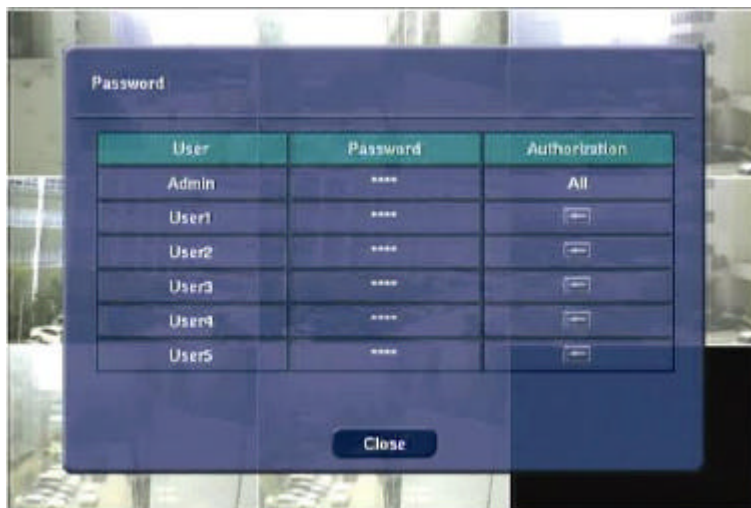
The HDD cannot be formatted when there is only one. It can be format when the HDD is installed for the first time.

Error message as below will appear while preceding the format. Thus, check the user and installation status.



5.5 Recorder - Passwords

Set system passwords for <Admin> and <User>. <Admin> can do the setting for the password only. Each user has to input designated password to log-on the system. Set the password after selecting [Admin] and [User] by pressing arrow button.



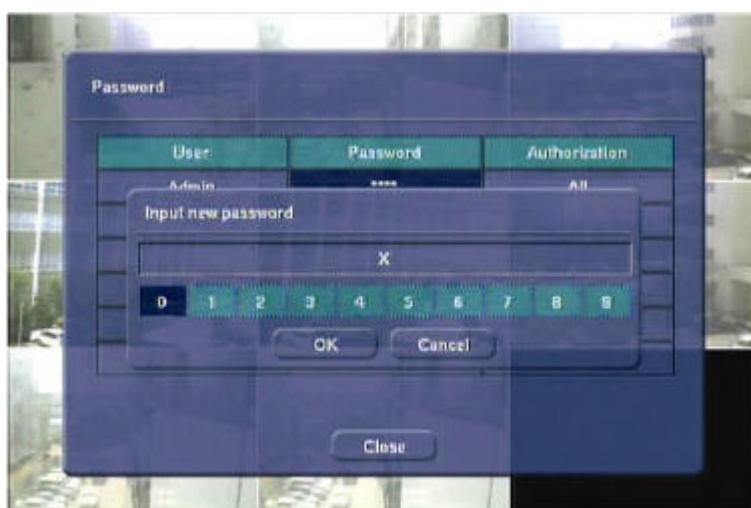
5.5.1. User

Select user to set the password. The administrator can select the <User> password and the entire category. Maximum <User> is five (5) and the settings can be done differently for all.

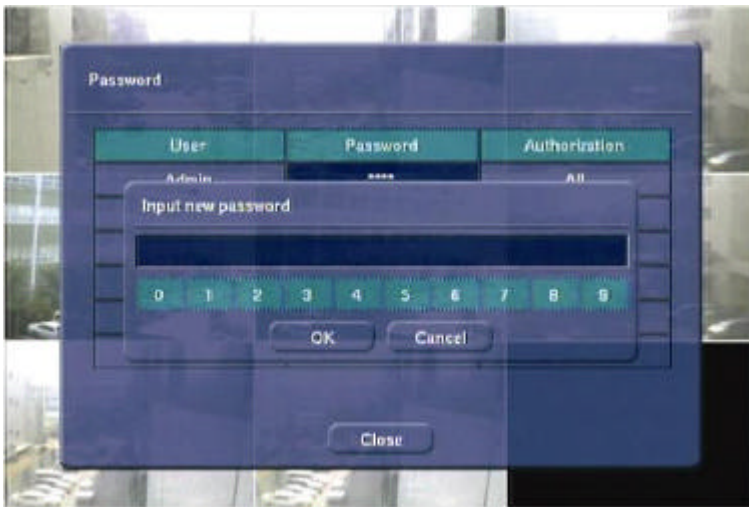
5.5.2. Password

Select the password to change. Max. no. of characters is four (4). The following screen as below will appear when [Enter] button on [New] category is pressed. Enter desired password and press [OK] button to save.

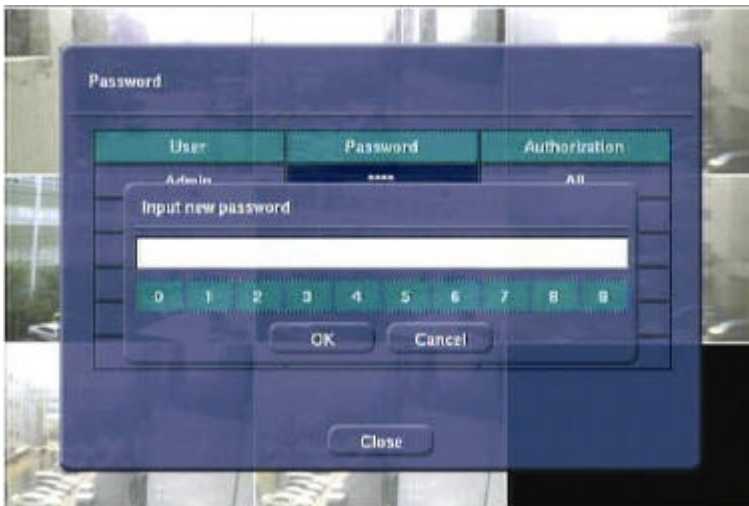
Note To go inside the editing state, use the [Enter] button of the Front Panel or IR Remote Controller and insert the number by using the number button of the remote controller. After finish editing to enter password, use the [Enter] button of the Front Panel or IR Remote Controller again.



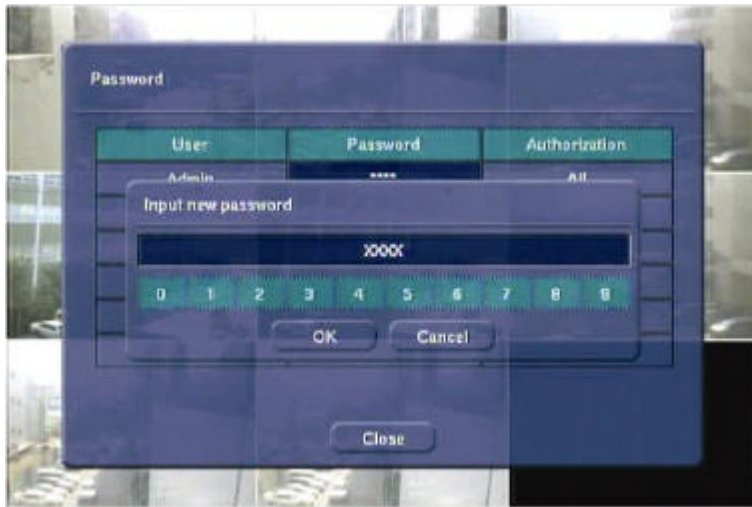
Press [Enter] button and the color of the password input box will change. Use the number button to move the cursor and press [Enter] button before inserting the number.



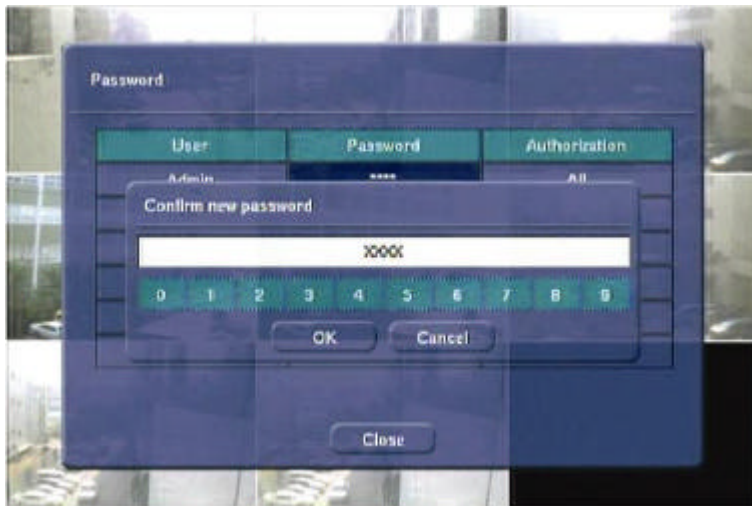
To insert the password by using the remote controller's number button, press [Enter] button again once more on the input column. Then the column will change to white thus password can be set by using the number button.



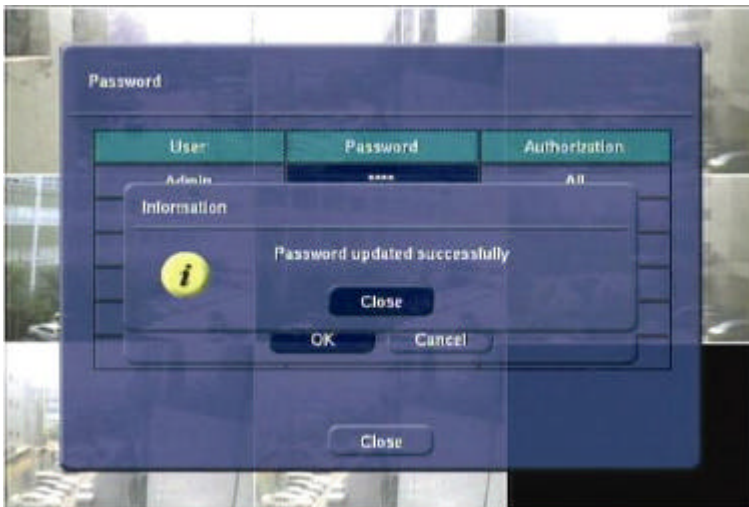
Input a new password.



After inputting password, input the same password again.



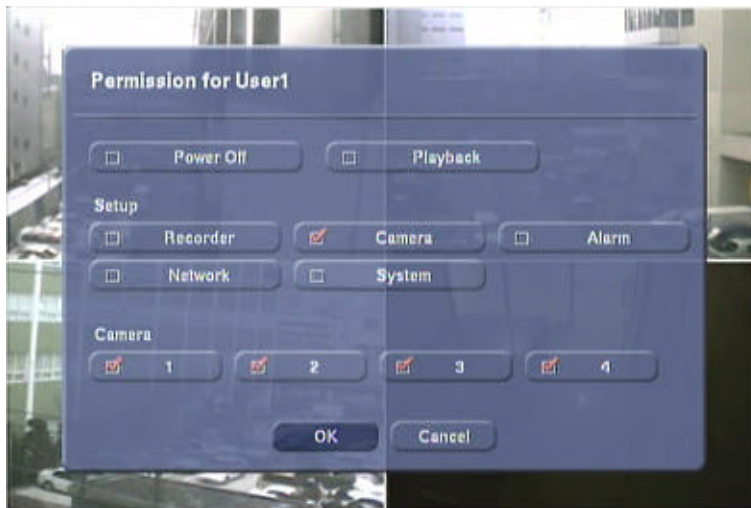
When the inputted password is completed, message will appear informing that the password had been entered successfully.



5.5.3. Authorization

This is the category to set authorization of <User>. Administer can use the entire category but the settings can be set differently depending on the <User>. Press [Permission] button and the following screen will be displayed.

Select categories used by each user and press the [Enter] button to check the categories.



The authorization of each category is as following.

- 1) Power Off : The power of the system can be on and off.
- 2) Playback : Recording image can be playback.
- 3) Setup : Each category can be set at the system setup.
- 4) Camera : Only selected camera image can be seen, depending on <User>.

5.6 Recorder -Log Off

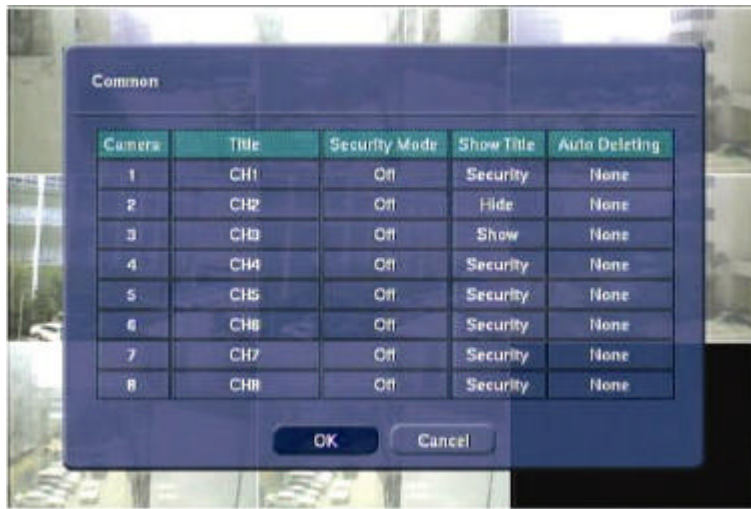
Log-off <User>, who has been Log-on presently. Log-on by entering <User> or <Admin> authorized password, to activate system or to go inside the setting menu again. Must Log-off after changing the setting value so that no unauthorized activation can be done.



Log-off prevents administrator and user from using.

Press the [Power] button on the Front Panel or IR Remote Controller to shut down the system.

5.7 Camera-Common



5.7.1. Title

Input the camera title of selected camera. Inputted camera title is displayed as OSD (On-Screen Display) and is also displayed on the recorded files. Therefore when the file is playback on the system or remote site, the camera title will be indicated on the image file during playback.

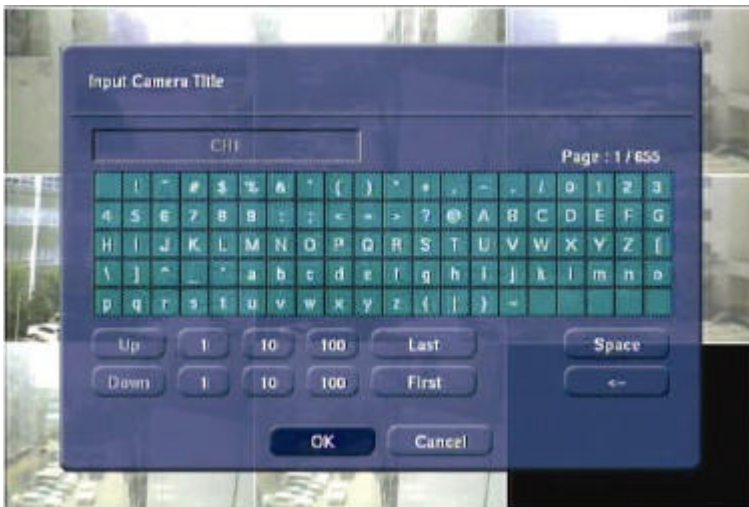
Default camera title is " CH*n*" where *n* is the channel number. Maximum of 15 characters can be inserted, including capital/small letters, numbers or spaces.

The following screen shows virtual keyboard to input letters.

The EDNS2000 series supports Multilanguage and special letters to input camera name. There are language and special letters to input on each page.

Following is method to input each language and special letters.

- 1) Check the channel to input camera name.
- 2) Whenever the [UP] button is pressed, the page no. will go up. On the [Up] row, press [1] button and it will go up by one page, press [10] button and it will go up by 10pages, press [100] button then pages will go up by 100pages. Press [Last] button and it will move to the last page.
- 3) Press [Space] button to have space between letters.
- 4) The page number will go down whenever the buttons on the [Down] row is pressed. It is same as using the buttons on the [Up] line.
- 5) [-] button is pressed to erase the inputted letters.



Note Refer to " Appendix " for Multilanguage and special letter on each page.

5.7.2. Security Mode

Set security mode of image screen. When this mode is set up, image cannot be shown in the monitor. In case the recording is set; recording will be in progress but will be not shown on the monitor.

5.7.3. Show Title

Select to display <Security Mode> or <Channel Name> on the monitor screen. On No. 1 and 2 channels, the <Security Mode> is "On". On <Show Title>, Hide, Show and Security can be selected. Hide means, no word is displayed on the screen and Show means the channel name is shown. Security is indicated as Security Mode. When the screen is indicated as Security Mode, no image is displayed on the monitor screen but recording is proceeding continuously.



5.7.4. Auto Deleting

Set recording periods for each channel. Recording period can be set minimum 1 day to maximum 30 days. In case the recording period is set as 30 days, the data after 30 days will be deleted automatically. When 1 day is selected, it will be applied from the next day. To save the data for long period, backup the data before automatic backup.

Note The recorded data will not be deleted until the disk space is full when it is set as None.

5.8 Camera-Recording

Set the desired environment related to camera usage. The screen below shows the setting related to recording.



5.8.1. IPS

Set frame per second for the recording image connected to each camera, which cannot be exceed NTSC: 30fps, PAL: 25fps. Remaining frame number is indicated at the left bottom of the screen whenever the frame number of each camera is modified.

5.8.2. Quality

Set the recording quality for the corresponding channel according to resolution set. The picture quality can be selected from 4 stages and they are Highest, High, Standard, Lowest. The setting value directly influences the byte size per image. For example, the byte size decreases as quality goes lower. In this case, blocking (mosaic) phenomena tends to appear, which is the artifact caused by high compression. In contrast, blocking phenomena disappears as quality goes higher. In this case, the required storage space per image increases, which leads to shortening of total recording period. Therefore, give consideration to the necessary recording period, importance of each camera image, and quality of analog signal when setting the recording quality. If extending the recording period in high quality, refer to the next explanation Sensitivity. The byte size decreases when the sensitivity setting decreases.

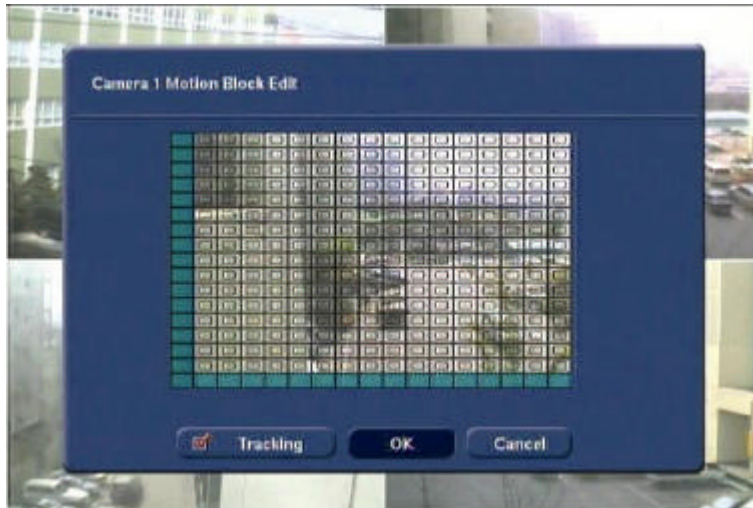
5.8.3. Sensitivity

Set the motion sensitivity value based on motion detection between 10~100. As the value gets higher, the movement will be saved without skipping, and as the value gets lower value skips small movements to extend the recording period.

The default is 80, and it is recommended not to change, with the exception of special cases.

5.8.4. Area

Set motion detection area. Default value is selected as entire area and when the motion detection area is selected, the movement will be detected according to the area selected. Motion detection will not be done if the area is not set.



Set the area by using the direction key of the Front Panel or the IR Remote Controller. The method to set the area is as below.

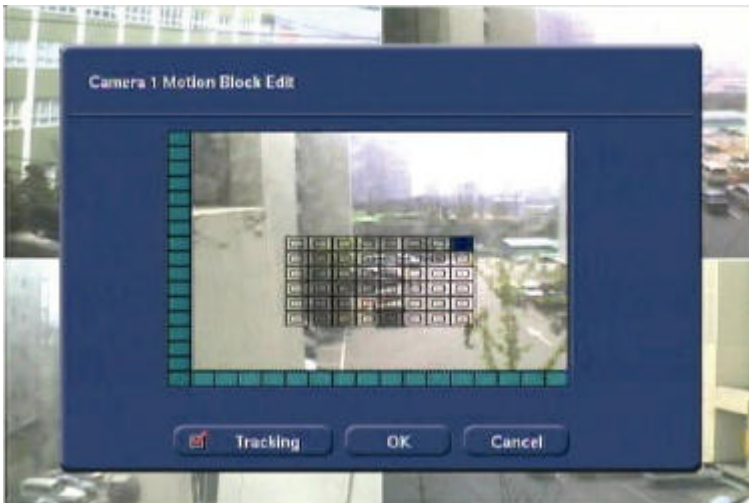
- 6) Use the cursor to move to the area for setting on the screen.



- 7) Press [Enter] button and the color of the cursor will change. Then, use the direction key to increase the setting area.

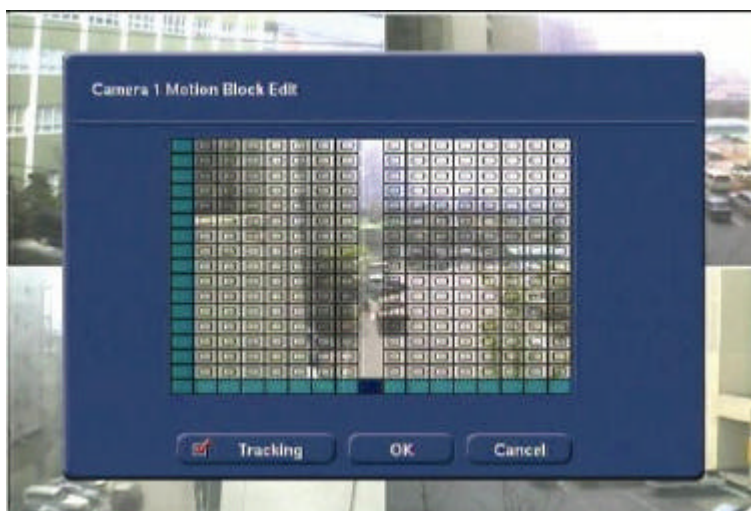


- 8) Once the setting area is completed, press [Enter] button for confirmation.

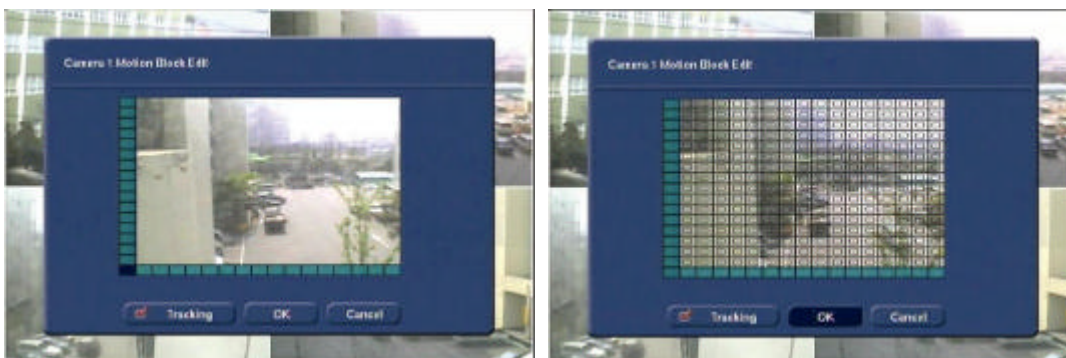


- 9) Press [OK] button to save the content of the settings.
10) Once the area is set, the box will be check as the picture above.

11) To set the row and line press the green box of the screen corner.



12) To set the entire area, press the left bottom corner of the screen.



5.8.5. Tracking

It is function to trace and indicate the movement detected on the area set. Yellow box will be indicated on the screen whenever there is movement on the live display screen. Recording will not be influenced even though [Tracking] function is not used.

5.8.6. Audio

Select the audio channel to use among the 4 audio input channels.

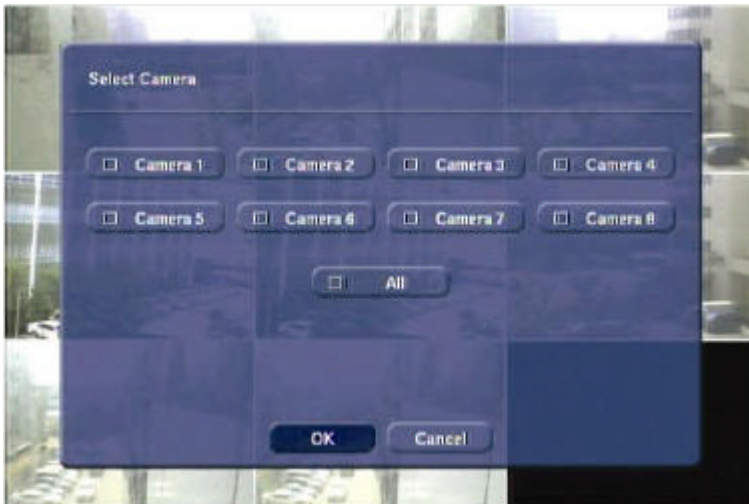
Note Use amp-equipped device while connecting to the audio input/output device. Although audio is mapped from this menu, audio recording cannot be done if the audio is not on from Camera -> Audio.

5.8.7. Record

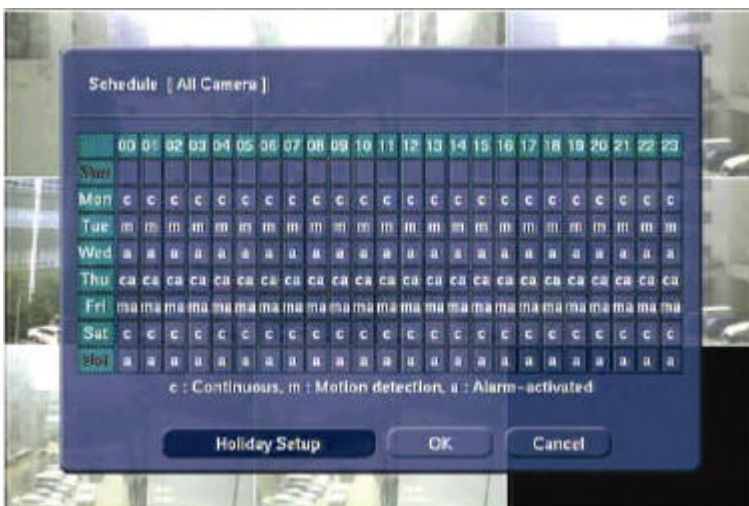
Controls whether to record the channel connected or not. If recording is not required on the selected channels, even when the camera signal is inputted, set the recording of the corresponding channel as [OFF]. Then, recording of the channel stops without pulling camera BNC cable off. [ON] or [OFF] can be selected. The default is [ON].

5.9 Camera-Schedule

Set recording schedule for each camera. First, select the camera to set schedule.



The following picture shows the status of schedule setup for all cameras. Number indicates time. Recording schedule can be set per hour. Initial indicates the status of recording. The status of recording will be displayed on the upper right of each channel when the live channel is seen.



The content for each initial is as following.

- 1) c: Continuous : Continuous recording
- 2) m: Motion detection : Motion detection recording
- 3) a: Alarm-activated : Alarm-activated recording
- 4) ca : Continuous + Alarm-activated recording
- 5) ma : Motion detection + Alarm-activated recording

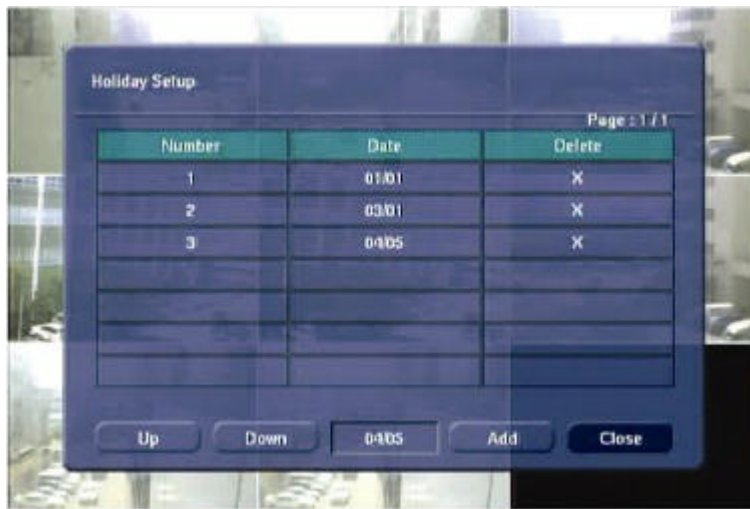
Note In case the recording is done with ca or ma, the recording will be recorded in continuous or in motion detection. When alarm activates, concentrated recording will be done according to the set IPS on alarm.

After pressing [Holiday Setup] button, the below screen is displayed.

Use this function when assigning other holiday other than Saturday and Sunday. The method to assign holiday is as following.

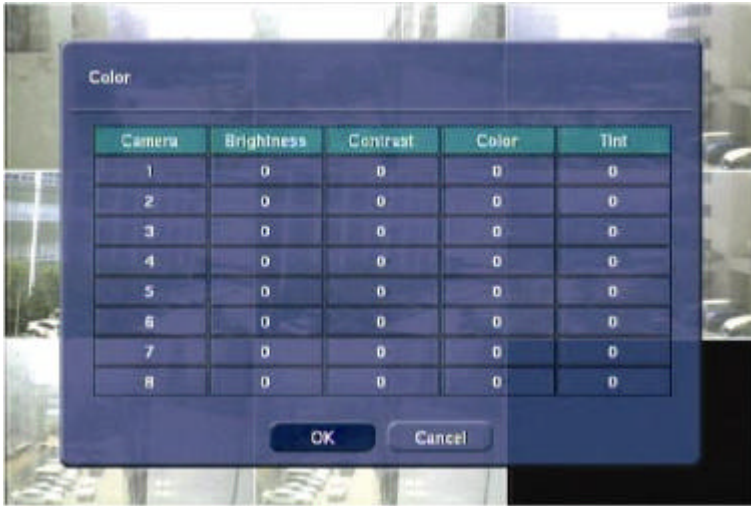
1. Move cursor to **01/01** (month/day) on the center of bottom.
2. Put cursor in the number section and input month/date by pressing [Up] and [Down] button on the Front Panel or IR Remote Controller.
3. After inputting desired holiday date, press [Add] button on the right side.
4. Check whether assigned date has been inputted on the screen.
5. To move screen, use [Up] and [Down] button.
6. Close the screen by pressing [Close] button and enter schedule setup screen.

It will be included under **Sat** in **Hol** category when it is holiday. Set recording schedule from the category.



5.10 Camera-Color

Set the brightness, contrast, color and tint of the connected camera. Each setting value can be set - or + value from present value.



5.10.1. Bright

Adjust the brightness (shades) of the channel. If the entire image is dark or bright to a great extent, adjust to the adequate value.



5.10.2. Contrast

Adjust the contrast, which is the ratio of brightness to darkness of the image. Greater the value, bright side becomes brighter, and dark side becomes darker. In case the value is increased to the extent where too much saturation is not observed in the image, higher contrast can be helpful to display the image vividly.

5.10.3. Color

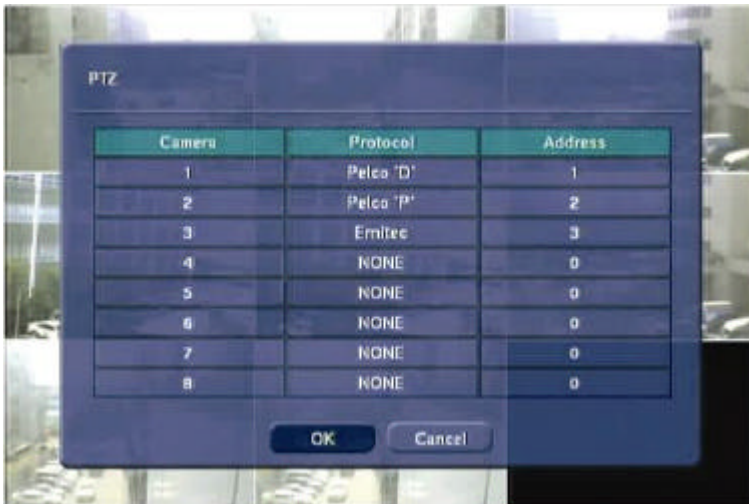
Adjust the color density. In most cases except for the deterioration of cameras or very low quality cameras, the adjustment of this value is not required.

5.10.4. Tint

Set the color hue of connected cameras. In most cases except for the deterioration of cameras or very low quality camera, the adjustment of this value is not required.

5.11 Camera- PTZ

Set the camera audio and P/T/Z environment.



5.11.1. Protocol

Set the protocol to control the P/T/Z controller connected to P/T/Z port on the back panel. P/T/Z controller is also called receiver or RX if it becomes separated from camera. Default is NONE, which indicates that the P/T/Z controller protocol is not set. Protocol currently supported is shown below.

1	Ernitec	2400 baud rate	no parity	8bit	1 stop bit
2	Kalatel	9600 baud rate	no parity	8bit	1 stop bit
3	Panasonic	19200 baud rate	no parity	8bit	1 stop bit
4	Pelco D	2400 baud rate	no parity	8bit	1 stop bit
5	Pelco P	4800 baud rate	no parity	8bit	1 stop bit
6	Scc-641	9600 baud rate	no parity	8bit	1 stop bit
7	Sensormatic	2400 baud rate	no parity	8bit	1 stop bit
8	Smart Scan	9600 baud rate	even parity	8bit	1 stop bit
9	VC_C4	9600 baud rate	no parity	8bit	1 stop bit
10	Vicon	4800 baud rate	no parity	8bit	1 stop bit

Set the controller address correctly for each channel after setting the protocol.

5.11.2. Address

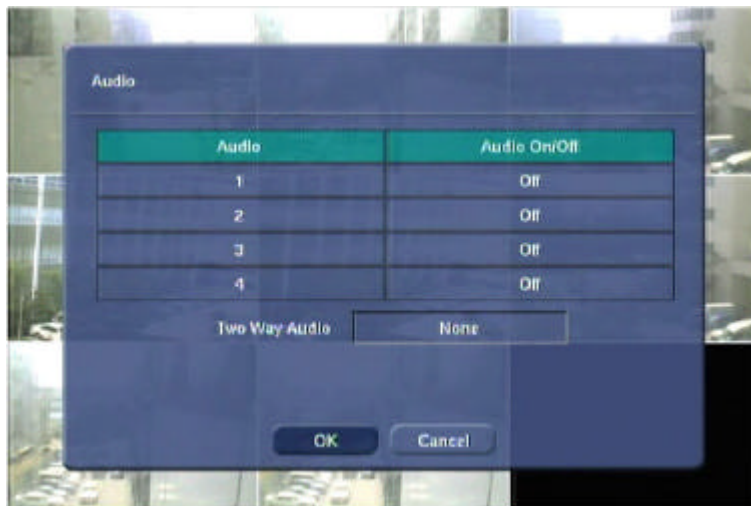
Set the P/T/Z driver address of the connected camera.

Check the below items for proper P/T/Z operation.

1. Check if the protocol of all P/T/Z controllers connected to the system is in accordance.
2. Check if the communication setting including baud rate of all P/T/Z controllers is in accordance with the assigned value for that P/T/Z protocol.
3. Check if the address of all controllers is in accordance with the controller address assigned in the setting menu for that channel.
4. Check if the power of the P/T/Z controller is turned on.
5. Check if wiring to P/T/Z controllers is correct.

5.12 Camera- Audio

Select whether to use audio recording. Select On/Off in the audio tap for each camera.
To use audio function, connect audio system (speaker and microphone) when setting system.



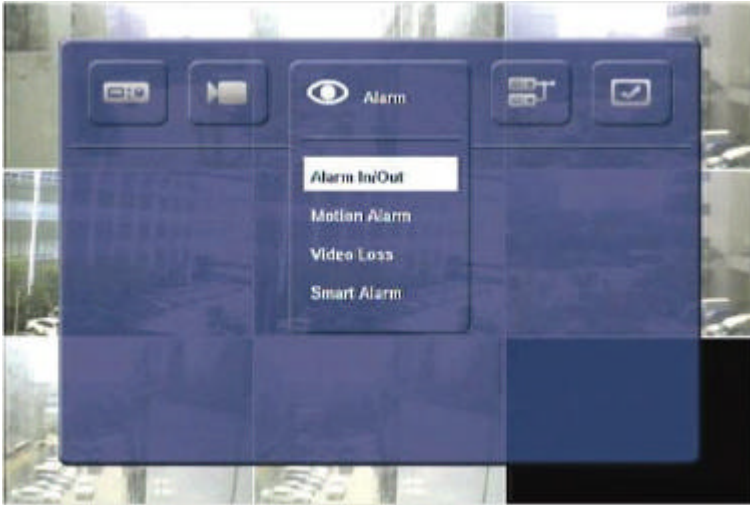
5.12.1. Two - Way Audio

Two - Way Audio is function to hear voice and talk from both sides of the system and RemoteAgent. Two - Way Audio function can be used on only one channel from entire channels. When the Two Way Audio function is used, the audio will not be recorded even though a channel's Audio category has been set to record.

Note Speaker and microphone should be set up in the connecting system and PC with connected RemoteAgent.

5.13 Alarm-Alarm In/Out

This is the setting menu screen for alarm-activated recording and camera, connected with EDNS2000 series system.



5.13.1. On/Off

Select whether to activate alarm. Press [Enter] button and select On/Off.

5.13.2. Camera

Select camera channel number to connect with the alarm.

When sensor activates, the image of the corresponding camera image will be recorded according to the frame set. Recording time of the sensor changes according to sensor type and alarm schedule. Change back to previous status if recording is done.

5.13.3. Out

Select connected number (1,2 or None) to use for activating alarm.

5.13.4. IPS

Set the desired number of frames for the recording of the connected camera. Set no. of frames according to each camera. When a, ca, ma has been set on the schedule, the recording will be done according to the frames set on the IPS.

5.13.5. Mode

Select either Set or Duration depending on the desired alarm action.

Set:

Once the sensor is detected in this mode, the camera will be recorded according to the frame set during setting time in Dwell tab. That is, recording will be done during Dwell period from sensor input activation even if the sensor is cut off.

Duration:

In this mode, the alarmed camera will be recorded while sensor is activating.

A channel starts record while other channels in the group stops recording, whenever the sensor is detected. Also when the relay (output) for the sensor has been set, it will activate together with the sensor.

5.13.6. Dwell

Set the recording period from the start of sensor input activation. During this period, the corresponding camera image will record according to the frame and alarm (relay) output set. The recording stops and alarm output is turned off when the setting period is elapsed. Set the alarm-operating period (1-99 seconds).

5.13.7. Pre-Alarm

Set recording time just before perceiving sensor input. Pre-Alarm time is the opposite of Dwell time and it intensively records the time before alarm activates.

For example, Pre-Alarm is set 20 seconds. If the alarms activates at 14:30:00 on 14th of February, the recording starts from 14:29:40 on 14th of Feb.

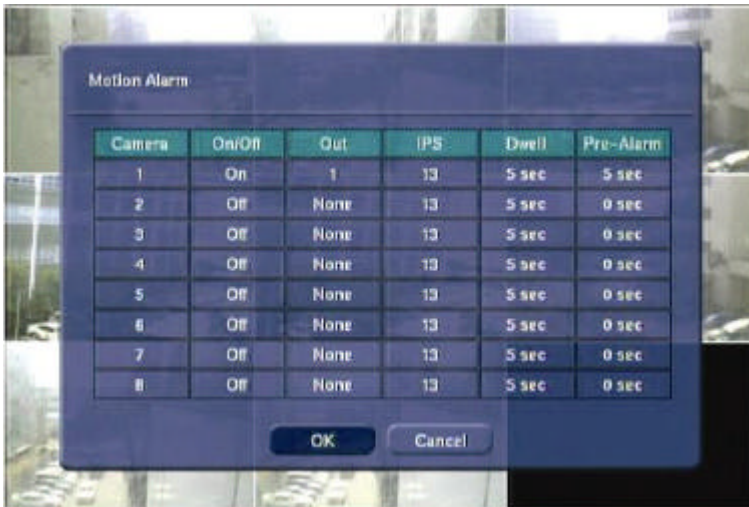
5.13.8. Type

Select the sensor type between N/O (Normal Open) and N/C (Normal Close), connecting to alarm input plate. Circuit of N/O type is usually open, and the activation of the sensor occurs at the time of close, and N/C type works the reverse way.

Note Check the setting of the sensor type (N/O or N/C), if the sensor does not operate properly. The alarm might not function if the actual connecting sensor type and the sensor type in the system setting are inconsistent.

5.14 Alarm-Motion Alarm

Set alarm activating, recording frame and time for motion detected on camera image. Set, while using Motion Alarm. To use the Motion Alarm, set <m+a> at the Schedule



5.14.1. On/Off

Select whether to use motion detection activated with each channel.

5.14.2. Out

Select connected number (1,2 or none) of output (relay) to use when the alarm activates.

5.14.3. IPS

Set no. of frames for the camera image connected while alarm activating. Each camera can be set in different no. of frames.

5.14.4. Dwell

Set the period of recording when motion ends after motion activates. This is different from Dwell time in [Alarm In/Out] category. The Dwell time in [Motion Alarm] category is period of recording from the point when the motion disappears after motion activation.

5.14.5. Pre-Alarm

Set recording time just before perceiving alarm input. Pre-Alarm time is opposite of Dwell time and it records the time before motion activates.

For example, Pre-Alarm is set as 20 seconds. If the alarms activates at 14:30:00 on 14th of February, the recording starts from 14:29:40 on 14th of Feb.

5.15 Alarm-Video Loss

Set to display alarm when the connected camera BNC cable is disconnected or has been pulled off accidentally.



5.15.1. On/Off

Select whether to use Video Loss connected with each channel.

5.15.2. Alarm Out

Select connect number (1,2 or number) to use when activating alarm.

5.15.3. Dwell

Set the period for alarm output while Video Loss is activating.

5.15.4. Pre-Alarm

Set recording time before perceiving Video Loss. Pre-Alarm time is opposite of Dwell time and it records the time before Video Loss activates.

For example, Pre-Alarm is set as 20 seconds. If the alarms activates at 14:30:00 on 14th of February, the recording starts from 14:29:40 on 14th of Feb.

5.16 Alarm-Smart Alarm

The user can set Smart Alarm indication and alarm dwell time relating to hard disk pre-hand before error or problem occurs on the hard disk installed.



5.16.1. Alarm Out

Select connection number (1, 2 or None) of output (relay) used while activating alarm.

5.16.2. Dwell Time

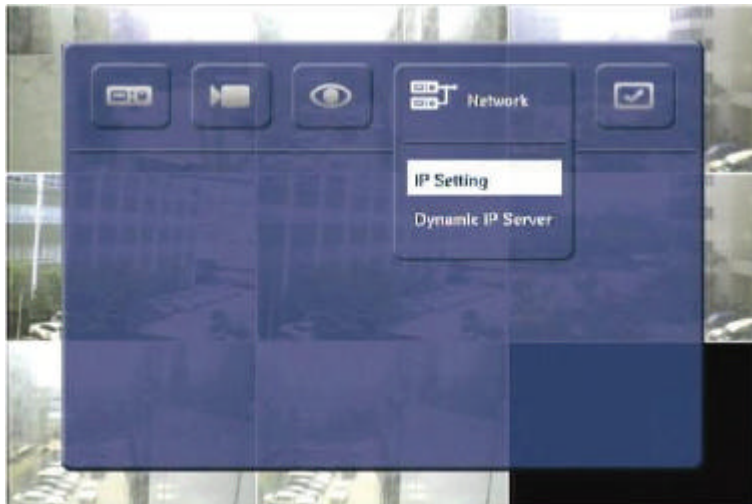
Set the alarm activating time showing on the screen when the error had occurred on the hard disk.

5.17 Network-IP Setting

Set the network environment of the system.

Input the numbers, using direction key or number buttons of remote controller.

Note Consult your vendor if user wants to use a modem.



5.17.1. Type

Select network connect type. Select either LAN or DHCP.

5.17.2. IP Address

Input the IP address assigned to EDNS2000 series system.

Note Use fixed IP for system IP.
For system IP, use the IP that is not used by other PC or DVR.

5.17.3. Subnet

Subnet Mask address recognizes the subnet to which the system belongs. Default is 255.255.255.0. Consult network administrator for accurate information.

5.17.4. Gateway

This is the IP address of the network router or gateway. It is required when the user wants to connect through the external router from the remote. Default is 192.168.0.1.

Note Consult your vendor if network connection configuration is required.

5.17.5. MAC Address

The MAC address assigned to EDNS2000 series system is displayed. MAC Address cannot be modified.

5.17.6. Band Width Limit

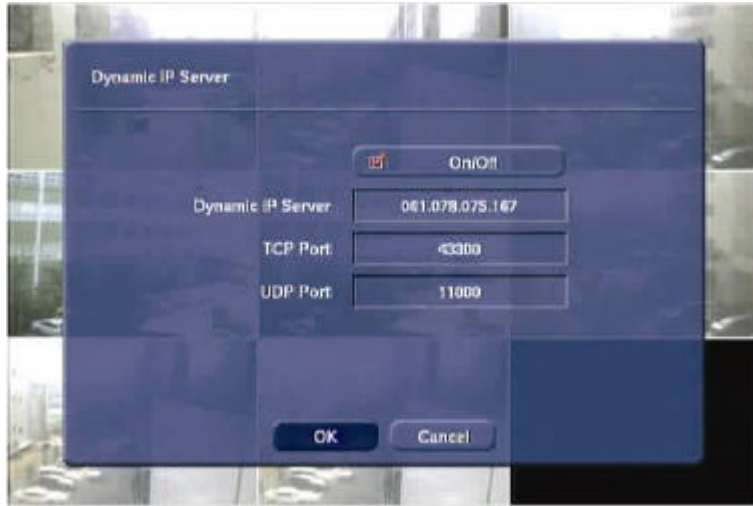
Set bandwidth when limiting network transmit speed. Check [Use Limit] category and set bandwidth. Below is the screen when setting bandwidth.



5.18 Network-Dynamic IP Server

Set network environment of system.

The number buttons on the IR Remote Controller can be used as direction keys. First, check [On/Off] category.



5.18.1. Dynamic IP Server

Input IP address of the Dynamic IP Server.

5.18.2. TCP Port

Input port number to communicate with Dynamic IP Server.

5.18.3. UDP Port

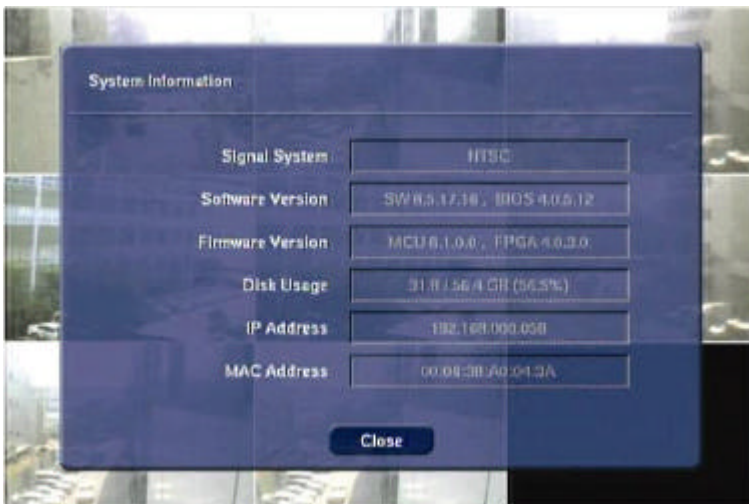
Input UDP port number to communicate with Dynamic IP Server.

Note IP address of Dynamic IP Server can be modified. Consult vendor about detail IP address and port number if abnormal operation happens, despite being set with default.

5.19 System-System Information

This is the system information screen of EDNS2000 series.

Note The details in the information screen can be different, based on the model number and system environment.



5.19.1. Signal System

The type of video signal is displayed: NTSC or PAL.

5.19.2. Software Version

Software version installed in the system is displayed.

5.19.3. Firmware Version

Firmware version of the system is displayed.

5.19.4. Disk Usage

Hard disk usage is displayed. (Used/Total HDD space (Remaining space%))

5.19.5. IP Address

IP address of the system is displayed.

5.19.6. MAC Address

MAC address of the system is displayed.

5.20 System-System Log

This is use to see information being used in the EDNS2000 series system.

To see more information, press the [Enter] button after moving cursor to the [Up/Down] button with direction button. Display previous or next page.



Log Number	Log Type	Date/Time
1720	Setup Begin	05/19/2004 03:14:12 PM
1719	Setup End	05/19/2004 03:14:11 PM
1718	Setup Begin	05/19/2004 02:26:42 PM
1717	Setup End	05/19/2004 02:26:40 PM
1716	Setup Begin	05/19/2004 02:25:52 PM
1715	Setup End	05/19/2004 02:25:47 PM
1714	Setup Begin	05/19/2004 02:05:18 PM

5.20.1. Log Type

These are the operations that happen in the system. The operations that happen in the system are briefly notified.

Displayed Log Type is displayed.

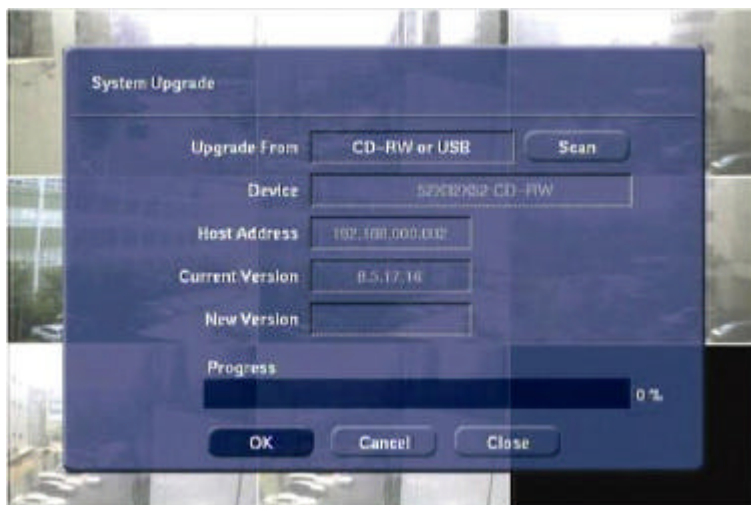
1. Power On
2. Power Off
3. Record On
4. Record Off
5. Setup Begin
6. Setup End
7. Playback Begin
8. Playback End
9. Disk Full
10. System Time Change
11. Smart Alarm HDD1
12. Log On
13. Log Off

5.20.2. Date/Time

Display Date and time of operations that happen in the system.

5.21 System-System Upgrade

This screen appears during system upgrade. Upgrade can be done through LAN, CD or USB.



5.21.1. Upgrade From

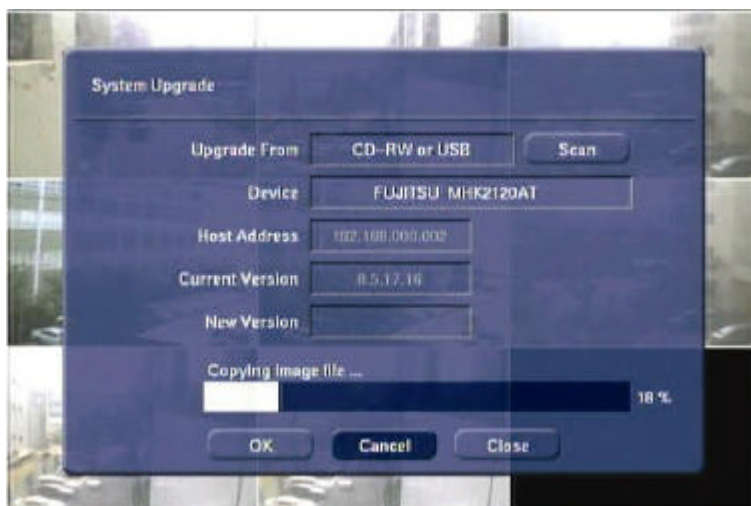
Select media to upgrade when upgrading system. Media is displayed when [Scan] button is pressed.

5.21.2. Device

Display type of selected upgrade media.

The following sequence is how to upgrade using the internal CD-RW.

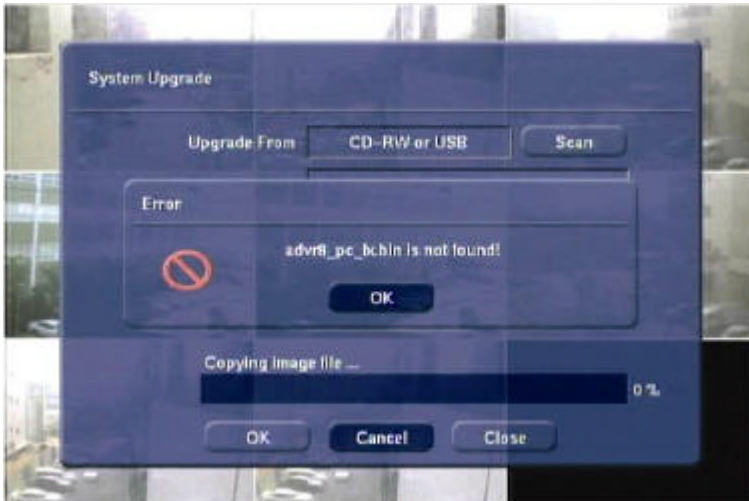
1. Prepare upgrade image CD.
2. Put the prepared CD inside the CD-RW of the system.
3. Select CD-ROM from Select category of the upgrade menu. Then, select the [Start] button. Copy upgrade file from CD.



- Upgrade copied file from the system.



- When the upgrade is completed without any error, no error message will be displayed and the system will automatically reboot after upgrade.



5.21.3. Host Address

Input the host server address when upgrading through TFTP server

5.21.4. Current Version

Displays the version of the software that is being used in the system.

5.21.5. New Version

Displays the version of the software that you want to set in the system.

5.21.6. Progress

Displays the progress while upgrading.

5.22 System-Import Setup

Import setting value from the recorded setting file. Display device list of connected USB and CD-RW when [Scan] button is pressed. The size of setting file is very small at Import/Export Setup, that only USB disk is supported. Therefore, this function is not available at the CD-RW. When [OK] button is pressed after selecting USB disk, display version information and set system.



5.23 System-Export Setup

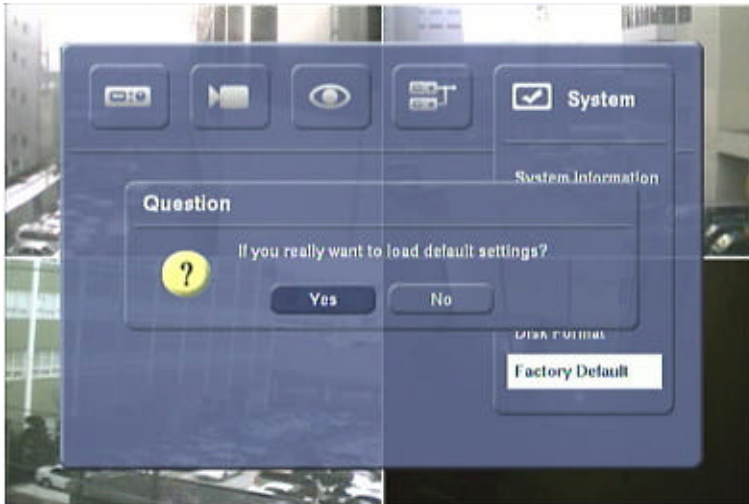
Export setting value at the system to the USB disk. Use Import to set value to other DVR.



5.24 System-Factory Default

This screen allows the users to return to the factory default setting. In this case, current setting values will be ignored and all the settings will return to factory default except the network setting and password.

All setting values, except for the network setting and passwords, return to default value when [Yes] button is pressed.



Note In the System Default setting, the entire values will be returned to the default setting, thus desired setting values should be kept separately for future use.

Below is applied to all the setting value and it is a screen, which appears when [Return] button is pressed on "Setup" menu.



6. Appendix

6.1 List of Multilanguage and special letters for Camera Input Title

	Language	Page		Language	Page
À	Basic Latin	1	¼	Number Forms	85
Á	Latin-1 Supplement	2	↕	Arrows	86
Â	Latin Extended -A	3	√	Mathematical Operators	87
Ã	Latin Extended -B	4	⊖	Miscellaneous Technical	90
Ɔ	IPA Extensions	6	⌂	Control Pictures	92
ˆ	Spacing Modifier Letters	7	⌂	Optical Character Recognition	93
◌̣	Combining Diacritical Marks	8	Ⓜ	Enclosed Alphanumeric	93
Ω	Greek	9	Ⓜ	Box Drawing	95
Я	Cyrillic	10	■	Block Elements	96
Я	Cyrillic Supplement	13	◊	Geometric Shapes	97
Ա	Armenian	13	☺	Miscellaneous Symbols	97
נ	Hebrew	14	⊕	Dingbats	100
ع	Arabic	16	⊕	Supplemental Arrows -A	102
क	Devanagari	23	⌂	CJK Symbols and Punctuation	123
ক	Bengali	25	か	Hiragana	124
ੴ	Gurmukhi	26	カ	Katakana	125
ક	Gujarati	27	ㄐ	Bopomofo	126
ଞ	Oriya	28	ᄒ	Hangul Compatibility Jamo	126
ச	Tamil	30	ᄒ	Kanbun	127
త	Telugu	31	ㄐ	Enclosed CJK Letters and Months	128
ಕ	Kannada	32	ㄐ	CJK Compatibility	131
ക	Malayalam	33	ㄐ	CJK Unified Ideographs	200
ก	Thai	36	가	Hangul Syllables	441
ລ	Lao	37	ꠘ	Private Use Area	574
ཀ	Tibetan	39	ㄐ	CJK Compatibility Ideographs	638
Ⴀ	Georgian	43	fi	Alphabetic Presentation Forms	643
ᄒ	Hangul Jamo	44	ᄒ	Arabic Presentation Forms -A	644
À	Latin Extended Additional	77	◌̣	Combining Half Marks	651
Ω	Greek Extended	80	Ⓜ	CJK Compatibility Forms	651
“	General Punctuation	82	Ⓜ	Small Form Variants	651
²	Superscripts and Subscripts	83	ᄒ	Arabic Presentation Forms -B	652
€	Currency Symbols	84	ㄐ	Halfwidth and Fullwidth Forms	653
◌̣	Combining Marks for Symbols	84	Ⓜ	Specials	655
™	Letterlike Symbols	85			

6.2 Specifications

		EDNS2000-4EPC	EDNS2000-8EPC	EDNS2000-16EPC
H/W	CPU	Geode x86 266MHz		
	RAM	128MB		
	HDD	Max. 3HDD (2HDD + CD-RW)		
OS		Embedded Linux		
Video Input		4ch	8ch	16ch
Loop-OUT		4ch	None	
Video Mode		NTSC / PAL Selectable		
Display Speed (NTSC/ PAL)		120/100fps	240/200fps	480/400fps
Screen Modes for Live Display		4/1/PIP	9/4/1/PIP	16/10/9/4/1/PIP
Recording speed (NTSC/ PAL)	352x240 /288	120/100fps (with Playback : 60/50fps)		
	704x240/288	60/50fps (with Playback : 30/25fps)		
	704x480/288	30/25fps (with Playback : 15/12.5fps)		
Monitor output		Main monitor output (Composite & S-Video, VGA) / Spot output (Composite)		
Recording Resolution		NTSC: 352x240, 704x240, 704x480 PAL : 352x288, 704x288, 704x576		
Byte Size per Image (Standard Quality)		3~5Kbyte @352x240 (PAL: 352x288) 5~10Kbyte @704x240 (PAL: 704x288) 10~20Kbyte @704x480 (PAL: 704x576)		
Compression methode		MPEG4		
Recording Modes		Continues, Motion, Alarm		
Recording schedule		Recording Schedule per camera		
Motion Detection		Support the Setting of Motion Sensitivity per Camera		
Sensor/ Camera/ Alarm I/O		M : N Mapping		
Audio Input/ Output		4 input / 1 output (ADPCM)		
Sensor/ Alarm		4 Dry Contact Input / 2 Relay Output		
P/T/Z control and port		PAN/TILT/ZOOM/FOCUS/IRIS, RS-485 port		
LAN		10/100 Ethernet		
Transmission Speed and No. of Connection		Same as Recording Speed for each Channel Max 16 ch Connection (16 video transmissions at the same time)		
Remote Transmission		Multi-to-Multi connection, Multi-channel transmission Live Viewing, Remote Playback and File Backup at the same time (Triplex-on-Remote)		
Remote Control		Remote PAN Tilt ZOOM/FOCUS /IRIS control		
Remote management		Remote Software Upgrade & Remote Software Upgrade		
CD-RW		Internal CD-RW (Option)		
External Backup Device		Support (Front USB Ports)		
System Recovery after Power Failure		Auto-Rebooting and Journaling File System Auto-Scan and Recovery for Data		
System Operation		Button on Front panel / IR Remote Controller / Jog / Shuttle		
Advanced Functions		Auto Page Sequencing, Event Log Viewer, Access control by Password Led indicator for Various status Pre-Alarm, Multi Channel Playback, Digital Zoom		
Storage Temperature and Humidity		-20~60 degrees celsius / 20~95%RH		
Operating Temperature and Humidity		5~40 degrees celcius / 20~80%RH		
Power		Single Phase AC115~230V, 50/60Hz (Select Switch)		
Dimension and Weight		380(W) x 66(H) x 370(D) mm, 6Kg		
Remote S/W		NetAgent S/W (24ch), RemoteAgent S/W (16ch)		
Standard Authentication		FCC, cULus, CE (EMC/LVD) – CLASS A		

* The system specifications can be modified without notification.

Standard spec. based on Oct, 1st. 2004