

USER'S GUIDE Ver.858

Workhorse **120-8**

English

Operating Instructions & User's Guide



Statement of Compliance with FCC

Model Name: Workhorse 120-8

This device complies with Section 15 of the FCC Rules. Operation is covered by the following provisions: (1) This device shall not cause harmful interference, and; (2) this device must accept any interference received including interference that may cause unintended operations.

Warning

Unauthorized reproduction of all or panel of this manual is strictly prohibited.

Cautions

To get the best use out of the product, be sure to read the cautions before using the product.



For your safety, please take note of the following:

- Caution
 1. To prevent electric shock when installing, moving, or opening the DVR and peripheral devices, connect and disconnect the cables as instructed in this manual. All cables must be connected to grounded outlets.
 2. Install the DVR such that it is easy to disconnect the power cord.
 3. Do not use the DVR in water or in wet places (may cause electric shock).
 4. Keep the vinyl packing materials used for the DVR or other peripheral devices out of reach of children (may cause suffocation).
- DVR Installation Environment
 1. The operating temperature should be 0°C ~ 40°C, and the operating humidity, 10% ~ 80%.
 2. Install the DVR in a safe, vibration-free place.
 3. Install the DVR in a well-ventilated place.
 4. To protect the hard drive from data loss and problems, install the DVR away from magnetic interference.
 5. When a standard rack is not used, use a separate table that allows gaps of 60cm from the floor, 50cm from the ceiling, and 20cm from the wall.

- Safety Notes on the DVR
 1. When installing additional boards and HDDs, disconnect the power cable and turn off the power of the DVR completely.
 2. Keep the product away from heat sources such as heaters.
 3. Do not use a damaged power cord.
 4. To prevent and minimize trouble due to magnetic interference and electric surge, use only grounded cables and outlets.

5. Do not touch the power supply while the power cord is connected. Even if the switch is turned off, electricity continues to flow through the cable and power supply while the power cord is connected.
 6. Do not place heavy objects on the product.
 7. Do not drop conductive objects into the ventilation holes.
 8. Allow sufficient space for system cabling (video inputs/loop outs) on the back of the unit.
 9. Use only the items indicated in this manual. Do not attempt to disassemble, repair, or remodel the product without permission. IT WILL VOID YOUR WARRANTY.
 10. Incorrect system setup may cause undesirable effects.
 11. Shut down the system properly as instructed in this manual.
 12. The UPS power supply contains a small amount of toxic substances. Improper installation of the battery, exposure to fire or moisture, disassembly or short circuit may cause explosion. Keep the battery pack out of reach of infants or children.
- Safety Notes on the Lithium Battery
 1. Replace lithium batteries as instructed in this manual.
 2. Dispose of used lithium batteries properly.

Warnings and Cautions are indicated as follows:

 Warning	Possible injury or product damage
 Caution	Risk of minor injury or product damage

Workhorse 120-8

C/O/N/T/E/N/T/S

Workhorse 120-8

Warning.....	1
Cautions.....	1
C/O/N/T/E/N/T/S	4
Chapter 1 Overview	7
1-1 About the Product.....	7
1-2 Major Features	7
1-3 Components	8
Chapter 2 Installation and Connection.....	9
2-1 Name and Features of Each Panel.....	9
2-1-1 Front Panel	9
2-1-2 Rear Panel.....	10
2-2 Installation and Connection	11
2-2-1 Connection	11
2-2-2 Adding a Hard Drive	13
2-2-3 Installing a D-RW.....	17
Chapter 3 Operation and Setup Tools	18
3-1 Front Buttons.....	18
3-2 Remote Control	19
3-3 Mouse.....	21
Chapter 4 System Operation	22
4-1 Starting and Shutting down the System.....	22
4-1-1 Starting the System	22
4-1-2 Shutting down the System	22
4-2 System Login.....	24
4-2-1 User Account	24
4-2-2 Login.....	24
4-3 Monitoring.....	26
4-3-1 Divided Screen and Automatic Screen Conversion	26
4-4 Audio Recording and Playing	28
4-4-1 Audio Recording Setting	28
4-4-2 Audio Live	29
4-5 Viewing System Information and Changing the Display Setup.....	31
4-5-1 Viewing System Information	31
4-5-2 Brightness Control	33

4-5-3 Adjusting the Contrast	33
4-5-4 Camera Control	33
4-5-5 TV Control	34
4-5-6 Language.....	34
4-5-7 Displaying/Hiding the Camera Name.....	35
4-5-8 Controlling the Screen Border.....	35
4-5-9 Reset	36
4-6 System Log	37
4-6-1 Log Type.....	37
4-6-2 Viewing the System Log	37
4-7 Record	40
4-7-1 Recording Type	40
4-7-2 Recording Setup	40
4-7-3 Viewing the Recording Status.....	40
4-7-4 Starting and Stopping Record All.....	41
4-7-5 Watermark	42
4-8 Search	43
4-8-1 Selecting Search Mode.....	43
4-8-2 Search Method	44
4-8-3 Selecting the Search Tool.....	44
4-8-4 Multi-channel	47
4-8-5 Multi-hour.....	49
4-8-6 Multi-date	50
4-9 Play	51
4-9-1 Selecting Play Mode	51
4-9-2 Playing and Controlling the Playing Speed	54
4-9-3 Playing on a Divided Screen.....	54
4-9-4 Audio Playing.....	55
4-9-5 Mute.....	57
4-9-6 Smart Search.....	58
4-9-7 Digital Zoom-in.....	61
4-10 Backup	63
4-11 PTZ Camera Control	67
4-11-1 Conditions for Using PTZ.....	67
4-11-2 Shifting to PTZ Mode	67
4-11-3 PTZ Control	67

Chapter 5 System Setup	70
5-1 Main Setup	70
5-1-1 Starting the Main Setup	70
5-1-2 Recording Setup	71
5-1-3 Recording Schedule	88
5-1-4 System	93
5-1-5 Storage Device	104
5-1-6 NTP	109
5-1-7 Advanced	113
5-2 Additional Setup	116
5-2-1 Selecting Additional Setup	116
5-2-2 PTZ Setup	117
5-2-3 Network Setup	120
Chapter 1 Rugged Vision Viewer (Web monitoring)	128
1-1 Access	128
1-2 Description of the Basic Features	130
1-3 Audio	131
1-4 Color Adjust	131
1-5 DVR Network Setting	132
1-6 Viewing a Divided Screen	133
1-7 Search and Playback	136
□-□-□ Search Method	137
□-□-□ Search and Play	137
□-□-□ Playback Control	138
□-□-□ Screen Description	139
□-□ DVR Setup	139
Chapter 2 Quick Viewer	140
2-1 File Play	141
2-2 Description of Buttons	141
2-3 Version Information	141
A/P/P/E/N/D/I/X	1423
1. PTZ Camera Protocol	1434
2. Recommended HDD	143
3. Recommended USB 2.0 Device	1445
■ Memory Stick	1445
■ 2.5" Portable USB HDD	1445
■ CD-RW, DVD-RW	1445
■ IEEE1394 Device	1445

Chapter 1 Overview

1-1 About the Product

Workhorse 120-8 is a digital video monitoring system. This product can display and record, at a high resolution rate, the video data of up to four cameras.

Front buttons, remote control, and mouse are provided for the user's convenience; along with network features including monitoring and remote system setup.

Workhorse 120-8 supports up to 120/100 (NTSC/PAL) fps.

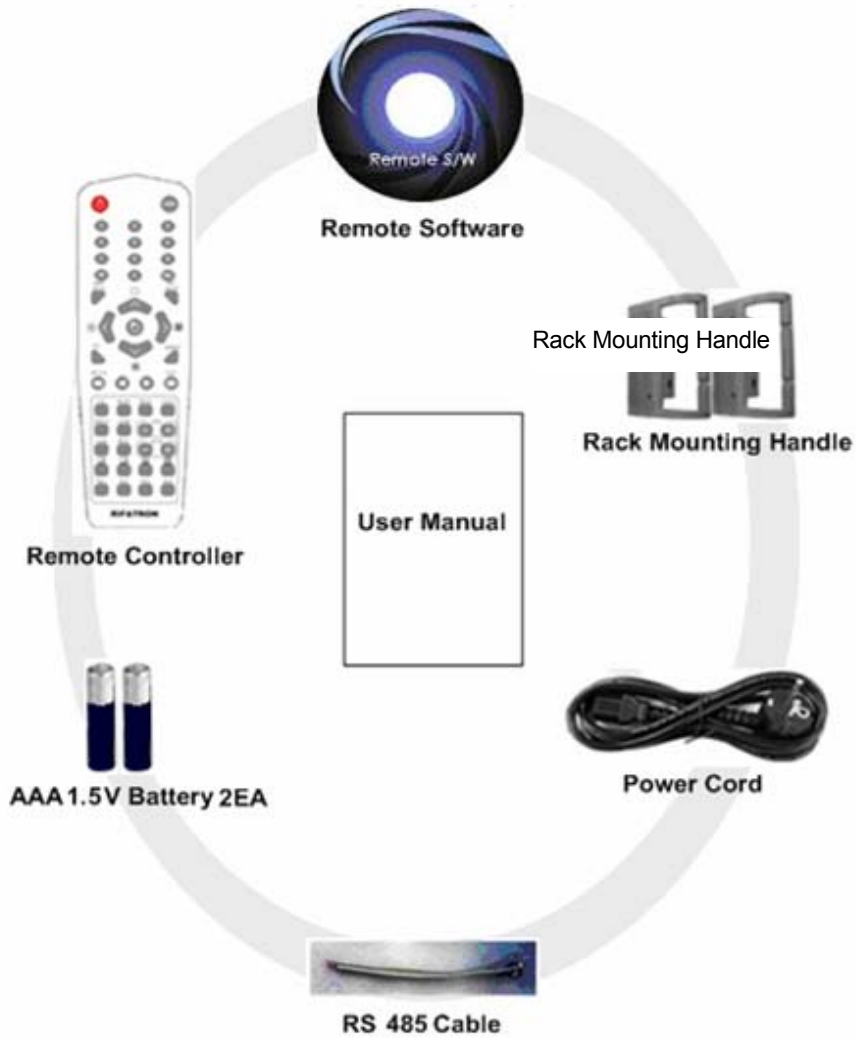
1-2 Major Features

- Stable Standalone DVR (embedded Linux)
- Video output
 - Loop output: 8 BNC
 - Monitor output: 1 BNC, 1 VGA
 - Spot output: 1 BNC
- 480fps real-time display/120fps recording
- Resolution
 - NTSC: 320×240, 640×240, 640×480
 - PAL: 320×288, 640×288, 640×576
- Compression type: MPEG4 (video)/G.726 (audio)
- Backup/Copy Ethernet, IEEE1394, USB2.0, Built-in CD-RW/DVD-RW
- System operation: Front buttons/Remote control/Network/USB2.0 mouse/System control
- 4-channel audio input
- Various network interfaces
 - Cable modem, Ethernet, ADSL/DHCP client
- System automation (all features are remote controllable)
- NTP support
- Various recording modes
 - Auto, Continuous, Event (sensor, motion, sound) recording
- Recording schedule
- Multi-language support, Automatic emailing
- PTZ control through RS485 communication
- Remote monitoring software, Remote monitoring through the web browser, PDA.
- Storage device
 - Internal storage device: Max. 4HDD, 2TB

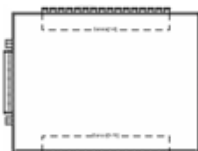
1-3 Components

After unpacking the product, check whether the following accessories are included:

1) Basic panels



2) Optional panels



DIO (Sensor/Relay) Extension Module



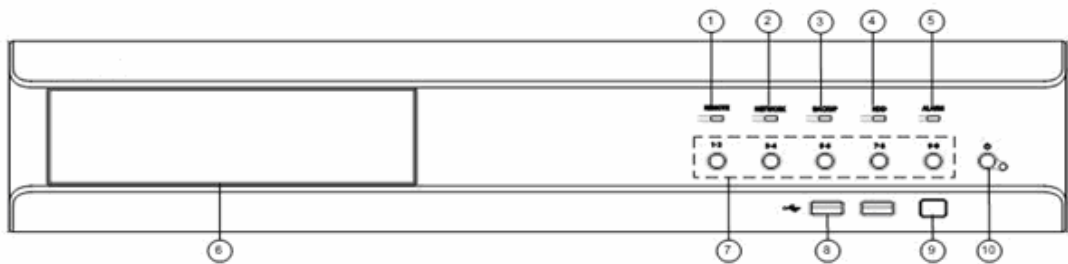
DIO (Sensor/Relay) Extension Module Cable

Chapter 2 Installation and Connection

2-1 Name and Features of Each Panel

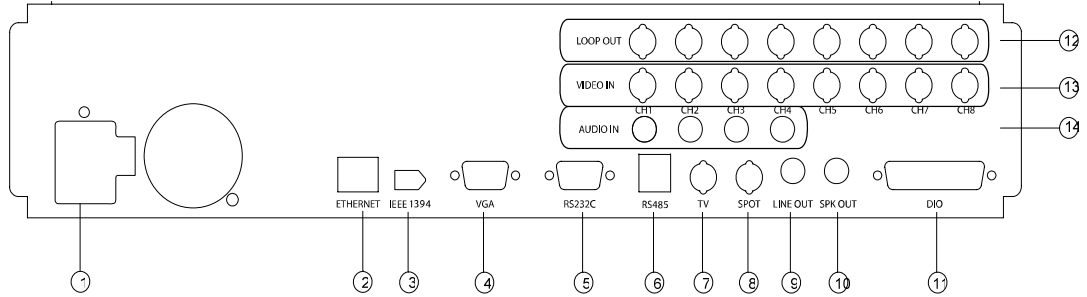
Buttons are conveniently located on the front panel of Workhorse 120-8, and various interfaces, on the rear panel. Workhorse 120-8 can be easily installed in the standard rack by the rack mounting handles (on the left and right sides).

2-1-1 Front Panel



No.	Name	Features
1	Remote	The green light is ON when the remote control is accessing the DVR
2	Network	The green light is ON when the DVR is being accessed through the network
3	Backup	The green light is ON when the DVR is making a backup
4	HDD	The green light is turned ON when the hard drive is operating.
5	Alarm	The red light is ON when an alarm is triggered.
6	CD-RW/DVD-RW	CD-RW/DVD-RW installation slot
7	Numeric buttons	Numeric buttons
8	USB	External backup device or USB mouse connection
9	Remote control sensor	Remote control reception sensor
10	Power	System power ON/OFF or Selection button

2-1-2 Rear Panel



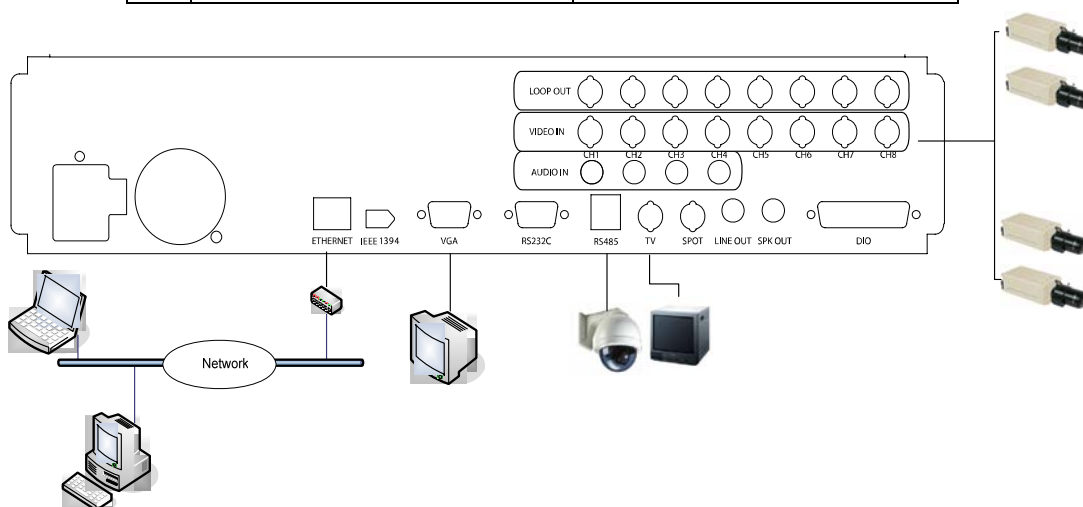
No.	Name	Features	Form
1	AC in	Power cable connection to the body	
2	Ethernet	ADSL, Cable modem, Ethernet 10/100 Base-T connection	RJ-45
3	IEEE1394	IEEE1394 device connection	
4	VGA	VGA monitor connection	D-SUB 15
5	RS-232C	Serial cable connection for system upgrade Interface with POS/ATM/MTRIX	D-SUB 9-pin
6	RS485	PTZ camera control cable connection	RJ-11 6-pin
7	TV	CCTV monitor connection	BNC
8	Spot	SPOT monitor output connection	BNC
9	Line Out	Line level audio output	RCA
10	SPK Out	Speaker output	RCA
11	DIO	Sensor/Relay extension board	D-SUB 25
12	Loop Out	Video signal loop-back output connection	BNC
13	Video In	Video signal input connection	BNC
14	Audio In	Audio signal input connection	RCA

2-2 Installation and Connection

2-2-1 Connection

Connect the DVR to the CCTV cameras, CCTV monitor (or PC monitor), PTZ camera control cable, audio input/output port, network, and sensor as shown below:

	Connection Device	DVR Port
1	CCTV camera	Video input
2	CCTV monitor (or PC monitor)	CCTV (or VGA)
3	PTZ camera	RS485
4	Audio input/Audio output	Audio input/Audio output
5	LAN cable	Ethernet
6	Sensor/Relay extension board	DIO
7	IEEE1394 device	IEEE1394



1. The inputted video type must be either NTSC or PAL; these two types must not be used together.
2. The inputted video type (NTSC/PAL) is automatically recognized upon the initial operation of the system.

(1) PTZ camera

- To use a PTZ camera, connect the control cable to the RS485 connector.

RS485 uses the RJ-11 6-pin type. Below is the pin arrangement:

Pin	1	2	3	4	5	6
RS485	GND	TR+	TR-	TR+	TR-	GND

(2) Spot monitor

Spot monitor refers to a CCTV monitor that displays events.

The Spot Monitor function displays the video of a channel with an event being detected (motion,

sensor, or sound) on full screen. Events are checked every second; if events are detected in multiple channels, the video of the channel with the latest event is displayed.

(3) Audio input/output

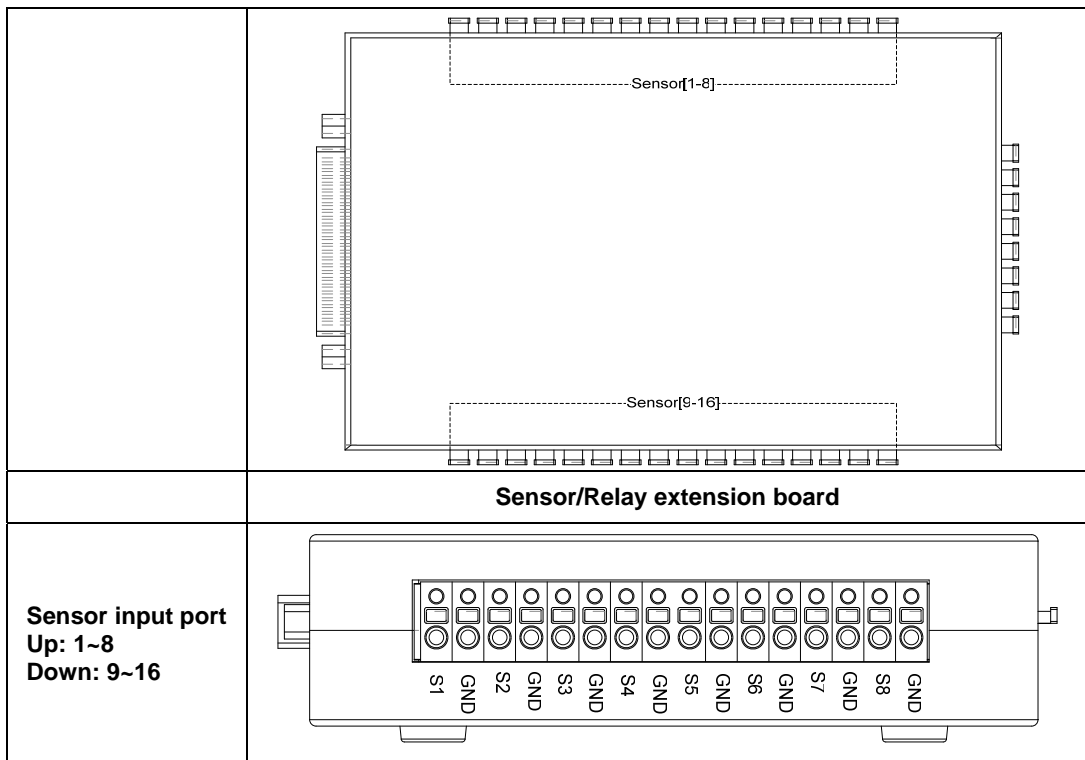
There are four audio input ports, one line output port, and one speaker output port.

(4) Sensor/Relay extension board

Connect the sensor/relay extension board to the DIO port on the rear side of the system using a D-SUB 25-type extension cable.

A) External sensor connection option

The sensor/relay extension board consists of 16 sensor input ports and 4 relay output ports.



Connecting the external sensor

- Connect the external sensor cables to S1 ~ S16 and the input port of the sensor/relay extension board module with symbol.
- Each input port may be used regardless of the channel number.

Example - Connecting three external sensors

Connect the external sensor cable to the sensor input ports as shown below:

External Sensor	Input Port	Ground Port
Sensor1	S1	GND
Sensor1	S3	GND

Sensor1	S6	GND
---------	----	-----

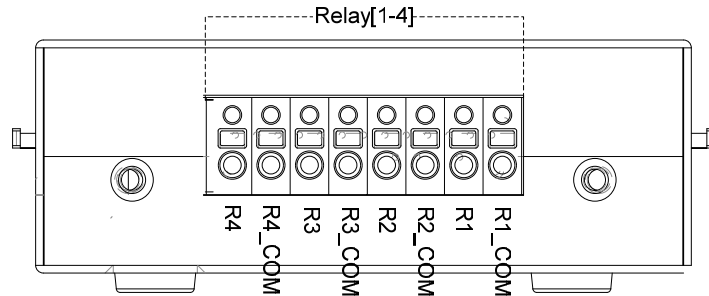
Sensor types include Normal Close (NC) or Normal Open (NO). For more information on sensor type setting, see **{5-1-2 Recording Setup} → {(7) Event Setup} → {(B) Sensor}**.

Normal Close (NC): Opens in case of incoming signal when closed normally

Normal Open (NO): Closes in case of incoming signal when opened normally

B) Relay connection

Relay output port



- Connect the alarm light or external alarm device to the relay output port to generate alarms through the external alarm device.
- Connect the external alarm device to the Rx_COM or Rx output port of the sensor/relay extension module.

Example - Connecting four external sensors

Connect the external sensor cable to the relay output port as shown below:

External Alarm Device	Output Port	Ground Port
Relay 1	R1	R1_COM
Relay 2	R2	R2_COM
Relay 3	R3	R3_COM
Relay 4	R4	R4_COM

Relay types include Normal Close (NC) or Normal Open (NO.) For more information on relay setting, select **{5-1-2 Recording Setup} → {(8) Alarm Output} → {(D) Relay}**.

Normal Close (NC): Opens in case of incoming signal when closed normally

Normal Open (NO): Closes in case of incoming signal when opened normally

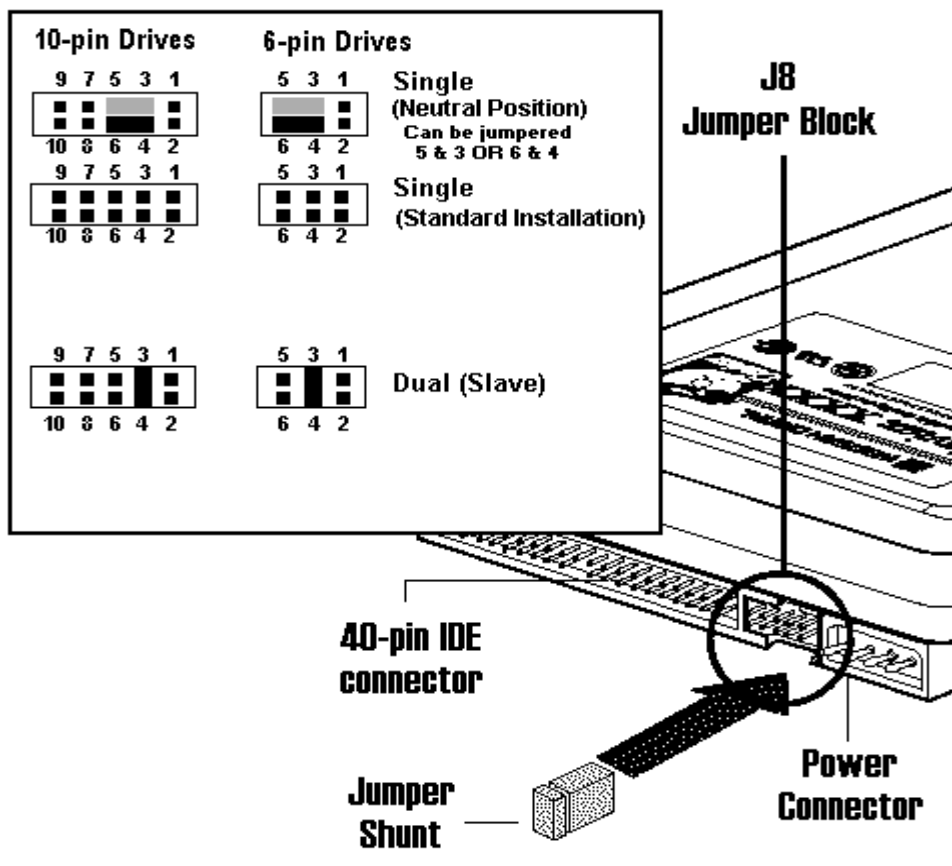
2-2-2 Adding a Hard Drive

- Up to four hard drives may be installed in the system using two hard drive cables. Each hard drive cable can connect two drives, which must be configured in master/slave structure.
- In the absence of CD-RW, two hard drive bays are installed: one on the right and the other on the left. If there is a CD-RW, however, two hard drive bays are installed on the right.



The jumper setting method varies by manufacturer or model. Refer to the jumper setting information marked on the front side of the hard drive.

Example - Setting the jumper for a Western Digital WD1200 hard drive



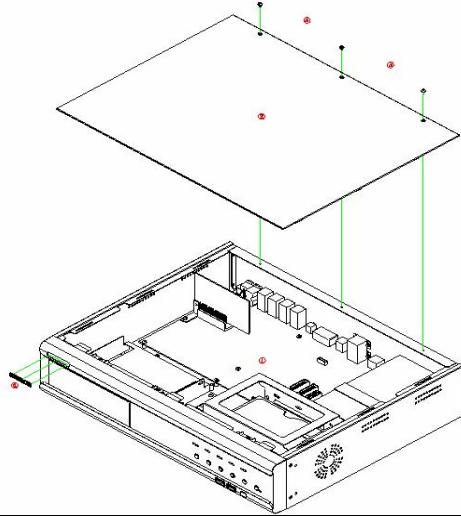
■ Adding a hard drive



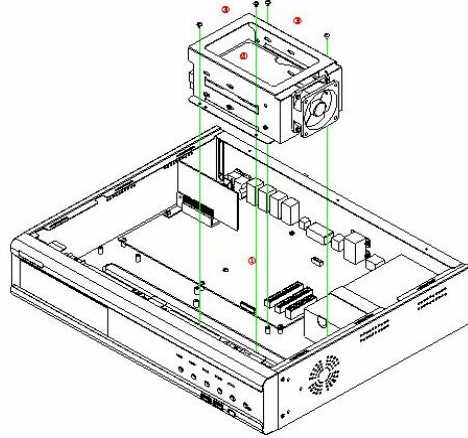
Caution

- 1) Before installing the HDD, turn OFF the DVR and disconnect the power cord.
- 2) Never touch a grounded metallic object when installing the HDD (may cause the body to absorb static electricity, which in turn can cause problems in the DVR).
- 3) After installing the HDD, do not turn the power ON until the top cover is closed. Never use the DVR with the top cover opened.

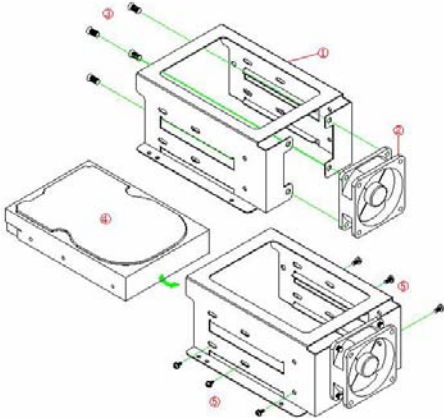
- Before turning OFF the power, shut down the system first.
- Unscrew and open the upper case.



- Unscrew the hard drive bay using a screwdriver and separate the hard drive bay from the body.



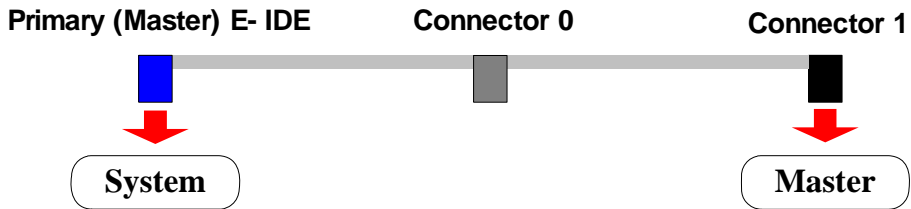
- Insert the hard drives into the hard drive bay



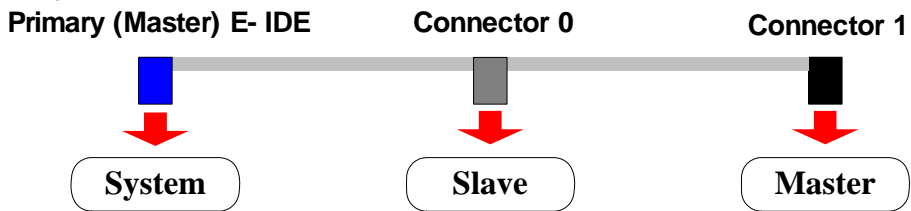
□ Connect the hard drive power cable and the hard drive connection cable to the corresponding ports. Connect the hard drive connection cable as follows:

1. Connecting one hard drive connection cable

1) Installing one HDD

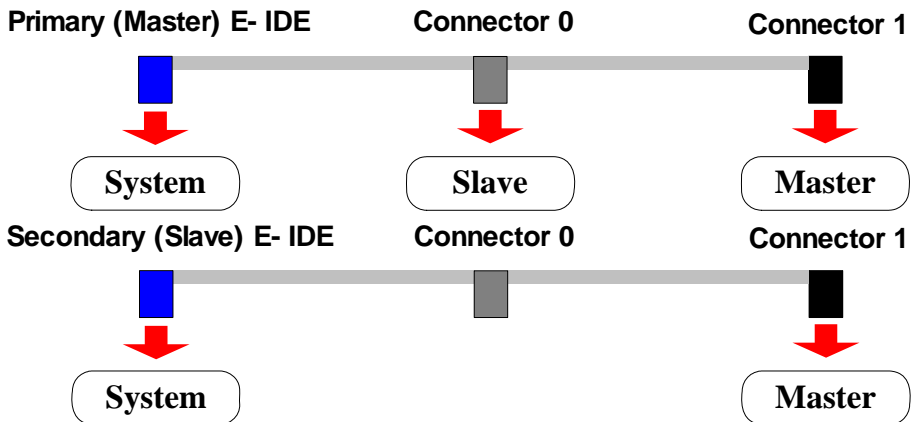


2) Installing two HDDs

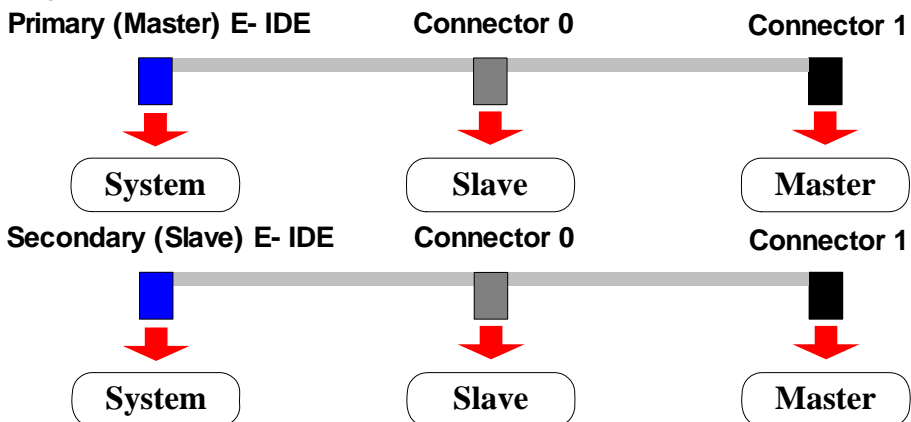


2. Connecting two hard drive connection cables

1) Installing three HDDs



2) Installing four HDDs



Place the hard drive bay on the body and fasten with screws.

Close the upper case and fasten the screws.

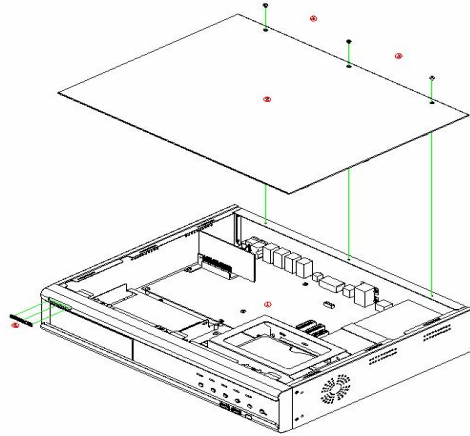
Turn the power ON and start the system.



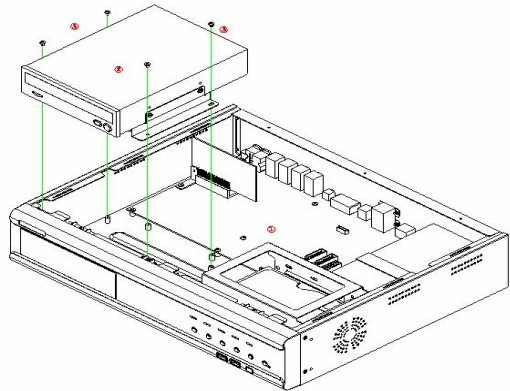
After adding a hard drive, select **{Main Setup} -> {Storage Device} -> {Local} -> {3. Manage Local Storage Device}**. For more information, see **{5. System Setup} -> {5-1 Main Setup} -> {5-1-5 Storage Device}**.

2-2-3 Installing a CD-RW

Unscrew and open the upper case.

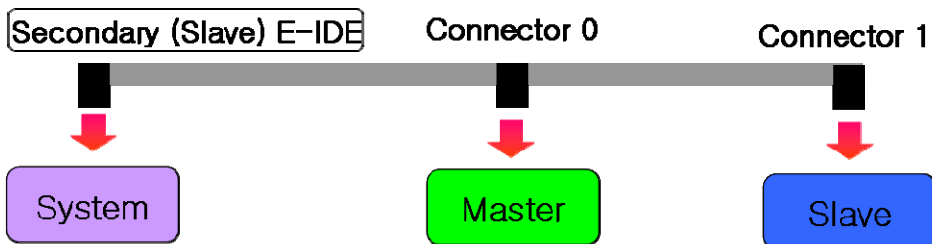


Screw in the **CD-RW/DVD-RW** on the front **CD-RW/DVD-RW bay**.



Connect the power cord of the **CD-RW/DVD-RW** and the **E-IDE** cable to the corresponding ports.

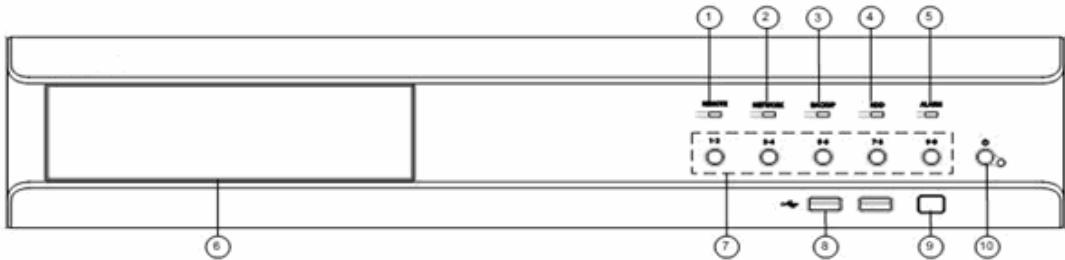
Note ! Before connecting the **E-IDE** cable to the slave **E-IDE**, set the **jumper** of the **CD-RW/DVD-RW** as **slave**



Chapter 3 Operation and Setup Tools

The user can operate Workhorse 120-8 easily using the remote control, mouse, or remote access software.

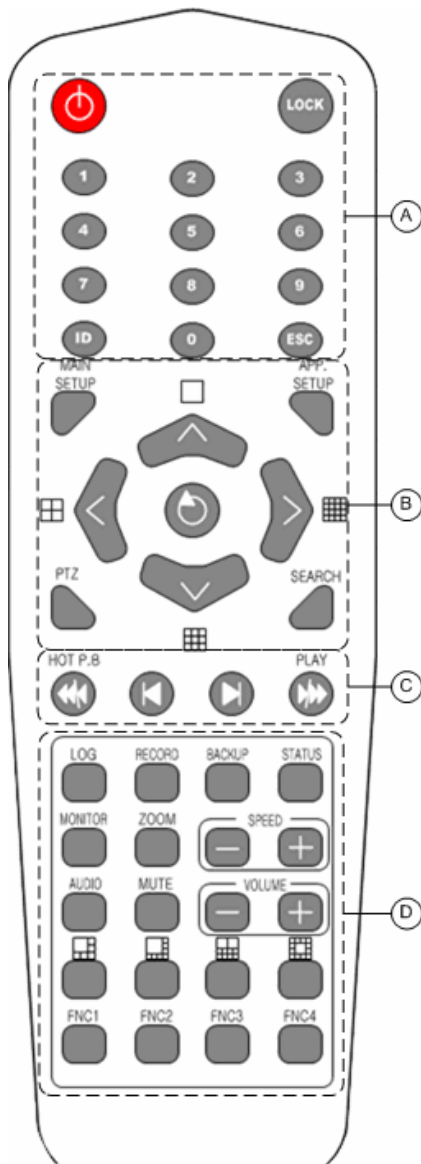
3-1 Front Buttons



No.	Name	Features
1	Remote	The green light is ON when the remote control is accessing the DVR
2	Network	The green light is ON when the DVR is being accessed through the network
3	Backup	The green light is ON when the DVR is making a backup
4	HDD	The green light is turned ON when the hard drive is operating.
5	Alarm	The red light is ON when an alarm is triggered.
6	CD-RW/DVD-RW	CD-RW/DVD-RW installation slot
7	Numeric buttons	Numeric buttons
8	USB	External backup device or USB mouse connection
9	Remote control sensor	Remote control reception sensor
10	Power	System power ON/OFF or Selection button

The front buttons are used only for inputting numeric data. Use the mouse or remote control for the other features.

3-2 Remote Control



A. Basic control buttons

	Power	Turns the system ON or OFF
	Lock	Disables the mouse, remote control, or touch screen
	Number	Used to input numeric data
	ID setting	Used to set the remote control ID
	ESC	Exits the current menu or selects the upper menu

B. System operation and setup buttons

	Main setup	Used to set up the recording, recording schedule, and system
	APP setup	Used to set up the PTZ and network
	PTZ	Changes the PTZ camera control mode
	Search	Searches recorded images
	Move	Moves an item or changes the display mode
	Select	Selects an item or converts screens Sequentially

Setting the remote control ID

Example - Setting the remote control ID as 1







Select the [ID] button and enter the two-digit remote control ID. Afterward, press the [ID] button again.















To control all DVRs with different DVR IDs, set the remote control ID as 999.

C. Search buttons

	Forward play/Fast-forward	Used to play forward and to fast-forward
	Fast-forward frames by frame or tab	Used to play frames forward frame-by-frame (or TAB)
	Reverse frame by frame or tab	Used to play frames backward frame-by-frame (or TAB)
	Reverse play/Fast reverse	Used to play backward and to rewind

D. Other buttons

	Log	Used to view system logs
	Record	Used to record all channels or stop recording all channels
	Backup	Used to back up the stored video data in Search mode
	Status	Used to view system information or change the display setup
	Monitor	Used to monitor the inputted video in real time during playback
	Audio	Used to play audio
	Mute	Turns OFF the audio
	Speed up	Used to increase the playing speed
	Speed down	Used to decrease the playing speed
	6-divided	Used to display in 6-divided screen
	8-divided	Used to display in 8-divided screen
	FNC 1	Displays/Hides the OSD status

3-3 Mouse

The user can operate the system using the USB mouse.

- To go to the On Screen Display (OSD) menu, right-click as shown below:
- To close the OSD menu, right-click again.
- To execute the OSC menu, click.
- To exit the submenu, right-click.



No.	Name	Features
1	Lock	Disables the mouse and remote control
2	Main setup	Sets the data, recording status, and system
3	Additional setup	Used to set the PTZ and network
4	PTZ	Changes the PTZ camera control mode
5	Search	Searches recorded images
6	Log	Used to view the system log list
7	Record	Used to record all channels or stop recording all channels
8	Status	Used to view system information or change the display setup
9	Monitor	Used to monitor the inputted video in real time during playback
10	Voice	Used to play audio
11	F1	Displays/Hides the OSD status
12	F2	-
13	F3	-
14	F4	-

Chapter 4 System Operation


4-1 Starting and Shutting down the System

4-1-1 Starting the System



The default password of the local administrator is "00000."

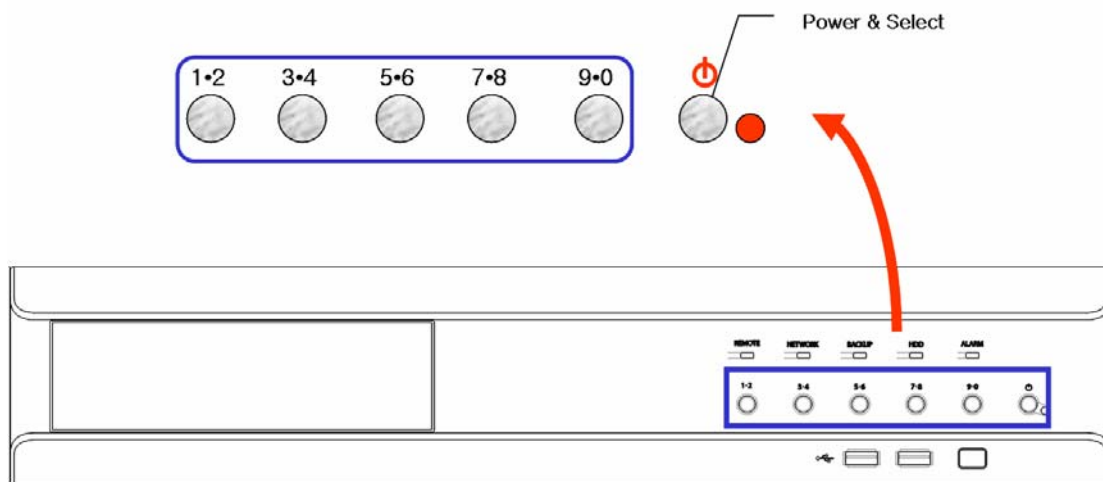
To change the password, select **{Main Setup}** → **{System}** → **{Local Administrator's Password}**.

- With the power connected to the player, press the Power button  on the remote control.
- Enter the local administrator's password using the numeric buttons.
- Once the correct password is inputted, the system is initialized, and the initial screen appears.
- After the system is initialized and started, the video of all connected channels is displayed.



The user can enter a number using the front buttons as shown below:

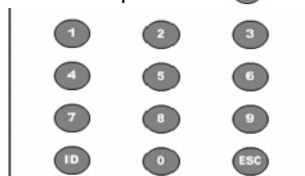
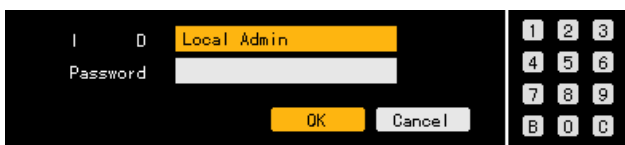
Odd number: Short-press Even number: Long-press

Input initialization: Press the [Power] button.

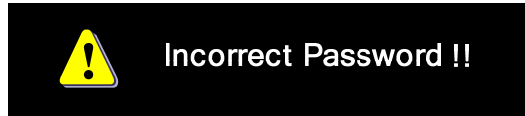


4-1-2 Shutting down the System

- Press the Power button  on the remote control.
- Enter the system administrator's password using the numeric buttons and press the  button.



- Once the correct password is inputted, all lights on the front panel blink, and a warning sound is generated for approximately 20 seconds before the system shuts down.
- If an incorrect password is inputted, a warning message is displayed followed by the previous screen as shown below:



4-2 System Login

4-2-1 User Account

System users are divided into local system administrators and general users. The local system administrator can use all features.






Local Admin	Default account; the default password is "00000" Has access to all features including System Setup, System Power ON/OFF, Monitoring, and View Recorded Video Remote access not supported, however
User	Up to four users can be created; system features may be used depending on the authorities given to each user.

■ System features requiring authorities

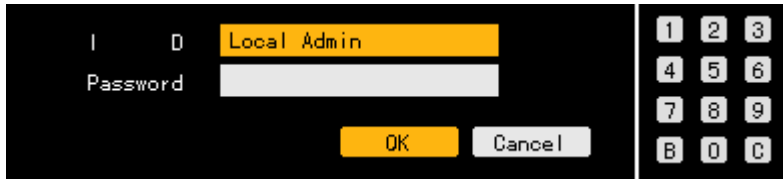
Network live	Network access real-time display
Network play	Network access view recorded video
Download network file	Network access, File download
Main setup Additional setup	Data setup, Recording schedule, System, Storage device, NTP, Advanced setting PTZ camera, Network setup
Network PTZ control	Network access PTZ camera control
Network backup	Network access backup
Remote upgrade	Remote upgrade

4-2-2 Login

For security purposes, the administrator is required to log in to the system to use the following features:

	Power	System power ON/OFF Only the local system administrator can use this feature.
	Lock/Unlock	Locks/Unlocks the system Only the local system administrator can use this feature.
	Main setup	Data setup, Recording schedule, System, Storage device, NTP, Advanced setting
	Additional setup	PTZ, Network setup
	Record	Used to record all channels or stop recording all channels

- Select the **Power, Lock, Main Setup, APP. Setup, and Record** buttons. The ID and password input window is then displayed as shown below:



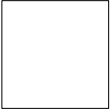
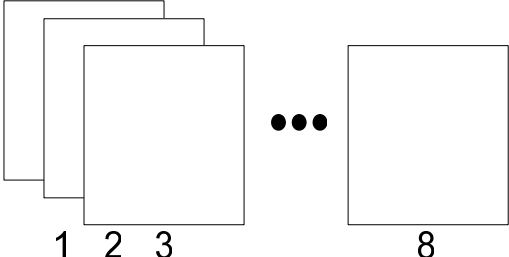

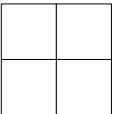

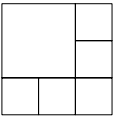
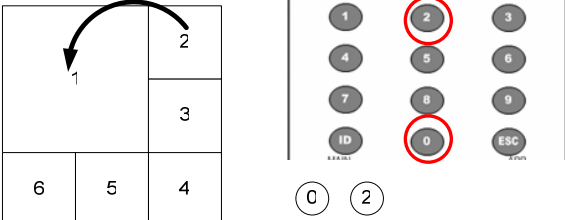

- Select the login account and enter the password using the numeric buttons on the remote control.

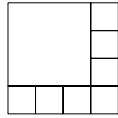
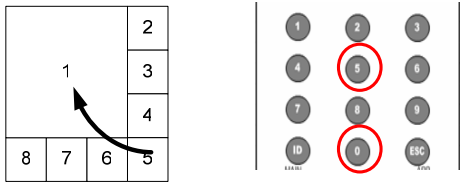
- 1) The default password of the local administrator is "00000."
- 2) Go to the ID selection box and press the **Arrow (▲▼)** button on the remote control or double-click the ID selection box to log in using another user account.


4-3 Monitoring

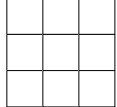
- Once the system starts, video data from the CCTV/VGA monitor is displayed on the 9-divided screen.
- The user can choose from various modes such as Full, 4, 6, 8, 9, 10, 13, and 16 and move between modes.


4-3-1 Divided Screen and Automatic Screen Conversion

 <p>View all (8 sub-screens)</p>													
<p>Press the  arrow up button on the remote control. Pressing the arrow up button each time causes the next screen to be selected.</p> <p>Double-click the desired video on the channel.</p> <p>Double-click any area on the View All window to convert into a 9-divided screen.</p>													
 <p>4-divided screen (2 sub- screens)</p>	<table border="1" data-bbox="688 834 1049 1012"> <tr> <td>1</td><td>2</td><td>5</td><td>6</td></tr> <tr> <td>3</td><td>4</td><td>7</td><td>8</td></tr> </table>	1	2	5	6	3	4	7	8				
1	2	5	6										
3	4	7	8										
<p>Press the  button on the remote control.</p> <p>Double-click the desired channel for a full screen view.</p> <p>Double-click any area on the View All window to convert into a 4-divided screen.</p>													
 <p>6-divided screen (2 sub- screens)</p>													
<table border="1" data-bbox="164 1394 524 1572"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr> <td>6</td><td>5</td><td>4</td><td>8</td></tr> <tr> <td></td><td></td><td>7</td><td>6</td></tr> </table>	1	2	3	4	6	5	4	8			7	6	
1	2	3	4										
6	5	4	8										
		7	6										
<p>Press the  button on the remote control.</p> <p>Pressing the corresponding numeric buttons enables viewing the main channel.</p>													

 <p>8-divided screen (1 screen)</p>	<table border="1" data-bbox="452 164 617 347"> <tr><td></td><td></td><td>2</td></tr> <tr><td>1</td><td></td><td>3</td></tr> <tr><td></td><td></td><td>4</td></tr> <tr><td>8</td><td>7</td><td>6</td><td>5</td></tr> </table>			2	1		3			4	8	7	6	5	 <p>0 5</p>
		2													
1		3													
		4													
8	7	6	5												

Press the  button on the remote control.
 Pressing the corresponding numeric buttons enables viewing the main channel.

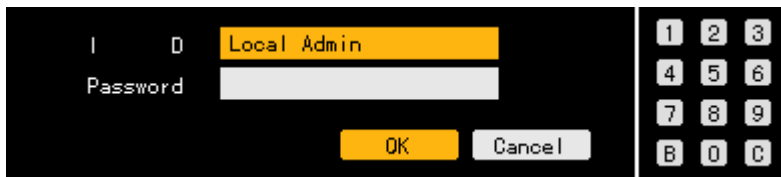
 <p>9-divided screen (1 screen)</p>	<table border="1" data-bbox="569 531 727 705"> <tr><td>1</td><td>2</td><td>3</td></tr> <tr><td>4</td><td>5</td><td>6</td></tr> <tr><td>7</td><td>8</td><td></td></tr> </table>	1	2	3	4	5	6	7	8		
1	2	3									
4	5	6									
7	8										

Press the  button on the remote control.
 On the 9-divided screen, double-click the channel to convert into a full screen. Double-click any area on the screen to return to the 9-divided screen.

4-4 Audio Recording and Playing

4-4-1 Audio Recording Setting

- On the real-time monitoring screen, select **[Main Setup]** on the remote control.
- The login window is then displayed as shown below:



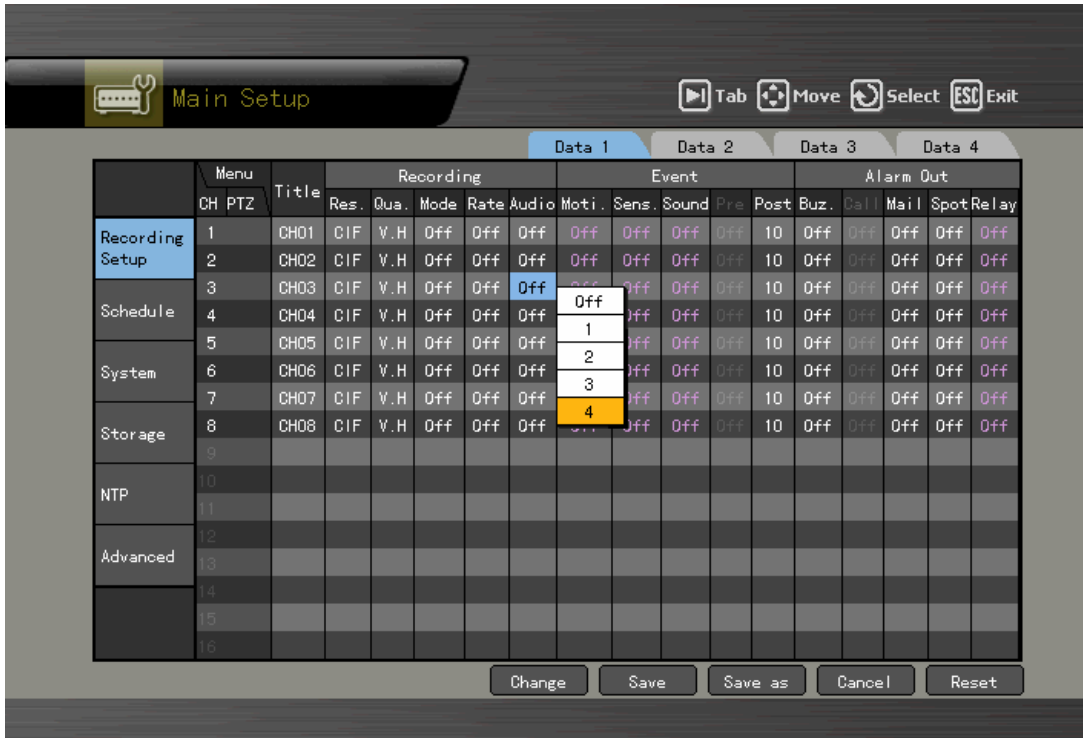
- Select the login account, enter the password using the numeric buttons on the remote control, and click **[OK]**.

- 1) The default password of the local administrator is "00000."
- 2) Go to the ID selection box and press the **Arrow (▲▼)** buttons on the remote control or double-click the ID selection box to log in using another user account.

- Once the correct password is inputted, the initial screen of **{Main Setup}** appears as shown below:

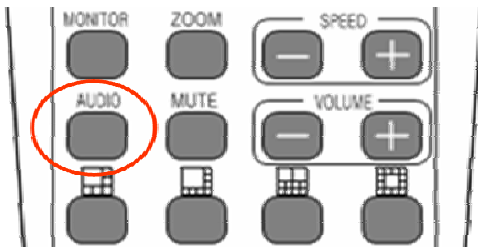


- Navigate on the screen using the arrow (▲▼◀▶) buttons. Select {Main Setup} → {Data 1~4} → {Recording} → {Audio} and choose the desired channel. Afterward, click the [Select] button.
- On the channel selection box, select the audio channel and save it.

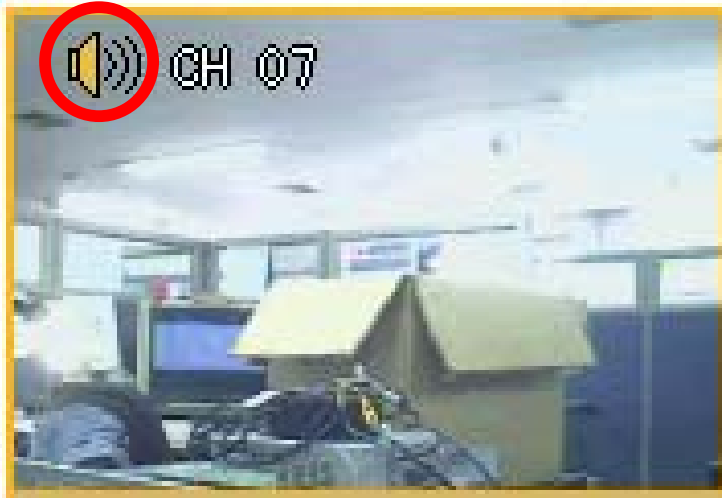


4-4-2 Audio Live

- Select the **Audio** button on the remote control or on the menu on the Real-time Monitoring screen.



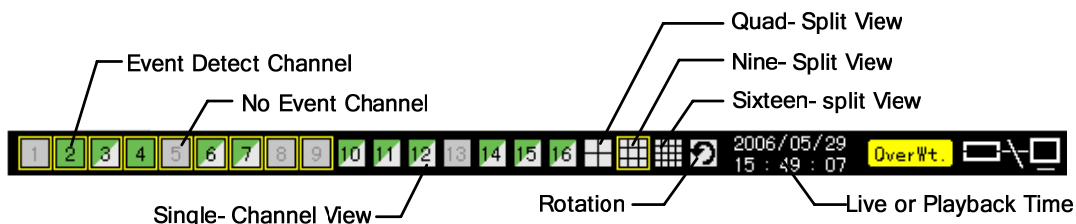
- The Audio icon and active window are then displayed on the channel, with the voice set on the real-time monitoring window as shown below:



- Change the window using **the arrow (▲▼◀▶)** buttons and click the **[Select]** button to select an audio channel.
- The real-time monitoring screen is then selected, and the voice for the selected channel, outputted.

4-5 Viewing System Information and Changing the Display Setup

Workhorse 120-8 displays basic system information through the STATUS OSD to enable the user to monitor the real-time screen, view system information, and set the screen.



- Selecting the **[Status]** button causes the following setup menus to be displayed:



Channel selection window

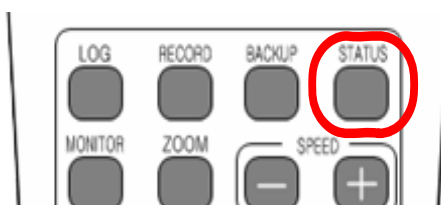
Activation mode The channel selection window can be moved. At this time, the border of the channel screen is displayed in orange.

Selection mode The channel is selected, At this time, the border of the channel screen is displayed in blue.

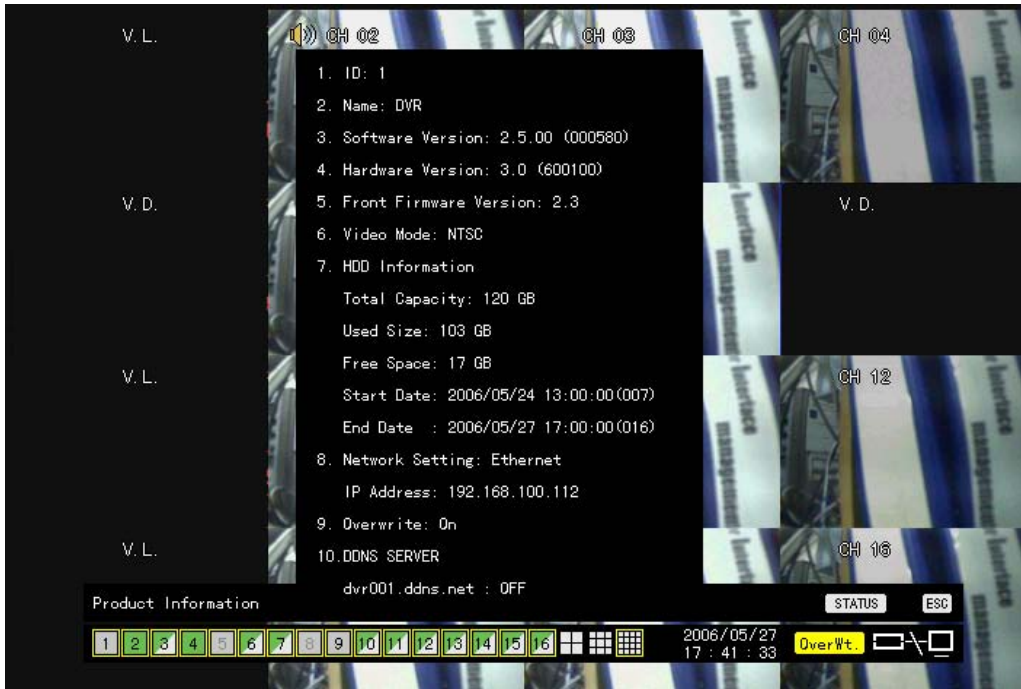
Viewing a divided screen

Pressing the buttons in Brightness, Contrast, or Camera Control mode enables monitoring the video in Full, 1, 4, or 9-divided screen.

4-5-1 Viewing System Information



- Select the **Status** button using the remote control or mouse.



1. ID	Product ID (1~99, 255) (used for remote control by ID)
2. Name	Product name
3. Software version	Software version (build number)
4. Hardware version	Hardware version (equipment type)
5. Front firmware version	Firmware version on the front panel
6. Video mode	Video mode (NTSC/PAL)
7.HDD information	Hard drive
Total space	Total space
Used space	Used space
Free space	Remaining space
Starting day	Recording start date
End day	Recording end date
8. Network setup	Network setup status
IP address	IP address
9. Overwrite	Overwrite status
10. DDNS server	Status of DDNS usage

4-5-2 Brightness Control

- To shift to brightness control mode, press the **[Status]** button as shown below:



Select the channel on the monitoring screen to adjust the brightness.

- Adjust the brightness using the **arrow (◀▶)** buttons.



- Go to the channel selection window using the **[ESC]** button and adjust the brightness of the channel video by repeating steps 2 and 3.
- After adjusting the brightness of the channel video, press the **[ESC]** button again.
- The adjusted brightness is then saved immediately.

4-5-3 Adjusting the Contrast

- To shift to contrast control mode, press the **[Status]** button as shown below:



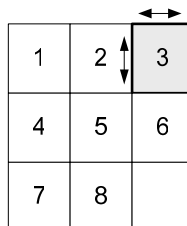
- Select the channel on the monitoring screen to adjust the contrast.
- Adjust the contrast using **the arrow (◀▶)** buttons.



- Go to the channel selection window using the **[ESC]** button and adjust the contrast of the channel video by repeating steps steps 2 and 3.
- After adjusting the contrast of the channel video, press the **[ESC]** button again.
- The adjusted contrast is then saved immediately.

4-5-4 Camera Control

- Use Camera Control to control the displayed images by moving the channel screen as shown below:



- To shift to camera control mode, press the **[Status]** button as shown below:



- Select the channel on the monitoring screen to control the camera.



- Adjust the camera of the selected channel using the **arrow** (◀▶) buttons.
- Go to the channel selection window using the **[ESC]** button and adjust the camera of the channel video.
- After adjusting the camera of the channel video, press the **[ESC]** button again.
- The adjusted camera control is then saved immediately.

Moving the monitor up, down, right, or left excessively may cause a black or gray panel to appear on the screen. A proper control range is achieved when there is no black or gray panel on the screen.

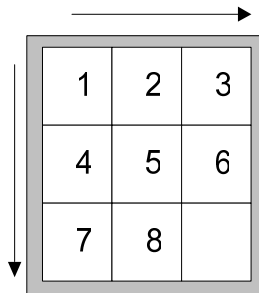
4-5-5 TV Control

▪Use TV Control to adjust the images displayed on the CCTV monitor by moving the CCTV monitor screen up, down, right, or left as shown below:

- Press the **[Status]** button to shift to TV control mode as shown below:



- Adjust the CCTV monitor screen using the **arrow** buttons as shown below:



- After adjusting the video, press the **[ESC]** button.
- The TV out adjustment is then saved immediately.

Moving the monitor up, down, right, or left excessively may cause a black or gray panel to appear on the screen. A proper control range is achieved when there is no black or gray panel on the screen.

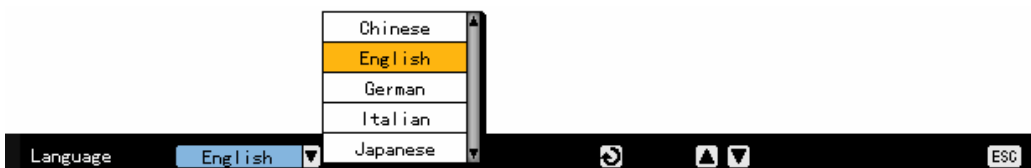
4-5-6 Language

▪The user can select the language for the On Screen Display (OSD) menu of the system.

- To shift to language selection mode, press the **[Status]** button as shown below:



- Press the **[Select]** button. On the language selection menu, select the language using the **arrow** (▲▼) buttons and press the **[ESC]** button.



4-5-7 Displaying/Hiding the Camera Name

Displays/Hides each channel on the monitoring screen

- To display/hide the camera name, press the **[Status]** button as shown below:



- Press the **[Select]** button. On the ON/OFF menu, select ON or OFF using the **arrow** (◀▶) buttons and press the **[Select]** button.



4-5-8 Controlling the Screen Border

Used to display/hide the screen border and to control the border form, thickness, transparency, and color

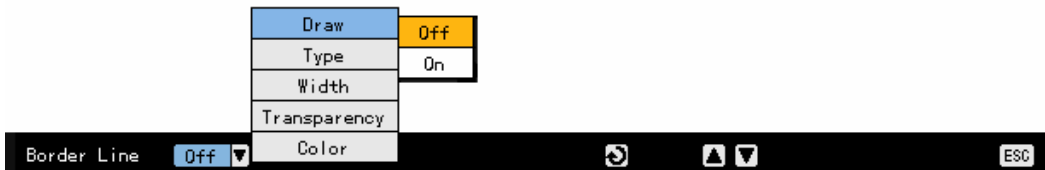
- To display/hide the border, press the **[Status]** button as shown below:



- Press the **[Select]** button. On the setting menu, select the desired item using the **arrow** (▲▼) buttons.



- After selecting the desired item, save the setting and press the **[Select]** button.



- After setting each field, press the **[ESC]** button to exit the border line setting mode.

Border setting fields

Field	Setting	Description
Mode	ON	Displays the channel screen borders
	OFF	Hides the border
Width	2, 4	Sets the width
Transparency	25%, 50%, 75%, 100%	Sets the transparency
Color	Black, White, Red, Green, Blue	Sets the color of the border

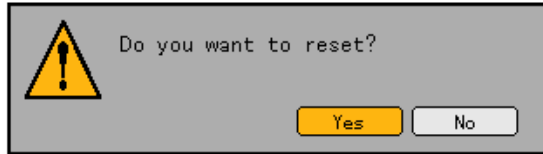
4-5-9 Reset

Resets the **[Status]** settings

- Press the **[Status]** button to shift to reset mode as shown below:



Press the **[Select]** button. On the message window, select **[Yes]** or **[No]** using the arrow (▲▼◀▶) and **[Select]** buttons.



4-6 System Log

Workhorse 120-8 records the logs of all operations including system power ON/OFF, system setup in/out, and network connection/disconnection.

4-6-1 Log Type

(1) General

Logs related to power ON/OFF, file copy/backup failure, setup start/end, play, and other basic system operations

(2) Recording event

Logs related to recording such as detection of motions, sensor, and sound

(3) Network

Logs related to network operations such as network login, network logout, and network live

(4) Failure

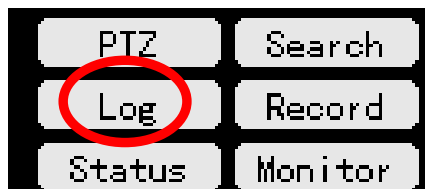
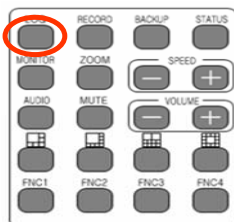
Logs related to operation failures such as signal loss and network connection failure

(5) All

Logs related to all system operations

4-6-2 Viewing the System Log

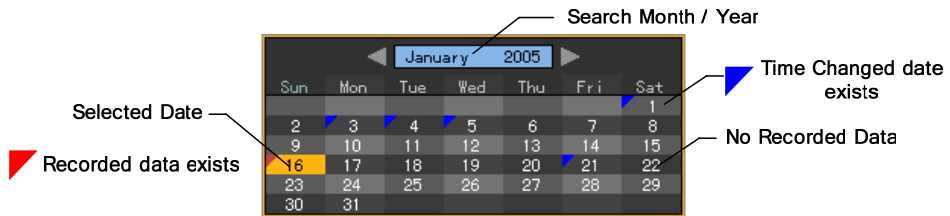
- In real-time monitoring mode, press the **[Log]** button on the remote control or **[Log]** button on the menu.



- The initial log list menu is then displayed as shown below:

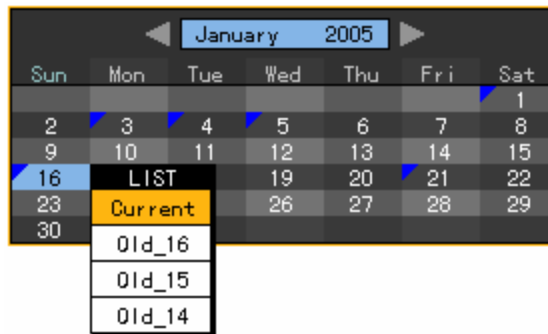


- On the active calendar window, select the search date using the arrow (▲▼◀▶) and [Select] buttons as shown below:




Viewing time change-related log data

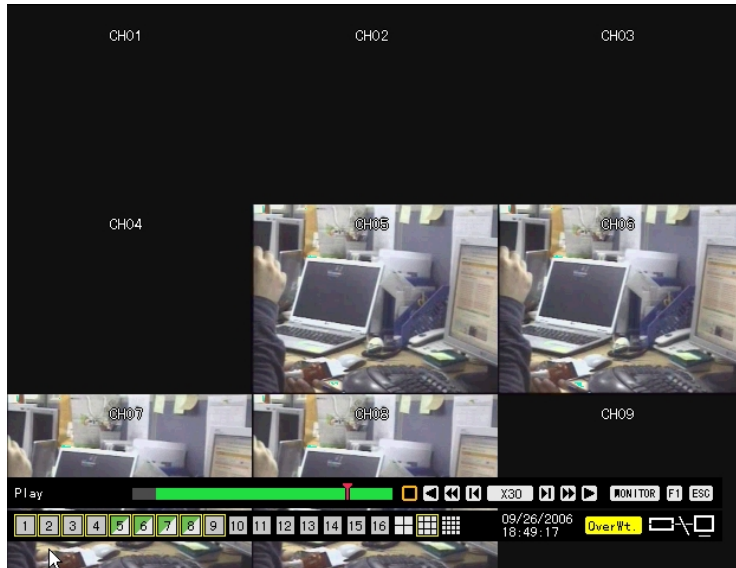
The stored data folder is updated each time the user changes the time. On the other hand, a blue triangular icon is displayed on the date each time a change is made in the date on the calendar window. Otherwise, a red triangular icon is displayed on the unchanged date. To view the log details, select the date with a red icon. Selecting a date with a blue icon causes the changed date list to appear.



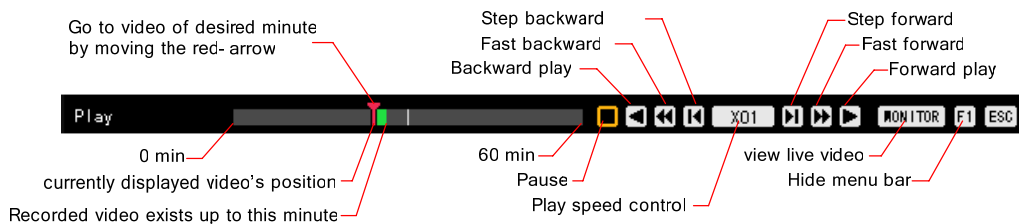
- Select the (new) date on the calendar window to display the log list as shown below:



- Navigate on the screen using the **arrow (▲▼)** buttons and check the logs by time and type.
- The user can check the logs by time and type on each page using the **[TAB]**  buttons.
- Press the **[Play]** button on the selected log to play the recorded video for the corresponding time.



- On the recorded video screen, press the **[Play]** button.



Recorded video is played each second.

Example - The user can play the video from the 19:45:16 log by selecting 19:45:16.

- To return to the previous log list, press the **[ESC]** button.

4-7 Record

4-7-1 Recording Type

Workhorse 120-8 supports various recording types:

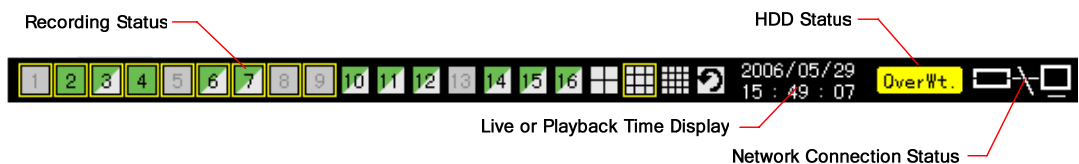
Recording Type	Description
Automatic	Set the event recording frame and the general recording frame separately for automatic recording based on the setting. When motion, sensor, or sound is detected, the event recording frame is selected. Otherwise, the general recording frame is selected.
Continuous	Recording is done based on the general frame setting.
Motion	Recording is done based on the event frame setting in case motion is detected.
Sensor	Recording is done based on the event frame setting in case of input signal from an external sensor.
Sound	Recording is done based on the event frame setting in case sound is detected.

4-7-2 Recording Setup

Go to the {Main Setup} -> {Data Setup} menu. For more information on the recording setup, go to {5-1-2 Data Setup} -> {Recording}.

4-7-3 Viewing the Recording Status

The user can monitor the recording status of each channel in real time through the OSD at the bottom of the screen.



Recording status by shape

	Triangle	Only video is recorded.
	Triangle	Only audio is recorded.
	Rectangle	Both audio and video are recorded.

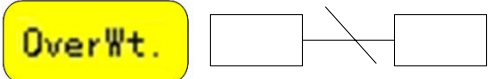
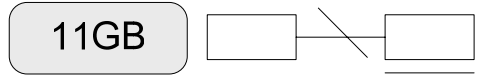
Recording status by color

	Green	Continuous recording is done.
	Red	Motion is recorded.
	Blue	Sensor signals are recorded.
	Yellow	Sound is recorded.
	Transparent	No recording is done.

Hard drive status



The right panel of the OSD shows the status of the hard drive where video data is recorded.

To turn HDD Overwrite ON/OFF, select **{Main Setup} -> {Storage Device}**.

▪When HDD Overwrite is turned ON	▪When HDD Overwrite is turned OFF
	

Network access

The right panel of the OSD shows the network connection status.

▪Network connected	▪Network disconnected
	

4-7-4 Starting and Stopping All Recordings

To start or stop All Recordings, press the **[Record]** button on the remote control or on the **[Record]** menu in real-time monitoring mode.



(1) Stopping All Recordings

- Press the **[Record]** button on the remote control or on the menu.
- On the login window, enter the ID and password and select **[OK]**.
- The recording of all channels then stops, and the recording status is displayed on the OSD as shown below:



(2) Starting All Recordings

- With Record All disabled, select the **[Record]** button on the remote control.
- On the login window, enter the ID and password and select **[OK]**.
- Based on the recording setting, all channels are set to record, and the recording status, displayed on the OSD as shown below:



4-7-5 Watermark

This system uses Watermark technology to detect video forgery and alteration.

Fragile Watermark technology is used.

Fragile Watermark technology detects the locations and types of counterfeited or altered video. It has been designed for purposes of authentication and to guarantee integrity of the video.

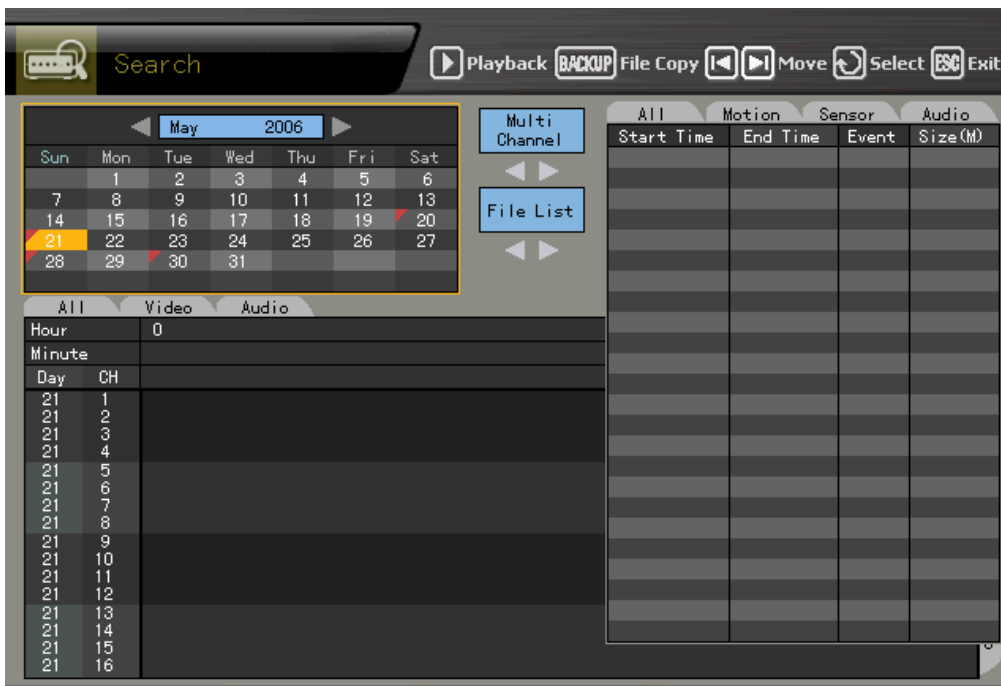
In Workhorse 120-8, the watermark is inserted into all recorded video data; any forgery and alteration of the video is detected.

4-8 Search

Use [Search] to search the recorded video by time and to play the searched video.

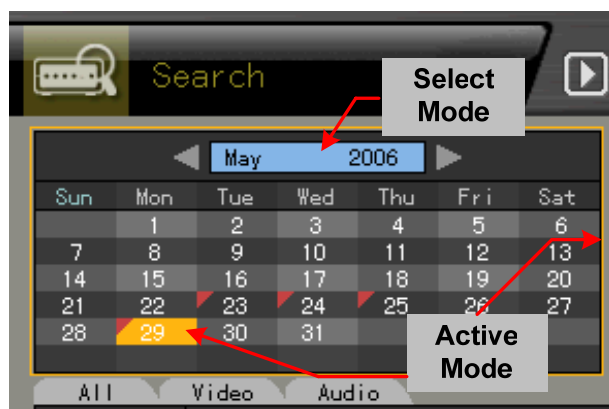
4-8-1 Selecting Search Mode

- In real-time monitoring mode, select the **[Search]** button on the remote control. The initial menus of the search mode are then displayed as shown below:

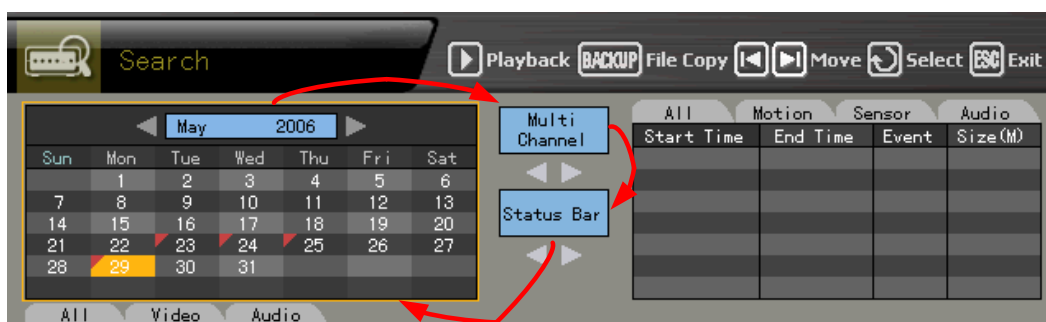


Activation mode and Selection mode

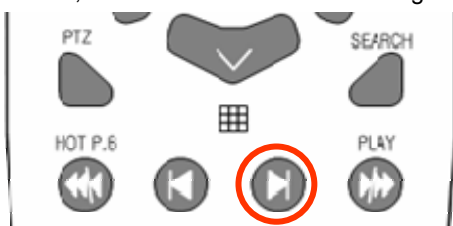
Activation mode	The field can be moved or selected on the OSD menu. At this time, the border or the highlighted panel of the activated window is displayed in orange.
Selection mode	Items are selected in OSD mode. At this time, the border of the selection window or the selection box is displayed in blue.



4-8-2 Search Method



- Before selecting the date, go to the search method selection box by pressing the [Tab] button. Afterward, select the Search method using the arrow(◀▶) buttons.



Multi channel	Searches the video of multiple channels for a defined time
Multi-date	Searches the video of one channel for multiple dates in a certain time zone
Multi-hour	Searches the video of one channel for the multiple time zones of the same date

4-8-3 Selecting the Search Tool

- Before selecting the date, go to the search tool selection box by pressing the [Tab] button. Afterward, select the search tool using the arrow(◀▶) buttons.



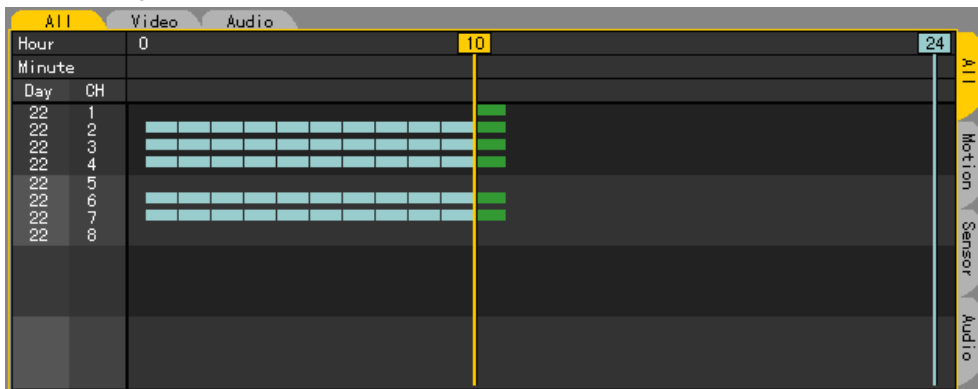
(1) Searching video using the bar graph

- Select the search date. The recorded video is then displayed in a bar graph as shown below:

Green	Continuous recording is done.
Red	Motion is recorded.
Blue	Sensor signals are recorded.
Yellow	Sound is recorded.
Light blue	This shows that recording was done before the time was changed.

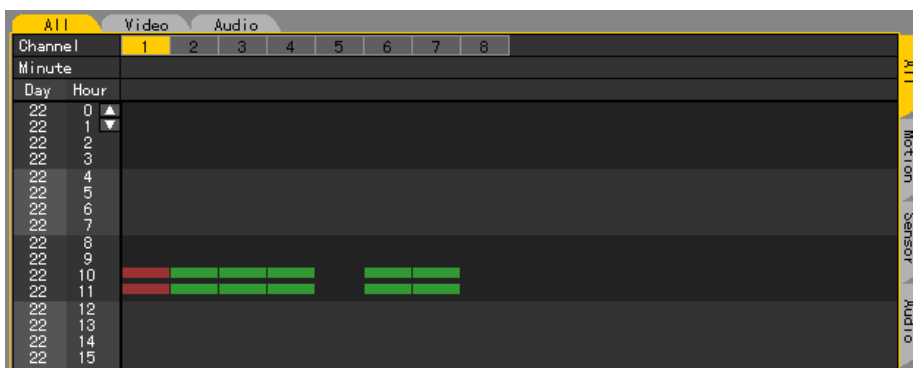
C) Multi-channel

Set the time using the **arrow** (◀▶) buttons.



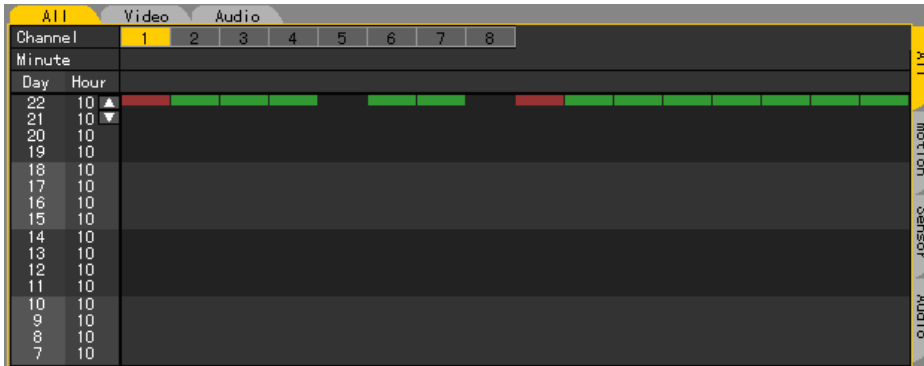
D) Multi-hour

Set the time and channel using the **arrow** (◀▶▲▼) buttons.



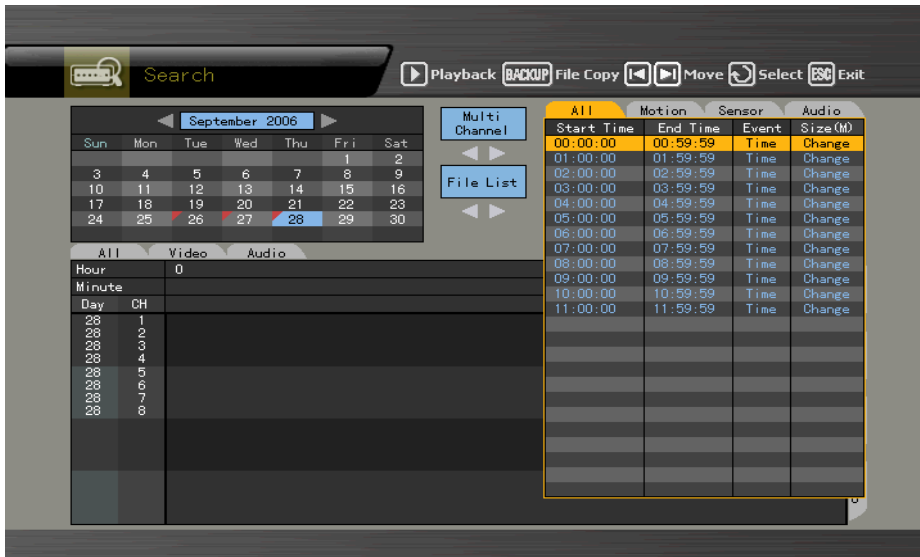
E) Multi-date

Set the time and channel using the **arrow** (◀▶▲▼) buttons.



(2) Search using the file list

- Select the search date. The list of recorded one-hour videos is then displayed as shown below:
- Navigate on the screen using the **arrow** (◀▶▲▼) buttons and select the time zone.



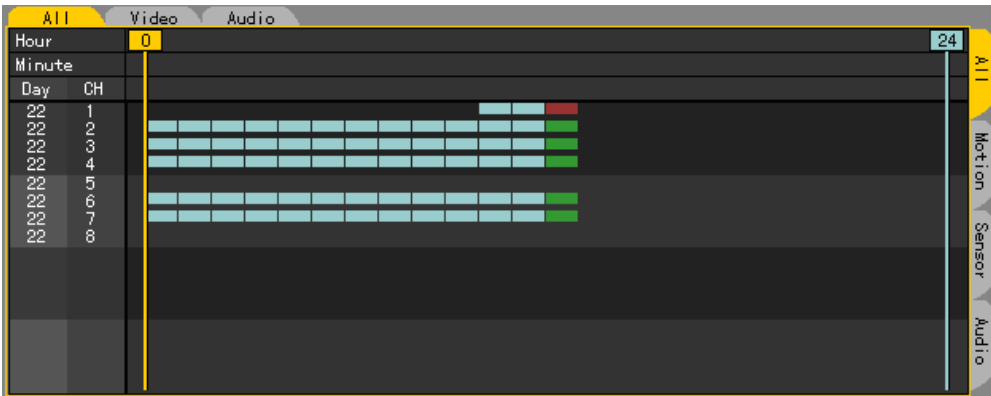
Yellow	Sound is recorded.
Light blue	This shows that recording was done before the time was changed.

- Set the time by using the **arrow** (◀▶) or numeric buttons or moving the time indicator and press the **[Select]** button.

Input numbers that are less than ten in two digits using the numeric buttons, e.g., 01 for 1 and 02 for 2.

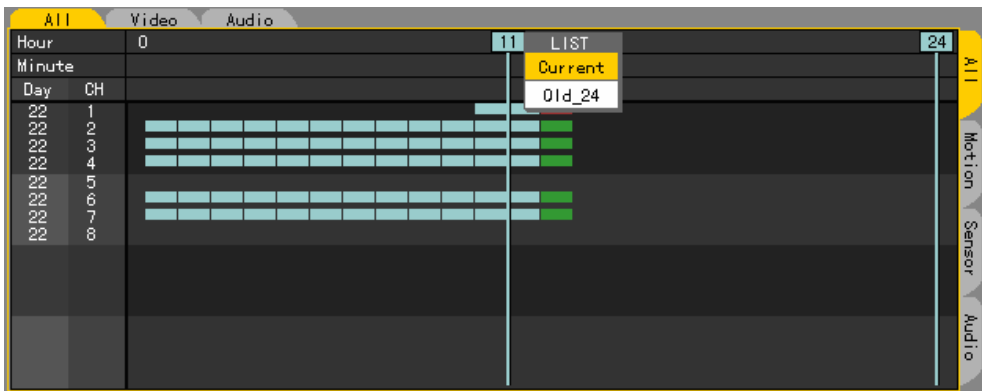
Viewing the status bar related to time change

- 1) After the changed folder is searched by the status bar, the bar for the corresponding time zone is displayed in light blue as shown below:



- 2) Selecting a changed time causes a list including the updated folder to be displayed as shown below:

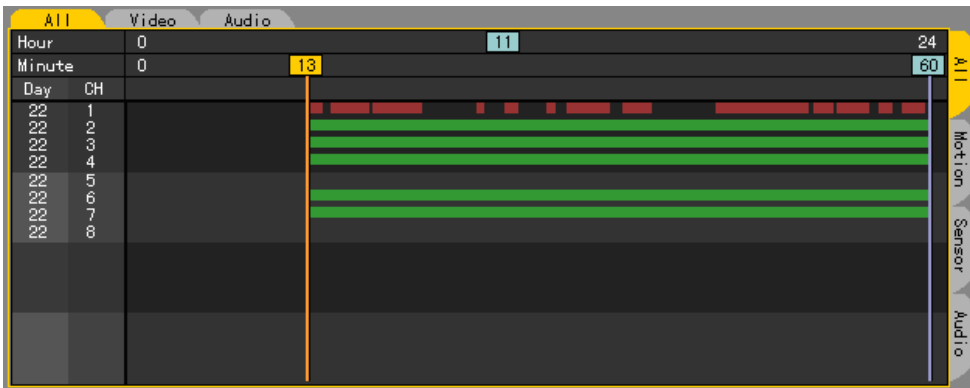
Supported only in multi-channel mode



(3) Minute

- Select the time. The recorded video of each channel is then displayed in a minute-unit bar graph.
- Define the starting time using the **arrow** (▲▼◀▶) and numeric buttons and click the **[Select]** button.

Input numbers that are less than ten in two digits using the numeric buttons, e.g., 08 for 8 and 09 for 9.

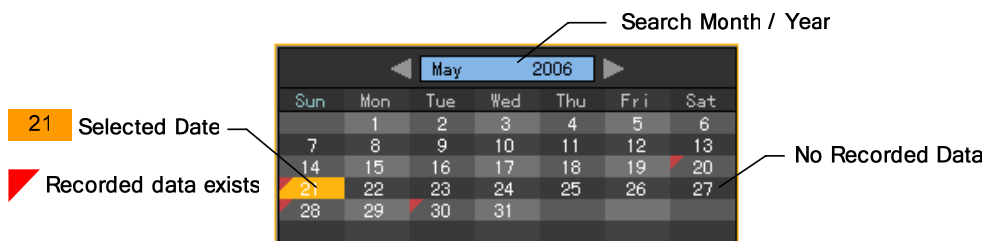


4-8-5 Multi-hour

Search the video of one channel for the multiple time zones of the same date.

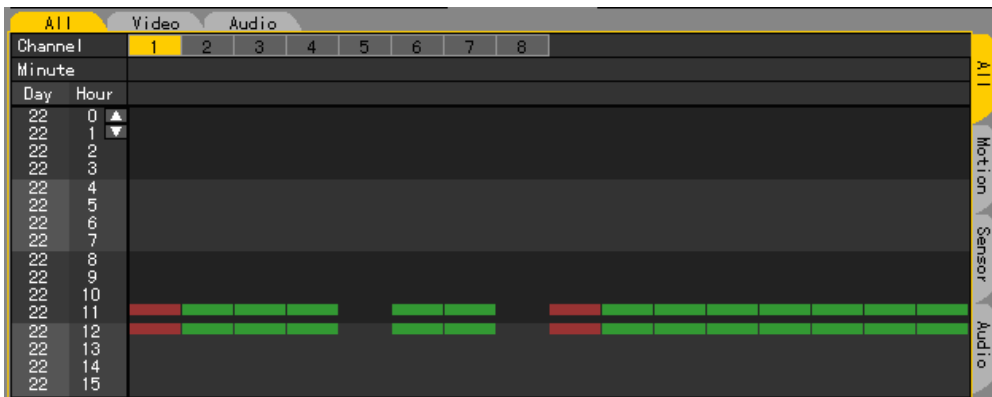
(1) Date search

- Select the search date using the **arrow (▲▼◀▶)** and **[Select]** buttons on the active calendar window as shown below:



(2) Selecting the starting time and channel

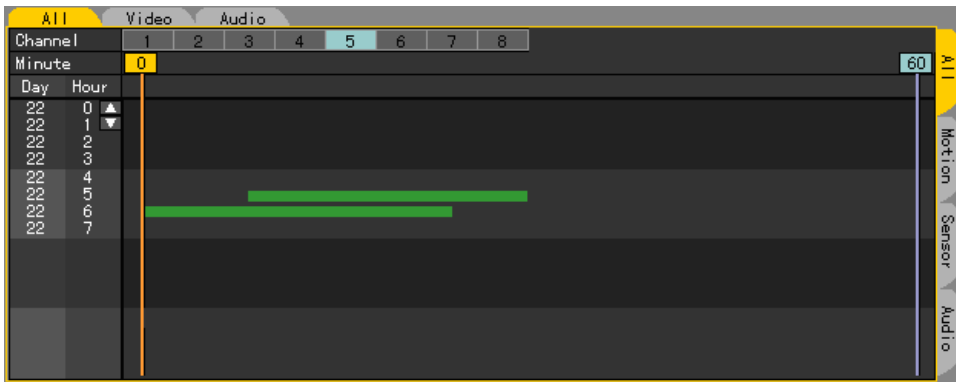
- Select the date. The time and channel of the selected date are then displayed as shown below.
- Define the time and channel using the **arrow (▲▼◀▶)** buttons.



(3) Minute

- The video recorded by the hour of the selected channel is displayed in a minute-unit bar graph.
- Define the time using the **arrow (▲▼◀▶)** and numeric buttons and press the **[Select]** button.

Input numbers that are less than ten in two digits using the numeric buttons, e.g., 08 for 8 and 09 for 9.



4-8-6 Multi-date

Search the video of one channel for multiple dates in a certain time zone.

(1) Date search

- Select the search date using the **arrow (▲▼◀▶)** and **[Select]** buttons on the active calendar window as shown below:

Search Month / Year

21 Selected Date

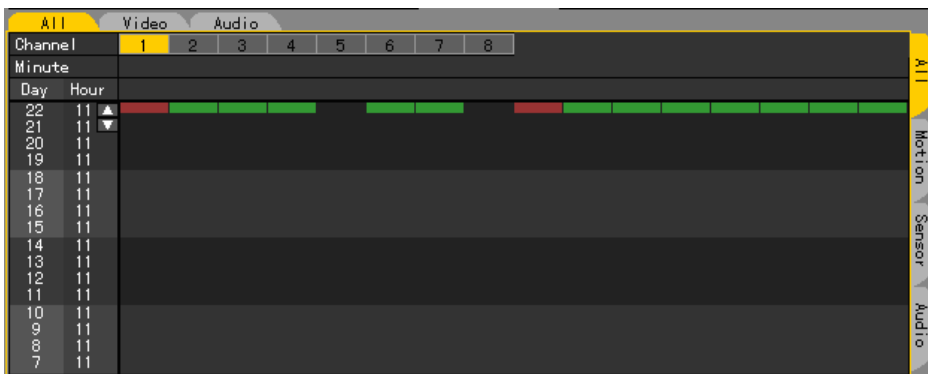
Recorded data exists

		May 2006					
Sun	Mon	Tue	Wed	Thu	Fri	Sat	
	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				

No Recorded Data

(2) Selecting the time and channel

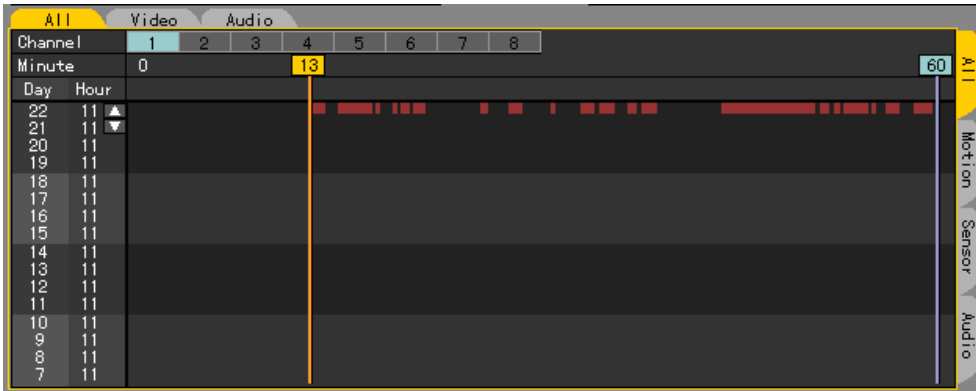
- Select the date. The date list, time, and channel are then sorted in descending order.
- Set the start time and channel using the **arrow (▲▼◀▶)** buttons.



(3) Minute

- The recorded video of the selected channel is displayed in a minute-unit bar graph.
- Set the time using the **arrow (▲▼◀▶)** and numeric buttons and press the **[Select]** button.

Input numbers that are less than ten in two digits using the numeric buttons, e.g., 08 for 8 and 09 for 9.



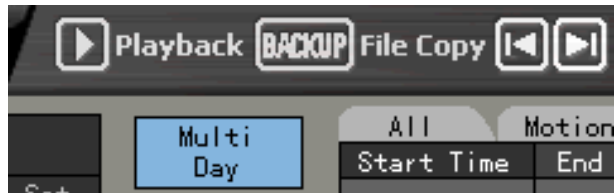
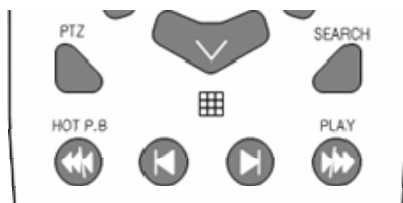
4-9 Play

4-9-1 Selecting Play Mode

To shift to **[Play]** mode, press the **[Play]** button in **{Search}**, **{Log}**, or **{Real-time Monitoring}** mode. In log or real-time monitoring mode, only Multi-channel mode is allowed. To search and play, however, either Multi-channel, Multi-date, or Multi-hour mode may be used.

Search

- In **{Search}** mode, select Multi-channel, Multi-date, or Multi-time.
- To play in **{Search}** mode, set the date, time or channel, and minute and select the **[Play]** button on the remote control or **[Playback]** button on the screen.



- The playback screen for Multi-channel, Multi-date, and Multi-hour is then displayed as shown below:

1) Multi-channel



Multi-time

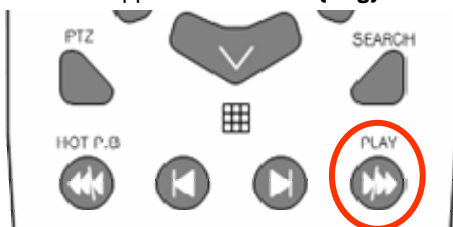


2) Multi-date



(2) Log

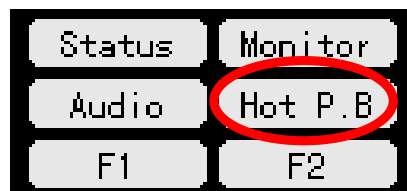
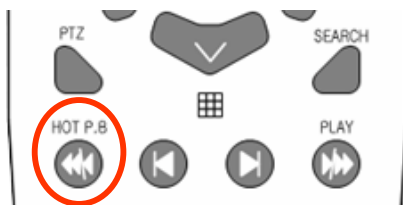
- In **{Log}** mode, select the date and press the **[Play]** button on the remote control or **[Playback]** button at the upper center of the **{Log}** mode screen.



- The initial playback screen in Multi-channel mode is then displayed.

(3) Hot playback

- Press the **[HOT PB]** button on the remote control or click **[Play]** on the real-time monitoring screen.



- Press the **[HOT PB]** button on the remote control or **[Play]** button on the menu to display the initial playback screen in Multi-channel mode.







The user cannot play the data recorded before the time change.

4-9-2 Playing and Controlling the Playing Speed

(1) Play

- In Play mode, press the Search button. The video is then played based on the features of each button.

Description of search buttons

Button	Name	Features
	Fast-forward frames by frame	Used to play frame-by-frame or to pause
	Forward play/Fast-forward	Used to play forward (x1) and to fast-forward (x30)
	Reverse frame by frame	Used to play frames backward frame-by-frame or to pause
	Reverse play/Fast reverse	Used to play backward (x1) and to rewind (x30)
	Speed down	Used to decrease the playing speed
	Speed up	Used to increase the playing speed

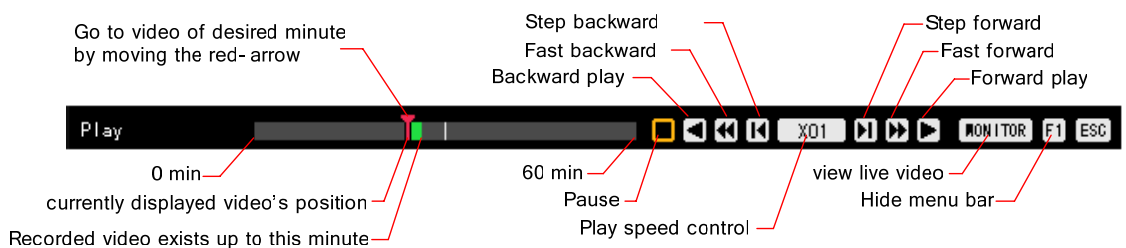
(2) Controlling the playing speed

A) Increasing/Decreasing the speed by X1

- To increase/decrease the speed by X1, press the **Speed (+/-)** button on the remote control. The user can play the video by x1~X29. In 1-channel mode, the user can play the video by x1 only.


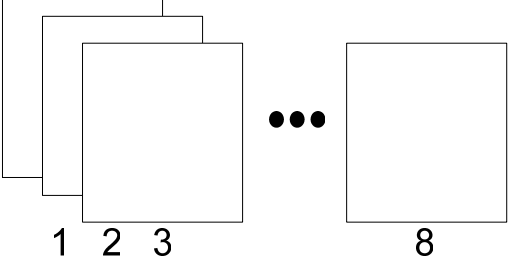
B) Increasing/Decreasing the speed by X30

- To increase/decrease the speed by X1, press the **Speed (+/-)** button on the remote control. The user can increase the speed by X30~X300.




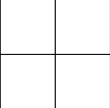
4-9-3 Playing on a Divided Screen


The video can be played on Full screen or 4, 9, or 16-divided screen.

 Select the sub-screen (8 sub-screens).	 1 2 3 ... 8
--	---

To view the video of a certain channel, select the desired channel by pressing the numeric buttons.

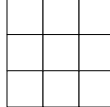
Pressing the  button on the remote control enables changing the screen. Double-click the desired channel for a full screen view. To return to 8-divided screen, double-click the image again.


 4-divided screen (2 sub-screens)	<table border="1" style="display: inline-table; margin-right: 20px;"> <tr><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td></tr> </table> <table border="1" style="display: inline-table;"> <tr><td>5</td><td>6</td></tr> <tr><td>7</td><td>8</td></tr> </table>	1	2	3	4	5	6	7	8
1	2								
3	4								
5	6								
7	8								

Press the  button on the remote control.

Pressing this button enables changing the screen. Double-click the desired channel for a full screen view.

Double-click any area on the View All window to convert into a 4-divided screen.

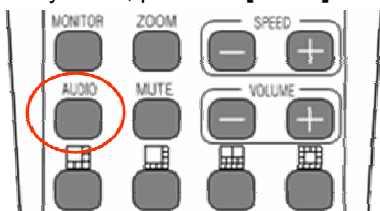
 9-divided screen (1 screen)	<table border="1" style="display: inline-table;"> <tr><td>1</td><td>2</td><td>3</td></tr> <tr><td>4</td><td>5</td><td>6</td></tr> <tr><td>7</td><td>8</td><td></td></tr> </table>	1	2	3	4	5	6	7	8	
1	2	3								
4	5	6								
7	8									

Press the  button on the remote control.

Pressing this button enables changing the screen. Double-click the desired channel for a full screen view. To return to 9-divided screen, double-click the image again.

4-9-4 Audio Playing

- In Play mode, press the **[Audio]** button on the remote control.



Drag the cursor to the upper right corner. On the popup menu, select the **[Audio]** button.



- The Audio symbol is then displayed for the channel with the voice recording set together with an orange-colored activation window.

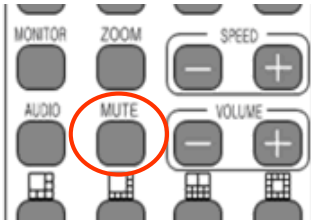


- Go to another window using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.
- The audio recorded on the selected channel is then played.

4-9-5 Mute

Use Mute to block the sound of the selected channel.

- In Play mode, press the **[Mute]** button on the remote control.



Drag the cursor to the upper right corner. On the popup menu, select **[Mute]**. An audio icon is then displayed on Channel No. 1.



- Press the **[Mute]** button. The Audio Output icon is then changed as shown below:



4-9-6 Smart Search

Use Smart Search to search the motion of objects in a certain zone quickly.

- In Play mode, select the **[Search]** button on the remote control.



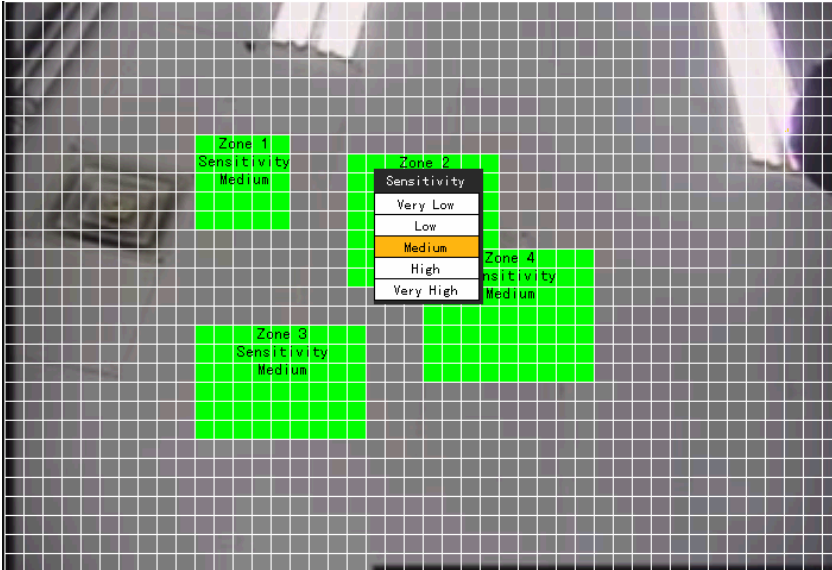
Drag the cursor to the upper right corner. On the popup menu, select the [Smart] button.



□ Select the channel to be searched.



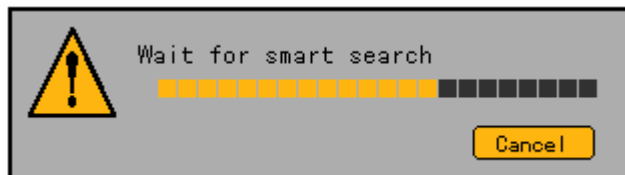
- On the zone setting window, go to the desired zone using the **arrow** (▲▼◀▶) buttons. To set the search zone, press **[Select]**. Dragging the blue focus using the **arrow** (▲▼◀▶) buttons causes the search zone to be displayed in green. After setting the search zone, press the **[Select]** button.



The user can set up to four search zones.

Right-click the green zone or press the **[Main Setup]** button on the remote control to set the motion degree. There are five motion degrees: Lowest, Low, Middle, High, and Highest. The default setting is Middle.

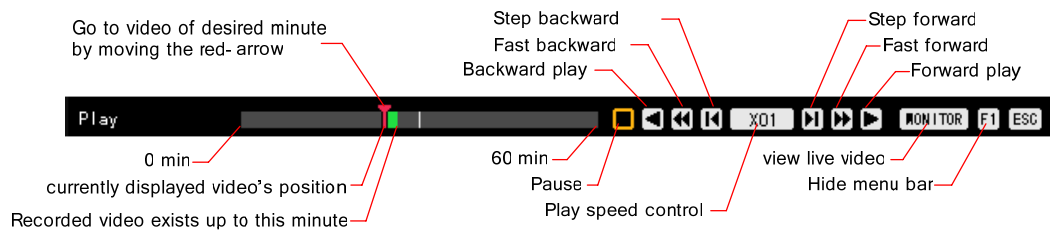
- After setting the search zone, press the **[Play]** button or go to the play control bar in Play mode. The play control bar is then displayed. Press the **[Play]** button to start Smart Search.



- After Smart Search is completed, the following search window appears:



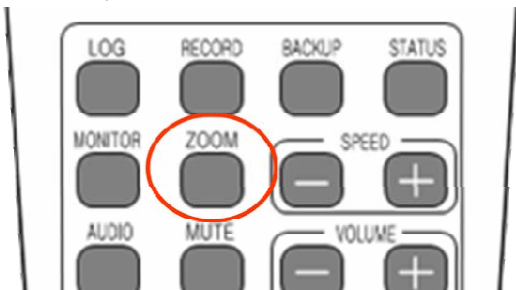
- The search zone where motion is detected turns green.
- The user can play the video searched via Smart Search using the following Search buttons.



4-9-7 Digital Zoom-in

The user can enlarge a certain panel of the video during playback.

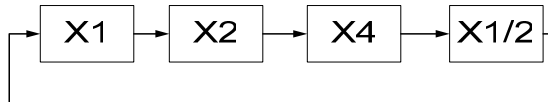
- In Play mode, press the **[Zoom]** button on the remote control.



Drag the cursor to the upper right corner. On the popup menu, select the **[Smart]** button.



- On the active window, select a channel using the **arrow** (◀▶) buttons and press the **[Select]** button. The selected channel is then displayed. The user can zoom in/out the video from X2, X4, up to X½ by pressing the **[Zoom]** button.



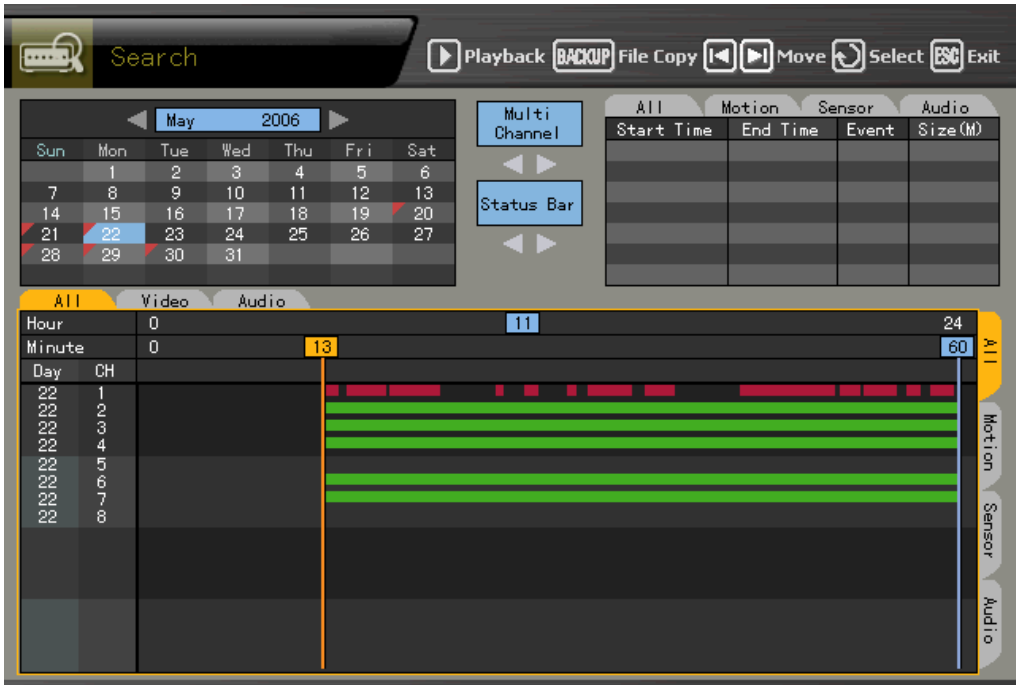
The user can select another channel using the **arrow** (▲▼◀▶) buttons. Moving the mouse with it Clicked enables changing the direction.

4-10 Backup

Workhorse 120-8 provides USB 2.0 and IEEE1394 backup interfaces. Before backing up data, check whether the CD-RW/DVD-RW is installed or connected to an external hard drive with USB2.0 or IEEE1394 interface, an external CD-RW/DVD-RW, or any other storage device to the USB2.0 port on the front side. Refer to the appendix for the list of supported external devices.

- Select **{Search}** – **{Multi Channel}** – **{Minute}** as shown below:

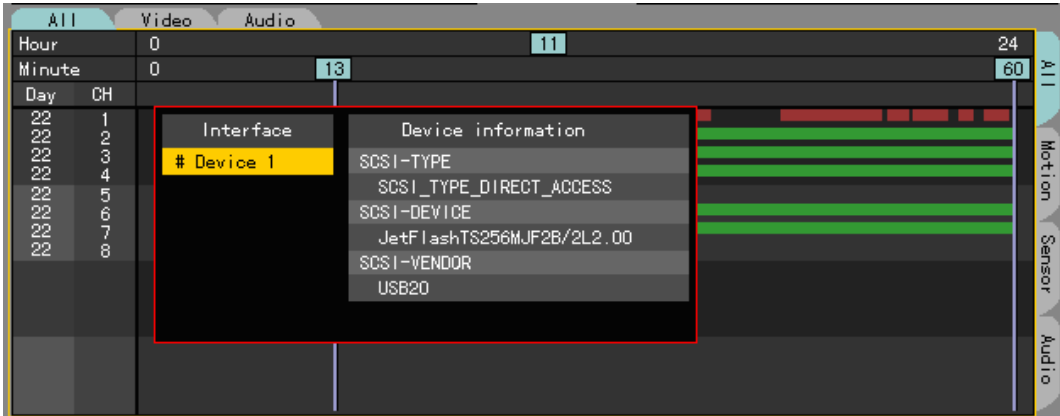
For the search method, refer to Section 4-8 Search.



- Press the **[Backup]** button on the remote control or go to the **[Backup]** menu at the center of the **{Search}** mode screen.

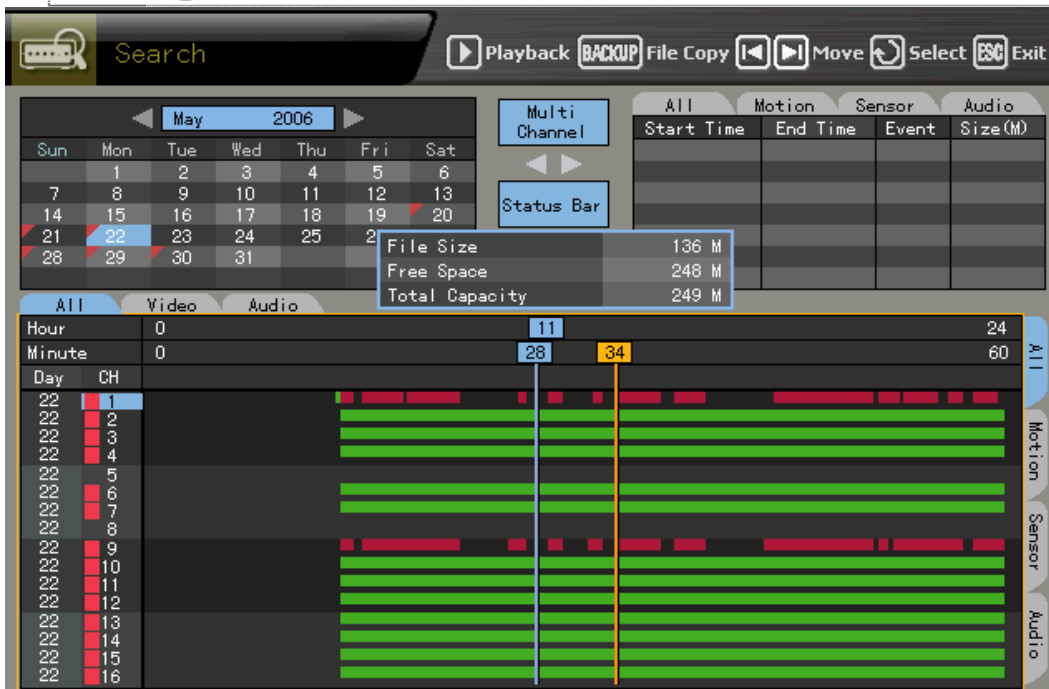


- In the access device selection list, select one for the connected storage devices

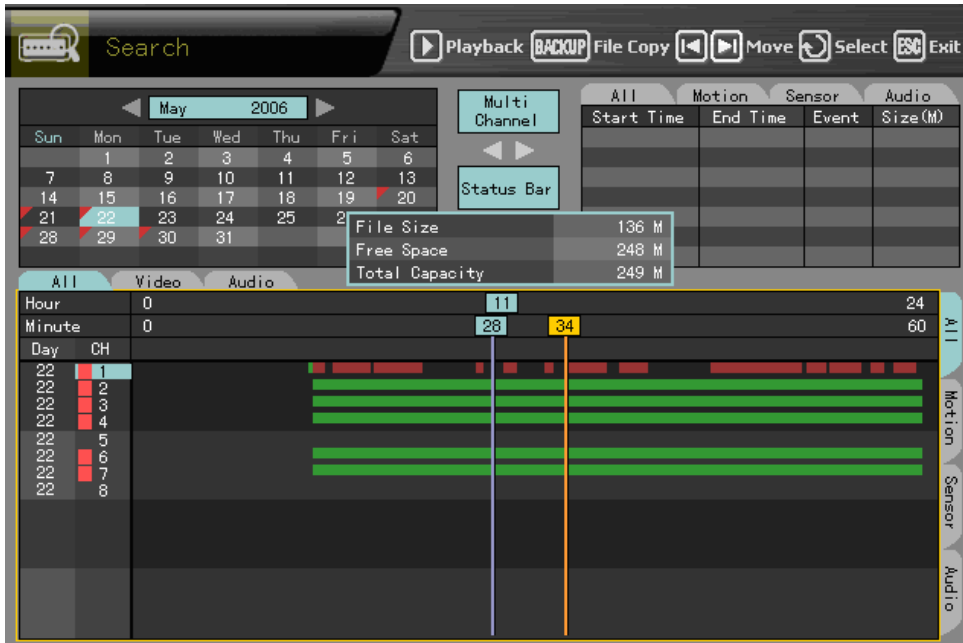


- Check the backup capacity and adjust the available space by using the **arrow** (▲▼◀▶) buttons or pressing the **[Select]** button.

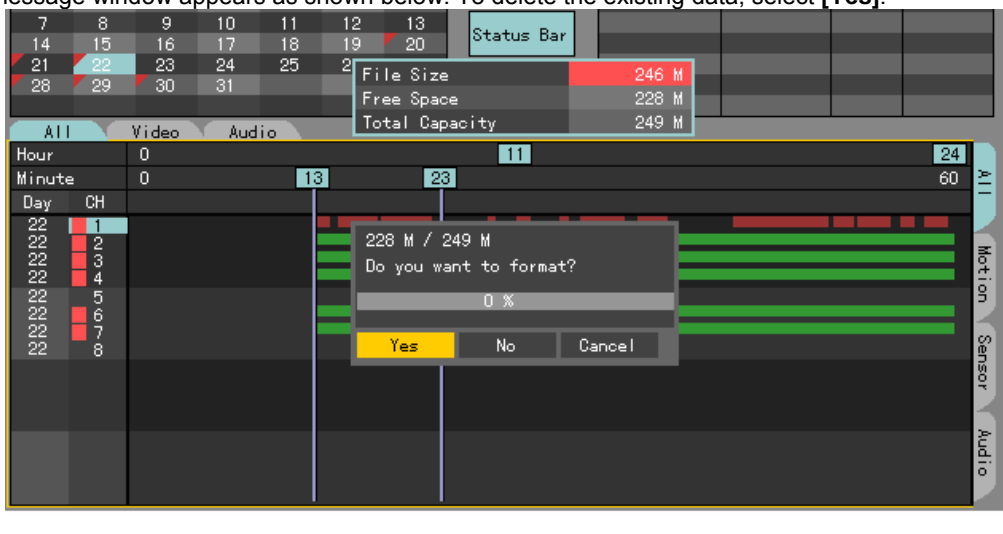
Note ! To back up a channel or cancel backup, go to the backup channel by using the **arrow** (▲▼) buttons and press the **[Select]** button. The backup channel is then displayed in red. To change the backup time, go to the starting point of the backup time by selecting the **▶** button and change the minute bar using the **arrow** (◀▶) buttons.



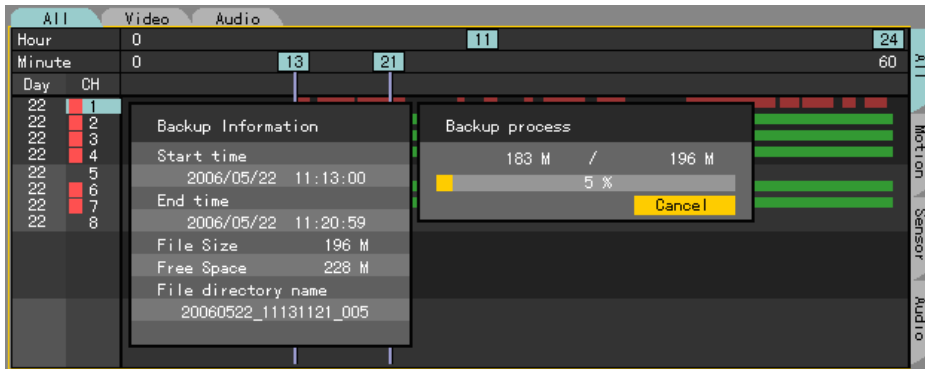
- Select the **[Backup]** button or click **[Backup]** at the upper center on the **{Search}** mode screen. The corresponding backup information is then displayed. Check the backup information and click **[Yes]** on the message window as shown below:



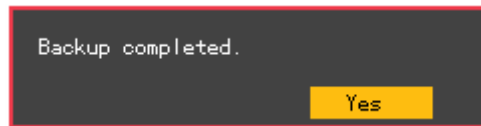
If the backup device is not formatted, or in case the storage space is already in use, a message window appears as shown below. To delete the existing data, select **[Yes]**.



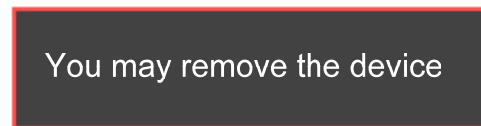
- The backup process starts after the following message appears:



- After backup is completed, press the **[Select]** button on the message window as shown below:



- Once the following message appears, separate the backup device from the USB 2.0 port on the front side.



4-11 PTZ Camera Control

4-11-1 Conditions for Using PTZ

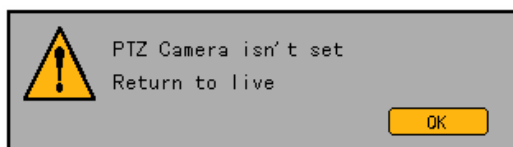
- The PTZ camera must connect with the system.
 - Select **{Additional Setup}** -> **{PTZ Setup}** and check whether the PTZ camera setting is appropriate.
- For more information on PTZ camera setting, select **{Additional Setup}** -> **{PTZ Setup}**.

4-11-2 Shifting to PTZ Mode

- In real-time monitoring mode, press the **[PTZ]** button on the remote control.
- An icon is then displayed on the channel with the PTZ camera set together with the channel selection window as shown below:



- If the PTZ camera is not set for the channel, the following message window appears:



Channel selection window

Activation mode	The channel selection window can be moved. At this time, the border of the channel screen is displayed in orange.
Selection mode	The channel is selected. At this time, the border of the channel screen is displayed in blue.

4-11-3 PTZ Control

(1) Horizontal/Vertical rotation

- From **{PTZ}** mode, go to the channel selection window and select a channel from among those with the PTZ camera set to control the PTZ.
- After a channel is selected, the horizontal/vertical rotation mode can be selected as shown below:




- Adjust vertically or horizontally using the **arrow (▲▼◀▶)** buttons.
- To select a divided screen in horizontal/vertical rotation mode, select the right/left **[Tab]** buttons.

(2) Zoom-in/Zoom-out

- In horizontal/vertical rotation mode, press the **[PTZ]** button on the remote control. A toolbar is then displayed as shown below:




Zoom out (▲) and zoom in (▼) using the **arrow (▲▼)** buttons.

- To select a divided screen in zoom in/out mode, press the right/left **[Tab]**  buttons.

(3) Focus control

- In zoom in/out mode, press the **[PTZ]** button on the remote control. A toolbar is then displayed as shown below:



- Adjust the camera focus using the **arrow (▲▼)** buttons.
- To select another screen in focus control mode, press the right/left **[Tab]**  buttons.

(4) Preset

Use Preset to save the horizontal/vertical/extended/focus settings of a PTZ camera.

- In horizontal/vertical rotation, zoom, or focus control mode, press the **[Select]** button.
- Select the number using the numeric and **arrow (◀▶)** buttons on the OSD menu and press the **[Select]** button.
 - The preset numbers are between 1 and 8.



- The selected number is then changed into blue, and the current screen, saved together with the selected number.



(5) Using the Preset feature

- In horizontal/vertical rotation, zoom, or focus control mode, press any numeric button between 1 and 8 on the remote control.
- The selected horizontal/vertical/extended/focus setting of the PTZ camera is then displayed.

(6) Using the Tour feature

Use Tour to select the preset settings sequentially.

Use Preset to save the horizontal/vertical/extended/focus settings of the PTZ camera.

For more information on setting the Tour feature, select **{Additional Setup}** -> **{PTZ Setup}** -> **{Tour}**.

- Once the Tour feature is enabled, No. 9 or No. 0 on the OSD is displayed in blue in horizontal/vertical rotation, zoom, or focus control mode.



- In horizontal/vertical rotation, zoom, or focus control mode, press the numeric buttons (9, 0) on the remote control.
- The current screens are then changed automatically according to the defined tour order.
- To disable the Tour feature, press the currently enabled Tour numbers (9 and 0).

Tour1 Set as 9.

Tour2 Set as 0.

Chapter 5 System Setup

System setup includes **{Main Setup}** and **{Additional Setup}**:

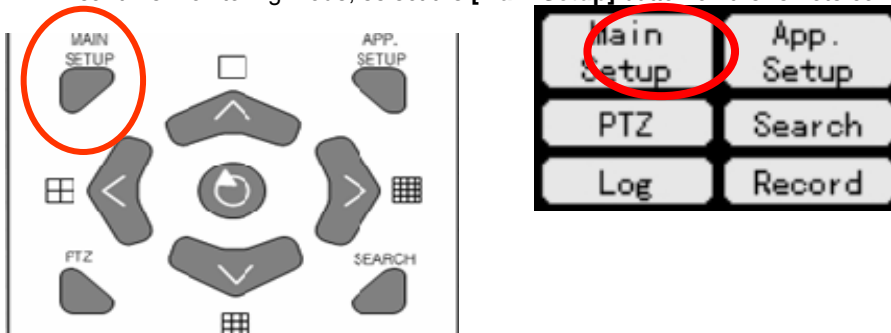
Main Setup	Additional Setup
Data setup	PTZ setup
Recording schedule	Network
System	
Storage device	
NTP	
Advanced	

5-6 Main Setup

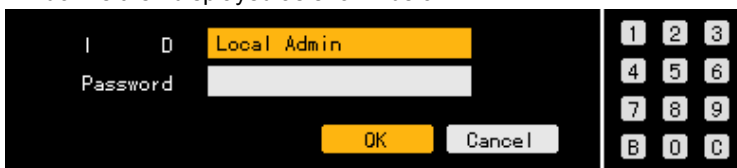
Use **{Main Setup}** to set the recording, system environment, and other major features.

5-6-1 Starting the Main Setup

- In real-time monitoring mode, select the **[Main Setup]** button on the remote control.



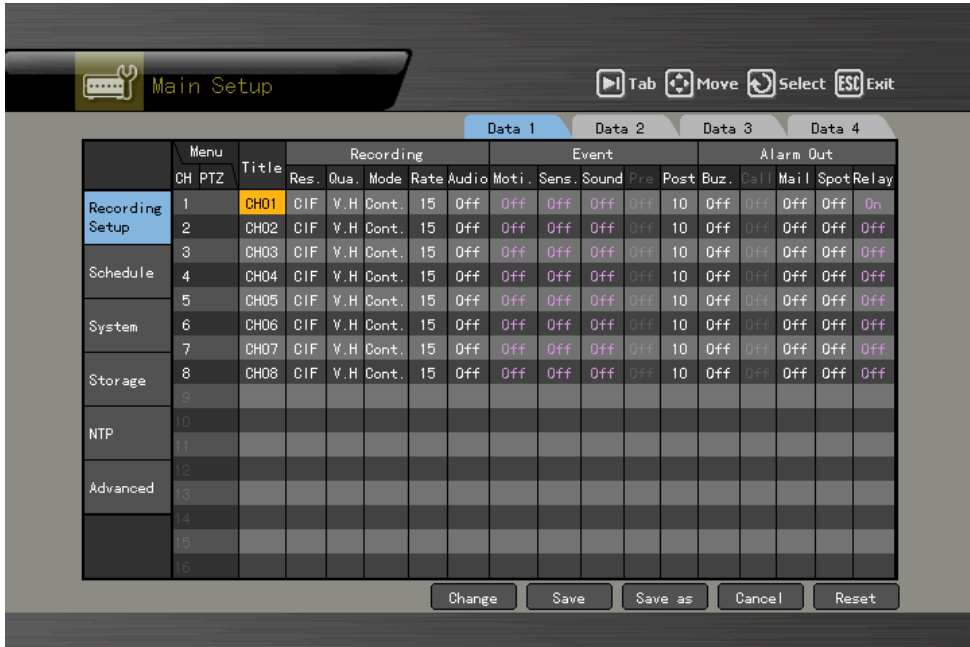
- The login window is then displayed as shown below:



- Select the login account, enter the password using the numeric buttons on the remote control, and select **[OK]**.

- The default password of the local administrator is "00000."
- Go to the ID selection box and change the ID using the **arrow (▲▼)** buttons.

- Once the correct password is inputted, the initial screen of **{Main Setup}** is displayed as shown below:




5-6-2 Recording Setup

Used to set the recording and events

(1) Selecting the recording setup menu mode

{Recording Setup} supports two modes: data mode and channel mode.

A) Selecting the menu type

- Navigate by pressing the **[TAB]**  and **arrow (◀▶)** buttons on the remote control. Select the **[Change]** button of the data mode menu and channel mode menu and press the **[Select]** button.

Data mode menu	Change	Save	Save as	Cancel	Reset
Channel mode menu	Change	Save	Cancel	Reset	

■ Data mode

The user can set the data for Channel Nos. 1 ~ 8 based on the data profile of Data 1 ~ Data 4 as shown below:

Menu	CH	PTZ	Title	Recording				Event				Alarm Out							
				Res.	Qva.	Mode	Rate	Audio	Moti.	Sens.	Sound	Pre	Post	Buz.	Ball	Mail	Spot	Relay	
Recording Setup	1		CH01	CIF	V.H	Cont.	15	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	0n
	2		CH02	CIF	V.H	Cont.	15	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	3		CH03	CIF	V.H	Cont.	15	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
Schedule	4		CH04	CIF	V.H	Cont.	15	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	5		CH05	CIF	V.H	Cont.	15	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
System	6		CH06	CIF	V.H	Cont.	15	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	7		CH07	CIF	V.H	Cont.	15	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
Storage	8		CH08	CIF	V.H	Cont.	15	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	9																		
NTP	10																		
	11																		
Advanced	12																		
	13																		
	14																		
	15																		
	16																		

■ Channel mode

The user can set the data of Channel Nos. 1 ~ 4 based on four channel groups as shown below:

Menu	CH	Data	Title	Recording				Event				Alarm Out							
				Res.	Qva.	Mode	Rate	Audio	Moti.	Sens.	Sound	Pre	Post	Buz.	Ball	Mail	Spot	Relay	
Recording Setup	1	1	CH 01	CIF	V.H	Cont.	30	Off	Full	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	2	1	CH 01	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	3	1	CH 01	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
Schedule	4	1	CH 01	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	2	1	CH 02	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
System	2	2	CH 02	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	3	2	CH 02	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
Storage	4	2	CH 02	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	3	1	CH 03	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
NTP	2	3	CH 03	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	3	3	CH 03	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
Advanced	4	3	CH 03	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
	4	1	CH 04	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
		2	CH 04	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
		3	CH 04	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off
		4	CH 04	CIF	V.H	Cont.	30	Off	Off	Off	Off	Off	10	Off	Off	Off	Off	Off	Off

(2) Saving the recording setting

Set each menu in {Recording Setup} and save the new setting before exiting the menu.


B) Save

- Select **[Save as]** using the **[Tab]**  and **arrow (◀▶)** buttons on the remote control and press the **[Select]** button.



C) Save as

Save the current setting as multiple data from Data 1 to Data 4.

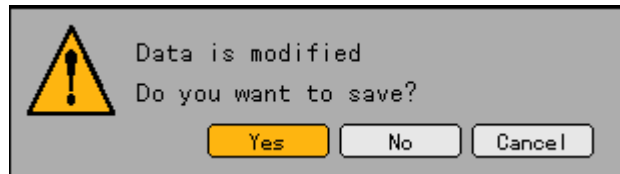
- Select **[Save]** using the **[Tab]**  and **arrow (◀▶)** buttons on the remote control and press the **[Select]** button.



- The user can select multiple data from Data 1 to Data 4. The selected data are then displayed in green, and others, in blue.

D) Saving on the message window

- Closing the window without saving the new setting causes a warning message to appear as shown below:



- Select **[Yes]** to save the new setting.

Yes	Saves the current setting and goes back to the main setup screen
No	Goes back to the main setup screen without saving the current setting
Cancel	Cancels the current operation and goes back to the previous screen

(3) Naming a channel

Used to name each channel and to set the camera input

- On the **{Data Setup} -> {Data 1-4} -> {Title}** menu, select the desired channel using the **arrow** buttons (▲▼◀▶) and press the **[Select]** button.
- On the selection box, select **{Title}** and press the **[Select]** button.

Menu		Title	Recording				
CH	PTZ		Res.	Qua.	Mode	Rate	Audio
1		CH 01	CIF	V.H	Cont.	30	Off
2		CH 02	CIF	V.H	Cont.	30	Off
3		CH 03	CIF	V.H	Cont.	30	Off
4		CH 04	CIF	V.H	Cont.	30	Off
5		CH 05	CIF	V.H	Cont.	30	Off
6		CH 06	CIF	V.H	Cont.	30	Off
7		CH 07	CIF	V.H	Cont.	30	Off

Menu		Title	Recording				
CH	PTZ		Res.	Qua.	Mode	Rate	Audio
1		CH 01	CIF	V.H	Cont.	30	Off
2		CH 02	CIF	V.H	Cont.	30	Off
3		CH 03	CIF	V.H	Cont.	30	Off
4		CH 04	CIF	V.H	Cont.	30	Off
5		CH 05	CIF	V.H	Cont.	30	Off
6		CH 06	CIF	V.H	Cont.	30	Off
7		CH 07	CIF	V.H	Cont.	30	Off

- On the input box, enter the channel name using the **arrow** (▲▼◀▶) buttons and press the **[Select]** button.

CH 01

a	b	c	d	e	f	g	h	i
j	k	l	m	n	o	p	q	r
s	t	u	v	w	x	y	z	0
1	2	3	4	5	6	7	8	9
@	#	&	_	+	-	*	/	%
=	.	,	^	?	!	~	()

Caps Lock
BS
Space
취소
저장 & 종료

Caps lock	Used to shift to upper case
BS	Backspace; used to delete
Space	Used to insert space
Cancel	Used to cancel the save
Save and exit	Used to save and exit

- After inputting the data, select **[Save and Exit]** using the **arrow** (▲▼◀▶) buttons or **[Tab]** button and save the setting by pressing the **[Select]** button.

(4) Hiding a channel

Hides the channel video on the real-time monitoring screen

- On the **{Data Setup} -> {Data 1-4} -> {Title}** menu, select the desired channel using the **arrow** buttons(▲▼◀▶) and press the **[Select]** button.
- On the selection box, select **[Covert]** and press the **[Select]** button.

Menu		Title	Recording				
CH	PTZ		Res.	Qua.	Mode	Rate	Audio
1		CH 01	CIF	V.H	Cont.	30	Off
2		CH 02	CIF	V.H	Cont.	30	Off
3		CH 03	CIF	V.H	Cont.	30	Off
4		CH 04	CIF	V.H	Cont.	30	Off
5		CH 05	CIF	V.H	Cont.	30	Off
6		CH 06	CIF	V.H	Cont.	30	Off
7		CH 07	CIF	V.H	Cont.	30	Off

Menu		Title	Recording				
CH	PTZ		Res.	Qua.	Mode	Rate	Audio
1		CH 01	CIF	V.H	Cont.	30	Off
2		CH 02	CIF	V.H	Cont.	30	Off
3		CH 03	CIF	V.H	Cont.	30	Off
4		CH 04	CIF	V.H	Cont.	30	Off
5		CH 05	CIF	V.H	Cont.	30	Off
6		CH 06	CIF	V.H	Cont.	30	Off
7		CH 07	CIF	V.H	Cont.	30	Off

Screen display based on the recording setup and video input of the camera

- VL** Stands for Video Loss, which indicates camera video loss or absence of video on the channel
- VD** Stands for Video Disconnection, which indicates the presence of a video input on the

- VC** channel but Record and Live are turned off
Stands for Video Covert, which means that recording is done but the video is hidden only in Live state

(5) Channel ON/OFF

Used to connect the camera to each channel port and to set the video input

- On the **{Data Setup} -> {Data 1-4} -> {Title}** menu, select the desired channel and press the **[Select]** button.

Menu		Title	Recording				
CH	PTZ		Res.	Qua.	Mode	Rate	Audio
1		CH 01	CIF	V.H	Cont.	30	Off
2		CH 02	CIF	V.H	Cont.	30	Off
3		CH 03	CIF	V.H	Cont.	30	Off
4		CH 04	CIF	V.H	Cont.	30	Off
5		CH 05	CIF	V.H	Cont.	30	Off
6		CH 06	CIF	V.H	Cont.	30	Off
7		CH 07	CIF	V.H	Cont.	30	Off

Menu		Title	Recording				
CH	PTZ		Res.	Qua.	Mode	Rate	Audio
1		CH 01	CIF	V.H	Cont.	30	Off
2		CH 02	CIF	V.H	Cont.	30	Off
3		CH 03	CIF	V.H	Cont.	30	Off
4		CH 04	CIF	V.H	Cont.	30	Off
5		CH 05	CIF	V.H	Cont.	30	Off
6		CH 06	CIF	V.H	Cont.	30	Off
7		CH 07	CIF	V.H	Cont.	30	Off

To set all channels at the same time, select **{Title}** and press the **[Select]** button.

Menu		Title	Recording				
CH	PTZ		Res.	Qua.	Mode	Rate	Audio
1		CH 01	CIF	V.H	Cont.	30	Off
2		CH 02	CIF	V.H	Cont.	30	Off
3		CH 03	CIF	V.H	Cont.	30	Off
4		CH 04	CIF	V.H	Cont.	30	Off
5		CH 05	CIF	V.H	Cont.	30	Off
6		CH 06	CIF	V.H	Cont.	30	Off
7		CH 07	CIF	V.H	Cont.	30	Off

Menu		Title	Recording				
CH	PTZ		Res.	Qua.	Mode	Rate	Audio
1		CH 01	CIF	V.H	Cont.	30	Off
2		CH 02	CIF	V.H	Cont.	30	Off
3		CH 03	CIF	V.H	Cont.	30	Off
4		CH 04	CIF	V.H	Cont.	30	Off
5		CH 05	CIF	V.H	Cont.	30	Off
6		CH 06	CIF	V.H	Cont.	30	Off
7		CH 07	CIF	V.H	Cont.	30	Off

- On the selection box, select **[On]** or **[Off]** and press the **[Select]** button.

On	Connects the inputted video of the camera
Off	Disconnects the inputted video of the camera

(6) Record

Sets the resolution, recording quality, recording type, recording frame, and audio recording status

A)Resolution

Sets the resolution of the recorded channel

- On the **{Data Setup}->{Data 1-4}-> {Recording}->{Resolution}** menu, select the desired channel and press the **[Select]** button.

Recording				
Res.	Qua.	Mode	Rate	Audio
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off

Recording				
Res.	Qua.	Mode	Rate	Audio
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off

To set all channels at the same time, select **{Res}** and press the **[Select]** button.

Resolution				
Res.	Qua.	Mode	Rate	Audio
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off

Recording				
Res.	Qua.	Mode	Rate	Audio
CIF	Field	Cont.	30	Off
CIF	Field	Cont.	30	Off
CIF	Field	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off

- On the selection box, set the sensitivity using the **arrow** and **[Select]** buttons.

Resolution by video type

Type \ Resolution	NTSC	PAL
CIF	320x240	320x288
Field	640x240	640x288
Full	640x480	640x576

B) Recorded video quality

Sets the quality of the recorded video

- On the **{Data Setup}**->**{Data 1~4}** -> **{Recording}** -> **{Quality}** menu, select the desired channel and press the **[Select]** button.

Recording				
Res.	Qua.	Mode	Rate	Audio
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off

Recording				
Res.	Qua.	Mode	Rate	Audio
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off

To set all channels simultaneously, select **(Quality)** and press the **[Select]** button.

Quality				
Res.	Qua.	Mode	Rate	Audio
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off

Recording				
Res.	Qua.			
CIF	V.H	Lowest		
CIF	V.H	Low		
CIF	V.H	Medium		
CIF	V.H	High		
CIF	V.H	Highest		
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off

- On the selection box, set the recording frame using the **arrow** and **[Select]** buttons.

Note! Size of the recording image files depending on the recording quality

Recording quality	Size of recording image file
Lowest	<div style="text-align: center;"> ↑ small ↓ large </div>
Low	
Middle	
High	
Highest	

C) Recording type

Recording Type	Description
Automatic	Sets the event recording speed and normal recording speed separately for automatic recording based on the setting
Continuous	Recording done based on the normal frame setting
Motion	Recording done based on the event frame setting in case motion is detected
Sensor	Recording done based on the event frame setting in case of inputted signal from an external sensor
Sound	Recording done based on the event frame setting in case sound is detected

■ Recording conditions

Recording Type	Setting	
Continuous	{Record} → {Rate} → Normal: 1~30	
Motion	{Event} → {Motion}: Panel or All	{Record} → {Rate} → Event: 1~30
Sensor	{Event} → {Sensor}: 1~16	

Sound	{Event} → {Sound}:1~16
Automatic	Enables selecting both normal and event recording frames at the same time

- On the **{Recording Setup} -> {Data 1~4} -> {Recording} -> {Mode}** menu, select the desired channel using the **arrow** buttons (▲▼◀▶) and press the **[Select]** button.

Recording				
Res.	Qua.	Mode	Rate	Audio
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off
CIF	V.H	Cont.	30	Off

Recording				
Qua.	Mode	Rate	Audio	Moti.
V.H	Cont.	30	Off	Full
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off

To set all channels at the same time, select **{Mode}** and press the **[Select]** button.

Recording Mode				
Qua.	Mode	Rate	Audio	Moti.
V.H	Cont.	30	Off	Full
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off

Recording				
Qua.	Mode	Rate	Audio	Moti.
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off
V.H	Cont.	30	Off	Off

- On the selection box, set the recording frame using the **arrow** (▲▼) and **[Select]** buttons.

D) Recording frame

Recording frames include the normal type and event type.

Normal	Sets the recording frame rate for Automatic and Continuous recording
Event	Sets the recording frame rate for Automatic, Motion, Sensor, and Sound recording

Note ! Maximum recording frame by resolution

Model \ Resolution	CIF (320X240)	Field (640X240)	Full (640X480)
Workhorse 120-8	120fps	60fps	30fps

- On the **{Recording Setup}** -> **{Data 1~4}** -> **{Recording}** -> **{Rate}** menu, select the desired channel using the **arrow** buttons and press the **[Select]** button.
- On the selection box, set the recording type using the **arrow** and **[Select]** buttons.

Recording					
Res.	Qua.	Mode	Rate	Audio	Moti.
CIF	V.H	Cont.	30	5	
CIF	V.H	Cont.	10	6	
CIF	V.H	Cont.	10	8	
CIF	V.H	Cont.	10	10	
CIF	V.H	Cont.	30	15	
CIF	V.H	Cont.	30	Off	Off

To set all channels at the same time, select **{Rate}** and press the **[Select]** button.

E) Audio setting

Enables detecting audio input from an external device connected to the system

- On the **{Main Setup}** -> **{Data 1~4}** -> **{Recording}** -> **{Audio}** menu, select the desired channel and press the **[Select]** button.

Recording					
Res.	Qua.	Mode	Rate	Audio	Moti.
CIF	V.H	Cont.	30	Off	
CIF	V.H	Cont.	30	1	
CIF	V.H	Cont.	30	Off	
CIF	V.H	Cont.	30	2	
CIF	V.H	Cont.	30	Off	
CIF	V.H	Cont.	30	Off	

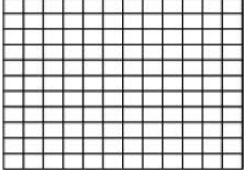
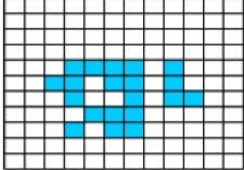
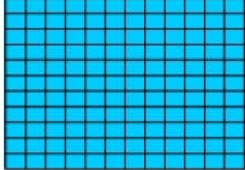
Recording					
Res.	Qua.	Mode	Rate	Audio	Moti.
CIF	V.H	Cont.	30	5	
CIF	V.H	Cont.	10	6	
CIF	V.H	Cont.	10	8	
CIF	V.H	Cont.	10	10	
CIF	V.H	Cont.	30	15	
CIF	V.H	Cont.	30	Off	Off

- On the selection box, select the audio channel using the **arrow**(▲▼) and **[Select]** buttons.

(7) Event setup

A) Motion

Use the Motion function to detect motion in the video. Modes include OFF, Partial, and Full. The default setting is OFF. The full video of a certain channel is displayed as shown below (blocks are used to separate the areas where motion is detected).

➤ Not to detect motion	➤ Detect motion from the masked area	➤ Detect motion from the entire image
 <p>Off</p>	 <p>Partial</p>	 <p>Full</p>

■ **Full**

Used to detect motion in each zone

- On the {Data Setup} -> {Data 1~4} -> {Event} -> {Motion} menu, select the desired channel using the arrow (▲▼◀▶) buttons and press the [Select] button.

Event				
Moti.	Sens.	Sound	Pre	Post
Part	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

Event				
Moti.	Sens.	Sound	Pre	Post
Part	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

To set all channels at the same time, select {Motion} and press [Select].

Motion Detection				
Moti.	Sens.	Sound	Pre	Post
Part	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

Event				
Moti.	Sens.	Sound	Pre	Post
Part	Off	Off	Off	10
Part	Partial	Off	Off	10
Off	Full	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

- On the selection box, select [Full] using the arrow(▲▼) and [All] buttons.

■ **Partial**

Used to detect motion only in a selected zone

- On the {Recording Setup} -> {Data 1~4} -> {Event} -> {Motion} menu, select the desired channel using the arrow (▲▼◀▶) buttons and press the [Select] button.

Event				
Moti.	Sens.	Sound	Pre	Post
Part	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

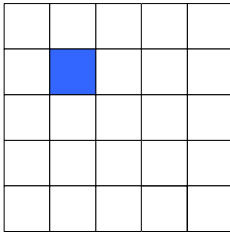
Event				
Moti.	Sens.	Sound	Pre	Post
Part	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Partial	Off	Off	10
Off	Full	Off	Off	10
Off	Off	Off	Off	10

Motion Detection				
Moti.	Sens.	Sound	Pre	Post
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

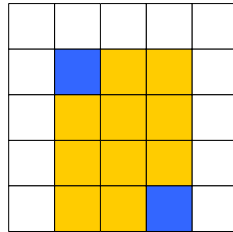
Event				
Moti.	Off	Partial	Full	Post
Off	Off	Off	Off	10
Off	Partial	Off	Off	10
Off	Full	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

- On the selection box, select **[Partial]** using the **arrow (▲▼)** and **[Select]** buttons.

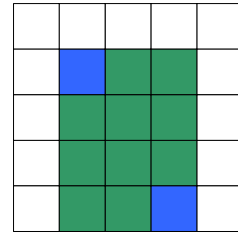
Shift to a starting square of motion detection zone and double-click it.



Select the size of motion zone and click it.

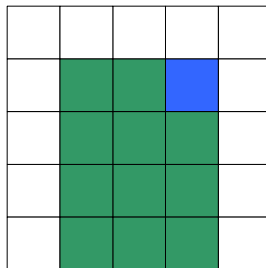


Once motion detection zone is fixed, double-click it.

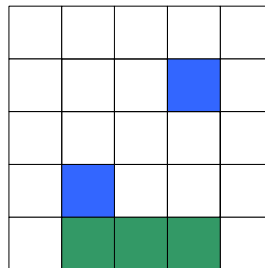


- Select the area where Motion is detected using the **arrow (▲▼)** and **[Select]** buttons.
- **The user can cancel the selected areas.**

Put blue focus on motion detection zone and double-click it.



Set up a portion of motion zone to delete and click it.



- Select the zone and press the **[ESC]** button.

Selecting the zone

- 1) To view the zone set in yellow, press the **[Select]** button.
- 2) Set the zone using the **arrow** buttons and press the **[Select]** button.
- 3) Once set, the **zone** is displayed in green.

■ OFF

Disables the detection of motion in the video

■ Setting the motion detection sensitivity

- On the {Data Setup} -> {Data 1-4} -> {Event} -> {Motion} menu, select the desired channel using the arrow (▲▼◀▶) buttons and press the [Main Setup] button or right-click.

Event				
Moti.	Sens.	Sound	Pre	Post
Off			Off	10
Off		Motion		10
Off	Sensitivity: M			10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

Event					Alarm		
Moti.	Sens.	Sound	Pre	Post	Buz.	Call	Mail
Off			Off	10	Off	Off	Off
Off		Motion		10	Off	Off	Off
Off	Sensitivity: M						
Off	Off	Off	Off		Very Low		Off
Off	Off	Off	Off		Low		Off
Off	Off	Off	Off		Medium		Off
Off	Off	Off	Off		High		Off
Off	Off	Off	Off		Very High		Off
Off	Off	Off	Off	10	Off	Off	Off

To set the motion detection sensitivity for all channels at the same time, select {Moti.} and press the [Main Setup] button.

Motion Detection				
Moti.	Sens.	Sound	Pre	Post
Off			Off	10
Off		Motion		10
Off	Sensitivity: M			10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

Motion Detection					Alarm		
Moti.	Sens.	Sound	Pre	Post	Buz.	Call	Mail
Off			Off	10	Off	Off	Off
Off		Motion					
Off	Sensitivity: M						
Off	Off	Off	Off		Very Low		Off
Off	Off	Off	Off		Low		Off
Off	Off	Off	Off		Medium		Off
Off	Off	Off	Off		High		Off
Off	Off	Off	Off		Very High		Off
Off	Off	Off	Off	10	Off	Off	Off

- On the selection box, set the sensitivity using the arrow (▲▼) and [Select] buttons.

Motion sensitivity

Motion sensitivity levels include Lowest, Low, Medium, High, and Highest; the levels are decided based on the proportion of pixels with motion detected to the entire block. The higher the grade, the more accurate the detection of motion is.

B) Sensor

The operator can set the system to detect input from an external sensor connected to the system and monitor up to 16 external sensors through the system. Once it detects input signals in the sensor, the system records the video of the corresponding channel.

■ Sensor setting

- On the {Data Setup} -> {Data 1-4} -> {Event} -> {Sound} menu, select the desired channel using the arrow (▲▼◀▶) buttons and press the [Select] button.

Event				
Moti.	Sens.	Sound	Pre	Post
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

Event				
Moti.	Sens.	Sound	Pre	Post
Off	Off	Off	Off	10
Off	Off	1		10
Off	Off	2		10
Off	Off	3		10
Off	Off	4		10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

To set all channels at the same time, select **{Sound}** and press the **[Select]** button.

Sensor Detection					
Moti.	Sens.	Sound	Pre	Post	
Off	Off	Off	Off	10	
Off	Off	Off	Off	10	
Off	Off	Off	Off	10	
Off	Off	Off	Off	10	
Off	Off	Off	Off	10	
Off	Off	Off	Off	10	

Event					
Moti.	Sens.	Off	▲	▼	Post
Off	Off	1			10
Off	Off	2			10
Off	Off	3			10
Off	Off	4			10
Off	Off	Off	Off		10
Off	Off	Off	Off		10
Off	Off	Off	Off		10

- On the selection box, set the input port number on the external sensor box using the **arrow (▲▼)** and **[Select]** buttons.

■ Sensor type setting

- On the **{Data Setup}** -> **{Data 1-4}** -> **{Event}** -> **{Sensor}** menu, select the desired channel and press the **[Main Setup]** button.

Event						
Moti.	Sens.	Sound	Pre	Post	Buz.	
Off	1	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff

Event						
Moti.	Sens.	Sound	Pre	Post	Buz.	Call
Off	1	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff

Sensor Detection						
Moti.	Sens.	Sound	Pre	Post	Buz.	
Off	1	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff

Sensor Detection						
Moti.	Sens.	Sound	Pre	Post	Buz.	Call
Off	1	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff
Off	Off	Off	Off	10	ff	ff

- On the selection box, set the sensor type using the **arrow (▲▼)** and **[Select]** buttons.

Normal Close (NC): Opens in case of incoming signal when closed normally

Normal Open (NO): Closes in case of incoming signal when opened normally

C) Sound

Defines the settings for detecting audio input from an external device compatible with the system. The user can set the audio input for two external devices compatible with the system. Once audio input is detected, the video of the corresponding channel is recorded. Each channel can detect audio from up to two devices.

- On the **{Data Setup}** -> **{Data 1-4}** -> **{Event}** -> **{Sound}** menu, select the desired channel using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.

Event				
Moti.	Sens.	Sound	Pre	Post
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

Event				
Moti.	Sens.	Sound	Pre	Post
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

To set all channels at the same time, select **{Sound}** and press the **[Select]** button.

Event					
Moti.	Sens.	Sound	Pre	Post	Buz.
Off	Off	Off	Off	10	Off
Off	Off	Off	Off	10	Off
Off	Off	Off	Off	10	Off
Off	Off	Off	Off	10	Off
Off	Off	Off	Off	10	Off
Off	Off	Off	Off	10	Off

Event				
Moti.	Sens.	Sound	Off	t
Off	Off	Off	1	
Off	Off	Off	2	
Off	Off	Off	3	
Off	Off	Off	4	
Off	Off	Off	Off	10
Off	Off	Off	Off	10

- On the selection box, select the audio channel using the **arrow(▲▼)** and **[Select]** buttons.

To adjust the audio sensitivity of each channel, select **{Sound}** and press the **[Main Setup]** button.

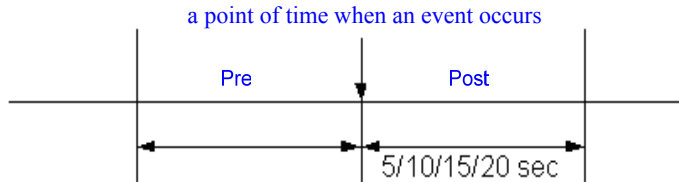
Event				
Moti.	Sens.	Sound	Pre	Post
Off	Off	Multi	Off	10
Off	Off	Off	1	
Off	Off	Off	2	
Off	Off	Off	3	
Off	Off	Off	4	
Off	Off	Off	Off	10
Off	Off	Off	Off	10

Event						Alarm Out			
Moti.	Sens.	Sound	Sensitivity	Call	Mail	Spot	Relay		
Off	Off	Multi	Sound01: M	ff	ff	ff	ff		
Off	Off	Off	Sound02: M	Very Low					
Off	Off	Off	Sound03: M	Low					
Off	Off	Off	Sound04: M	Medium					
Off	Off	Off		High					
Off	Off	Off	Off	Very High					
Off	Off	Off	Off	10	ff	ff	ff	ff	ff
Off	Off	Off	Off	10	ff	ff	ff	ff	ff
Off	Off	Off	Off	10	ff	ff	ff	ff	ff

- On the selection box, select the audio channel using the **arrow(▲▼)** and **[Select]** buttons.

D) Pre & Post

This is used to set the duration for recording the video upon the occurrence of an event. The unit is in seconds. After the duration is set, video is recorded for the defined duration upon the occurrence of an event.



- On the **{Data Setup}** -> **{Data 1~4}** -> **{Event}** -> **{Post}** menu, select the desired channel using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.

Event				
Moti.	Sens.	Sound	Pre	Post
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10
Off	Off	Off	Off	10

Event					Al	
Moti.	Sens.	Sound	Pre	Post	Buz.	Call
Off	Off	Off	Off	10	Off	Off
Off	Off	Off	Off	10	5	Off
Off	Off	Off	Off	10	10	Off
Off	Off	Off	Off	10	15	Off
Off	Off	Off	Off	10	20	Off
Off	Off	Off	Off	10	Off	Off
Off	Off	Off	Off	10	Off	Off

To set all channels at the same time, select **{Post}** and press the **[Select]** button.

Event				Post			
Moti.	Sens.	Sound	Pre	Post	Buz.	Call	Mail
Off	Off	Off	Off	10	Off	Off	Off
Off	Off	Off	Off	10	Off	Off	Off
Off	Off	Off	Off	10	Off	Off	Off
Off	Off	Off	Off	10	Off	Off	Off
Off	Off	Off	Off	10	Off	Off	Off
Off	Off	Off	Off	10	Off	Off	Off
Off	Off	Off	Off	10	Off	Off	Off

Event					Al	
Moti.	Sens.	Sound	Pre	Post	5	10
Off	Off	Off	Off	10	Off	Off
Off	Off	Off	Off	10	10	Off
Off	Off	Off	Off	10	15	Off
Off	Off	Off	Off	10	20	Off
Off	Off	Off	Off	10	Off	Off
Off	Off	Off	Off	10	Off	Off
Off	Off	Off	Off	10	Off	Off

- On the selection box, set the time using the **arrow (▲▼)** and **[Select]** buttons.

(8) Alarm generation

Used to generate alarms through the buzzer, mail, or relay in case of an event

A) Buzzer

Used to sound the buzzer in the system in case of an event

- On the **{Data Setup}** -> **{Data 1~4}** -> **{Generate Alarm}** -> **{Buzzer}** menu, select the desired channel using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.

Alarm Out				
Buz.	Call	Mail	Spot	Relay
Off	Off	Off	Off	On
Off	Off	Off	Off	Off
Off	Off	Off	Off	Off
Off	Off	Off	Off	Off
Off	Off	Off	Off	Off

Event					
Moti.	Sens.	Sound	Pre	Post	Buz.
Off	Off	Off	Off	10	Off
Off	Off	Off	Off	10	Off
Off	Off	Off	Off	10	Off
Off	Off	Off	Off	10	Off
Off	Off	Off	Off	10	Off

To set all channels at the same time, select **{Buzzer}** and press the **[Select]** button.

	Buzzer			
Post	Buz.	Call	Mail	Spot
10	Off	Off	Off	Off
10	Off	Off	Off	Off
10	Off	Off	Off	Off
10	Off	Off	Off	Off

Event						
Moti.	Sens.	Sound	Pre	Post	Buz.	
Off	Off	Off	10	Off	Off	Off
Off	Off	Motion	:Off			Off
On	Off	Sensor	:Off			Off
Off	Off	Sound	:Off			Off
Off	Off	Off	Off	10	Off	Off

- On the selection box, set the event type and turn it ON or OFF using the **arrow (▲▼)** and **[Select]** buttons.

B) Mail

Used to send email to a predefined address in case of an alarm or an event

- On the **{Data Setup}** -> **{Data 1-4}** -> **{Generate Alarm}** -> **{Mail}** menu, select the desired channel using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.

Alarm Out						
Pre	Post	Buz.	Call	Mail	Spot	
Off	10	Off	Off	Off	Off	Off
		Motion	:Off	Off	Off	Off
		Sensor	:Off	Off	Off	Off
		Sound	:Off	Off	Off	Off
Off	10	Off	Off	Off	Off	Off

Event				Alarm Out			
Sens.	Sound	Pre	Post	Buz.	Call	Mail	Spot
Off	Off	10	Off	Off	Off	Off	Off
Off	Off	Motion	:Off	Off	Off	Off	Off
Off	On	Sensor	:Off	Off	Off	Off	Off
Off	Off	Sound	:Off	Off	Off	Off	Off
Off	Off	Off	10	Off	Off	Off	Off

To set all channels at the same time, select **{Mail}** and press the **[Select]** button.

E-Mail					
Pre	Post	Buz.	Call	Mail	Spot
Off	10	Off	Off	Off	Off
Off	10	Off	Off	Off	Off
Off	10	Off	Off	Off	Off
Off	10	Off	Off	Off	Off

Event			Alarm Out				
Sens.	Sound	Pre	Post	Buz.	Call	Mail	Spot
Off	Off	10	Off	Off	Off	Off	Off
Off	Off	Motion	:Off	Off	Off	Off	Off
Off	On	Sensor	:Off	Off	Off	Off	Off
Off	Off	Sound	:Off	Off	Off	Off	Off
Off	Off	Off	10	Off	Off	Off	Off

- On the selection box, set the event type and turn it ON or OFF using the **arrow (▲▼)** and **[Select]** buttons.

C) Spot

Displays the video on the CCTV monitor connected to the spot port in case of an alarm or an event

- On the **{Data Setup}** -> **{Data 1~4}** -> **{Generate Alarm}** -> **{Spot}** menu, select the desired channel using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.

Alarm Out					
Post	Buz.	Call	Mail	Spot	Relay
10	Off	Off	Off	Off	Off
				Motion :Off	Off
				Sensor :Off	Off
				Sound :Off	Off

Alarm Out					
Pre	Post	Buz.	Call	Mail	Spot
10	Off	Off	Off	Off	Off
					Motion :Off
					Sensor :Off
					Sound :Off

To set all channels at the same time, select **{Spot}** and press the **[Select]** button.

Spot Out				
Buz.	Call	Mail	Spot	Relay
Off	Off	Off	Off	Off
Off	Off	Off	Off	Off
Off	Off	Off	Off	Off
Off	Off	Off	Off	Off

Alarm Out					
Pre	Motion			Spot	Relay
10	Off	Off	Off	Off	Off
10	Off	Off	Off	Off	Off

- On the selection box, set the event type and turn it ON or OFF using the **arrow (▲▼)** buttons and **[Select]** button.

D) Relay

Runs the alarm device connected to the DIO board in case of an alarm or an event

■ Relay setting

- On the **{Data Setup}** -> **{Data 1~4}** -> **{Generate Alarm}** -> **{Relay}** menu, select the desired channel using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.

Alarm Out					
Buz.	Call	Mail	Spot	Relay	
Off	Off	Off	Off	Off	Off
				Motion :Off	Off
				Sensor :Off	Off
				Sound :Off	Off

Alarm Out						
Pre	Post	Buz.	Call	Mail	Spot	Relay
Off	10	Off	Off	Off	Off	Off
					Motion :Off	Off
					Sensor :Off	Off
					Sound :Off	Off
					1	Off
					2	Off
					3	Off
					4	Off

To set all channels at the same time, select **{Relay}** and press the **[Select]** button.

Alarm Out				
B	Motion	:Off		Relay
C	Sensor	:Off		Off
C	Sound	:Off		Off
	Off	Off	Off	Off
	Off	Off	Off	Off
	Off	Off	Off	Off

Alarm Out				
Pre	Post	Buz.	Call	Mail
Off	10	Off	Off	Off
				Relay
				Off
				Off
		Off	Off	Off
		Off	Off	Off
		Off	Off	Off
	10	Off	Off	Off

- On the selection box, set the event type and turn it ON or OFF using the **arrow (▲▼)** and **[Select]** buttons.

■ Relay Type setting

- On the **{Data Setup}** -> **{Data 1-4}** -> **{Generate Alarm}** -> **{Relay}** menu, select the desired channel using the arrow (**▲▼◀▶**) buttons and press the **[Main Setup]** button.

Alarm Out				
Buz.	Call	Mail	Spot	Relay
Off	Off	Off	Off	On
				Relay Type
				Off
				Relay01: NO
				Off
				Relay02: NO
				Off
				Relay03: NO
				Off
				Relay04: NO
				Off

Alarm Out						
Pre	Post	Buz.	Call	Mail	Spot	Relay
Off	10	Off	Off	Off	Off	On
						Relay Type
						Off
						Relay01: NO
						Off
						Relay02: NO
						Off
						Relay03: NO
						Off
						Relay04: NO
						Off

To set all channels at the same time, select **{Relay}** and press the **Select** button.

Alarm Out				
Buz.	Call	Mail	Spot	Relay
				Relay Type
				On
				Relay01: NO
				Off
				Relay02: NO
				Off
				Relay03: NO
				Off
				Relay04: NO
				Off

Alarm Out						
Pre	Post	Buz.	Call	Mail	Spot	Relay
Off	10	Off	Off	Off	Off	On
						Relay Type
						On
						Relay01: NO
						Off
						Relay02: NO
						Off
						Relay03: NO
						Off
						Relay04: NO
						Off

- On the selection box, set the server type using the **arrow(▲▼)** and **[Select]** buttons.

5-6-3 Recording Schedule

In **{Main Setup}** mode, select **{Recording Schedule}** and press the **[Select]** button.



To apply the new setting, save the new setting.

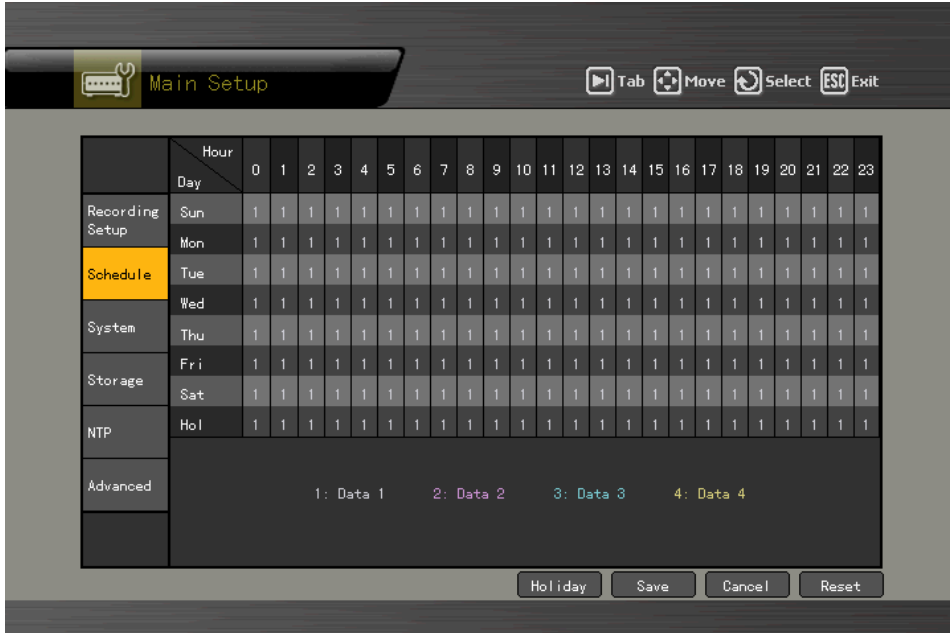
- **[Holiday]** - Sets the holidays
- **[Save]** Saves the settings



- **[Cancel]**
Exits without saving the settings
- **[Reset]** –Deletes the previous settings and resets the setup

(1) Selecting the Recording Schedule menu

- In **{Main Setup}** mode, select **{Recording Schedule}** and press the **[Select]** button.



(2) Setting the recording schedule

A) Setting by row

- On the **{Recording Schedule}** menu, select the date and time using the arrow (**▲▼◀▶**) or numeric buttons on the remote control.

Input numbers that are less than ten in two digits using the numeric buttons, e.g., 01 for 1 and 02 for 2. At this time, the time line is highlighted.

	Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Recording Setup	Day																								
	Sun	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Mon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Schedule	Tue	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Wed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
System	Thu	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

- Select the time to set the data.
 - a) To set the selected time only, press the **[Main Setup]** button or right-click the corresponding item on the menu.
 - b) To set all rows after the selected time, click the **[Select]** button or right-click the

corresponding item on the menu.

- On the selection box, select the data using the **arrow (▲▼)** buttons and press the **[Select]** button.

		Hour																							
Day		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Recording Setup	Sun	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Mon	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Schedule	Tue	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Wed	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
System	Thu	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

- Data is set based on the buttons pressed during the time selection.
 - Clicking the **[Main Setup]** button causes the data to be set only for the selected time.

		Hour																							
Day		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Recording Setup	Sun	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Mon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Schedule	Tue	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Wed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

- Clicking the **[Select]** button causes the data to be set for all the times after the selected time.

		Hour																							
Day		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Recording Setup	Sun	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Mon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Schedule	Tue	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Wed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
System	Thu	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

B) Setting by column

- Select the time using the **arrow (▲▼◀▶)** or numeric buttons on the remote control. Input numbers that are less than ten in two digits using the numeric buttons, e.g., 01 for 1 and 02 for 2.

	Day \ Hour	Hour																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Recording Setup	Sun	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Mon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Schedule	Tue	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Wed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
System	Thu	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

- Select the time to set the data.
 - a) To set only one column of the selected time, select the **[Main Setup]** button or right-click the corresponding item on the menu.
 - b) To set all rows and columns after the selected time at the same time, press the **[Select]** button or double-click the corresponding button on the menu.
- On the selection box, select the data using the **arrow (▲▼)** buttons and press the **[Select]** button.

	Day \ Hour	Hour																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Recording Setup	Sun	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Mon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Schedule	Tue	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Wed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
System	Thu	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

- Data is set based on the buttons pressed during the time selection.
 - a) Pressing the **[Main Setup]** button causes the data to be set only for the column with the selected time.

	Day \ Hour	Hour																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Recording Setup	Sun	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Mon	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Schedule	Tue	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Wed	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
System	Thu	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

- b) Pressing the **[Select]** button causes
 - The data to be set for all rows and columns after the selected time.

	Hour																								
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Recording Setup	Sun	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Mon	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Schedule	Tue	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	Wed	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
System	Thu	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	

C) Holiday setting

Enables setting holidays

If the holiday and the date are the same on the **{Recording Schedule}** menu, the holiday setting precedes the date setting.

Calendar

- The selected holidays are marked with a red tag.

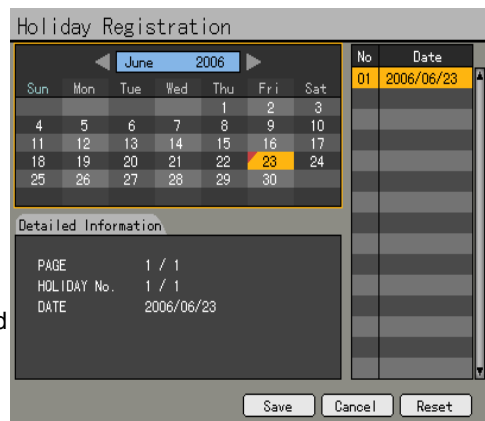
Holiday list

- The list of all defined holidays is displayed.
- 15 holidays are displayed on each page.

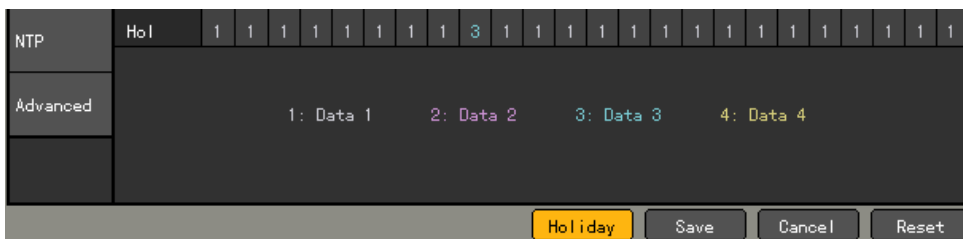
Holiday information

- **{Page}** displays the list of holidays.
- **{Holiday No}** denotes the holiday number based on the date.

{Date} shows the date of the holiday.



- On the **{Recording Schedule}** menu, select **{Holiday}** at the bottom using the **[Tab]** and **arrow** buttons and press the **[Select]** button.



- On the **{Add Holiday}** window, select the date using the **arrow(▲▼◀▶)** and **[Select]** buttons and press the **[Select]** button.
- After setting the holiday, press the **[ESC]** button followed by the **[Save]** button at the bottom of the menu. Afterward, press the **[Select]** button.
 - [Save]** – Saves the defined holidays
 - [Cancel]** - Exits without saving the settings
 - [Reset]** – Deletes the previous settings and resets the setup



5-6-4 System

Use the **{System}** menu to set up the system and define its auxiliary features.

1. {Local administrator password}	Used to set the password of the local administrator
2. {Menu Time Out}	Used to set the time to exit the System Setup menu automatically and to go to the real-time monitoring screen
3. {Modem baud rate}	Sets the modem transmission rate
4. {DVR name}	Used to name the DVR
5. {Remote ID}	Used to name the remote control to run the system
6. {Date display type}	Used to set the date format
7. {Users}	Used to register, add, or delete users
8. {Buzzer}	Turns the alarm sound feature ON/OFF
9. {Alarm Duration}	Sets the alarm generation time (in seconds)
10. {Firmware Upgrade}	Upgrades the system firmware
11. {Factory Setup}	Used to reset the system

(1) Selecting the System menu

- On the {Main Setup} menu, select {System} and press the [Select] button.

The screenshot shows a 'Main Setup' interface with a dark background and yellow text. At the top left is a 'Main Setup' title bar with a key icon. At the top right are navigation buttons: 'Tab', 'Move', 'Select', and 'ESC Exit'. The main area is a table with 12 rows of settings. The 'System' row is highlighted in yellow. At the bottom are 'Save', 'Cancel', and 'Reset' buttons.

Recording Setup	1. Local Admin. Password	*****	
	2. Menu Time Out	Off	
	3. Modem Baud Rate	115200	
Schedule	4. DVR Name	DVR	
	5. Remote ID	1	
System	6. Date Display Type	Year/Mon/Day	
Storage	7. Users	Modify	Add Delete
	8. Buzzer	Off	
	9. Alarm Duration	Default	
NTP	10. Firmware Upgrade	Ext. Device	CD-R/CD-RW Local HDD
	11. Audio Board Type	None	
Advanced	12. Factory Setup	Reset	

(2) Local administrator password

Local admin

- The local system administrator's default password is "00000."
- The local administrator can use all features including System Setup, System Power ON/OFF, Monitoring, and Viewing Recorded Video. Remote access is not supported, however. Recorded Video.


- On the **{System}** menu, select **{1. Local Administrator Password}** using the **arrow (▲▼)** buttons and press the **[Select]** button.



- On the password input field, enter the password using the numeric buttons on the remote control or the **arrow (▲▼◀▶)** and **[Select]** buttons.
The password may contain up to five digits.



BS	Backspace
Cancel	Used to cancel
Save and exit	Used to save and exit

- After inputting the data, select **[Save and Exit]** using the [Tab] button  or arrow (▲▼) buttons and press the **[Select]** button.

(3) Menu Time Out

If no input is made on the System Setup menu using the front buttons, remote control, or mouse, the system automatically shifts to real-time monitoring mode.


- On the **{System}** menu, go to **{2. Menu Time Out }** using the **arrow (▲▼)** buttons and press the **[Select]** button.



- On the selection box, select the time to be set using the **arrow (▲▼)** and **[Select]** buttons.

2. Menu Time Out	Off	Off	
3. Modem Baud Rate	115200	10 SEC	
4. DVR Name	DVR	20 SEC	
5. Remote ID	1	30 SEC	
6. Date Display Type	Year/Mon/Day	Custom	
7. Users	Modify		Delete


OFF	Menu Time Out is not used. The user can exit the menu by pressing the [ESC] button on the System menu.
10/20/30 seconds	If no input is made using the remote control or mouse, the screen automatically shifts to real-time monitoring mode.
User setting	This enables inputting the time directly (between 5 and 99 seconds).

- Selecting the user setting causes the time input window to appear as shown below.
- Enter the time using the **arrow (▲▼◀▶)** buttons and **[Select]** buttons or the numeric buttons on the remote control.
- After inputting the data, select **[Save and Exit]** using the **[Tab]**  or **arrow (▲▼)** buttons and press the **[Select]** button.

(4) DVR Name

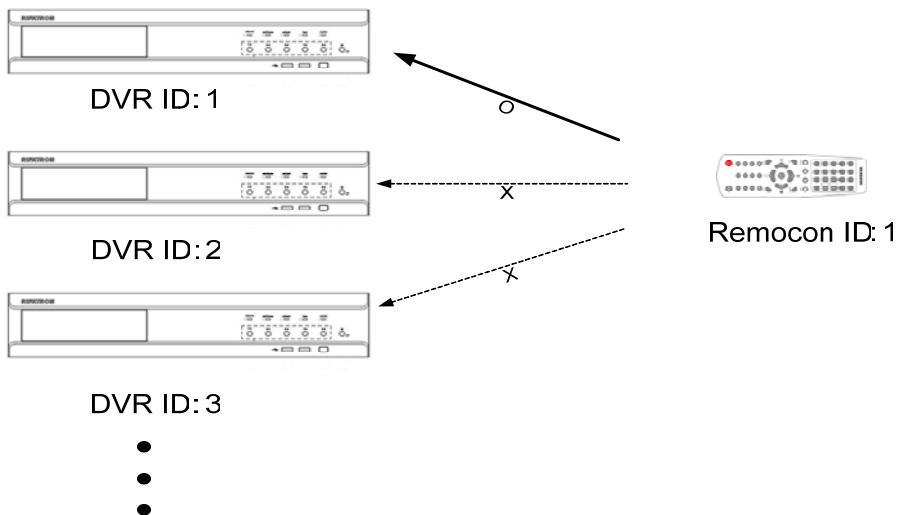
- On the **{System}** menu, select **{3. DVR Name}** using the **arrow (▲▼)** buttons and press the **[Select]** button.

4. DVR Name	DVR
-------------	-----

- On the password input window, enter the password using the numeric buttons on the remote control or the **arrow (▲▼◀▶)** and **[Select]** buttons.
The password may contain up to **23** digits.
- After inputting the data, select **[Save and Exit]** using the **[Tab]**  or **arrow (▲▼)** buttons and press the **[Select]** button.

(5) Remote control ID

Sets the remote control ID when multiple devices are used




- On the **{System}** menu, go to the remote control ID selection box using the **arrow (▲▼)** buttons and press the **[Select]** button.



- On the ID input window, enter the ID using the numeric buttons on the remote control or the **arrow (▲▼◀▶)** and **[Select]** buttons.

▪The ID may be between 0 and 99.

- After inputting the data, select **[Save and Exit]** using the **[Tab]**  or **arrow (▲▼)** buttons and press the **[Select]** button.

- After setting the remote control ID of the DVR, apply the new setting.



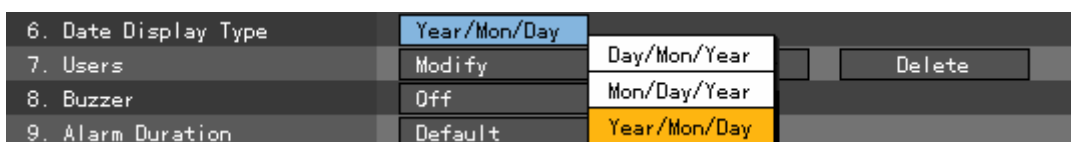
Select the ID button and enter the two-digit remote control ID. Afterward, select the ID button again.



To control all DVRs with different IDs, set the remote control ID as 999.

(6) Date Display Type

- On the **{System}** menu, select **{5. Date Display Type}** using the **arrow (▲▼)** buttons and press the **[Select]** button.



- On the selection box, select the date display format using the **arrow (▲▼)** and **[Select]** buttons.

(7) User

Used to add, edit, or delete system users

■ System authority

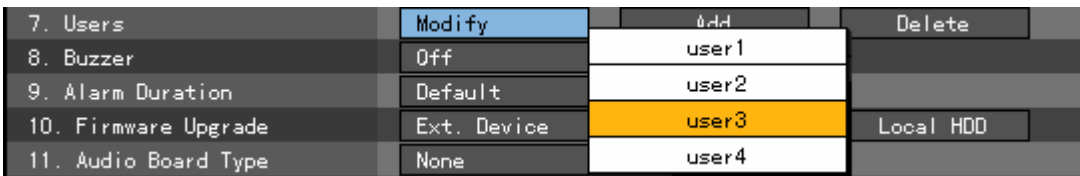
Network live	Viewing screen in real time
Network play	Viewing recorded screen
Download network file	Network access, File download
Main setup	Data, Schedule, System setup
Additional setup	PTZ camera, Network setup
Network PTZ control	PTZ camera control
Network backup	Backup feature
Remote upgrade	Remote upgrade

A) Users

- On the **{System}** menu, select **{6. Users}** -> **{Edit}** using the **arrow (▲▼)** buttons and press the **[Select]** button.



- On the selection box, select the user to be deleted using the **arrow (▲▼)** buttons and **[Select]** buttons.



- On the user authority setting window, set the user authorities using the **arrow (▲▼)** buttons and **[Select]** buttons.

A screenshot of the user authority setting window for 'user3'. The 'PASSWORD' field contains '3333333'. The following features are listed with checkboxes:

- Network Live
- Network Playback
- Network File Download
- Main/App Setup
- Network PTZ Control
- Network Backup
- Remote Upgrade

 At the bottom, there are 'Modify' and 'Cancel' buttons.

<input checked="" type="checkbox"/>	Gives the user the authority to use the feature
<input type="checkbox"/>	Prohibits the user from using the feature

- After inputting the data, select **[Edit]** followed by the **[Select]** button using the **[Tab]** or **arrow (▲▼)** buttons.

B) Adding a user

The user ID and password may contain up to 30 alphanumeric characters.

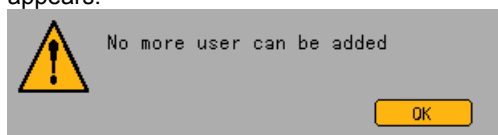
- On the **{System}** menu, select **{6. Users}->{Add}** using the **arrow (▲▼)** buttons and press the **[Select]** button.




- On the user registration window, go to the ID input field and press the **[Select]** button.

<input checked="" type="checkbox"/>	Gives the user the authority to use the feature
<input type="checkbox"/>	Prohibits the user from using the feature

Up to four users can be registered. After four users are registered, the following message appears:




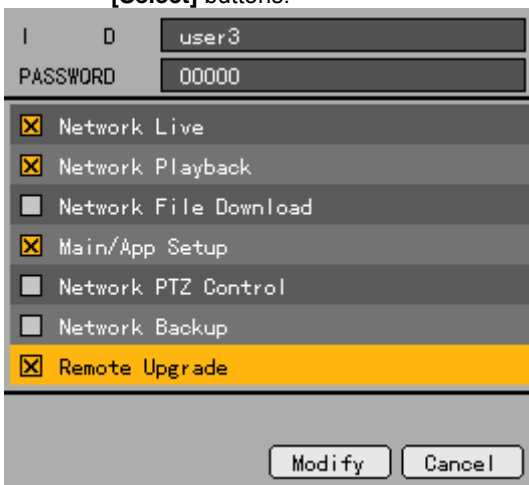
- ◀ Press the **[Select]** button to go back to the previous menu.

- On the ID input field, enter the ID using the numeric buttons on the remote control or the **arrow (▲▼◀▶)** and **[Select]** buttons.
- After inputting the data, select **[Save and Exit]** using the **[Tab]**  or **arrow (▲▼)** buttons and press the **[Select]** button.
- After setting the user ID, go to the password input field using the **arrow (▲▼)** buttons and press the **[Select]** button.




<input checked="" type="checkbox"/>	Gives the user the authority to use the feature
<input type="checkbox"/>	Prohibits the user from using the feature

- On the password input window, enter the password using the numeric buttons on the remote control or the **arrow (▲▼◀▶)** and **[Select]** buttons.
The password may contain up to **30** digits.
- After inputting the data, select **[Save and Exit]** using the **[Tab]**  or **arrow (▲▼)** buttons and press the **[Select]** button.
- After setting the user ID and password, set the user authorities using the **arrow (▲▼)** and **[Select]** buttons.



<input checked="" type="checkbox"/>	Gives the user the authority to use the feature
<input type="checkbox"/>	Prohibits the user from using the feature

- After inputting the data, select **[Save and Exit]** using the **[Tab]**  or **arrow (▲▼)** buttons and press the **[Select]** button.

C) Deleting a user

- On the **{System}** menu, select **{6. Users}** -> **{Delete}** using the **arrow (▲▼)** buttons and press the **[Select]** button.

7. Users	Modify	Add	Delete
----------	--------	-----	--------

- On the selection box, select the user to be deleted using the **arrow (▲▼)** and **[Select]** buttons.

7. Users	Modify	Add	Delete
8. Buzzer	Off	user 1	
9. Alarm Duration	Default	user 2	
10. Firmware Upgrade	Ext. Device	user 3	Local HDD
11. Audio Board Type	None	user 4	

(8) Buzzer

- On the **{System}** menu, select **{7. Buzzer}** using the **arrow (▲▼)** buttons and press the **[Select]** button.
- On the selection box, select ON or OFF using the **arrow (▲▼)** buttons or **[Select]** button.

8. Buzzer	Off		
9. Alarm Duration	Default	Off	
10. Firmware Upgrade	Ext. Device	On	-R/CD-RW Local HDD

Use the Buzzer menu to run the buzzer inside the system in case of HDD Failure, Backup Failure, Network Failure, Fan Failure, Power Failure, or Signal Loss.

(9) Alarm Duration

Sets the alarm generation time

- On the **{System}** menu, select **{8. Alarm Duration}** using the **arrow (▲▼)** buttons and press the **[Select]** button.

9. Alarm Duration	Default
-------------------	---------


- On the selection box, set the alarm generation time using the **arrow (▲▼)** and **[Select]** buttons.

9. Alarm Duration	Default	Default	
10. Firmware Upgrade	Ext. Device	5	Local HDD
11. Audio Board Type	None	10	
12. Factory Setup	Reset	15	
		Custom	

(10) Firmware Upgrade

Workhorse 120-8 supports external storage. It can also be upgraded easily.

- Find the upgrade file and copy it to the highest folder in the external storage device or portable storage device.



- 1) When copying an upgrade file from the PC, connect the USB device to the PC first.
- 2) If the USB device is disconnected from the port while the upgrade file is being copied, the DVR system may not automatically recognize the file.
- 3) Upgrading cannot proceed if no HDD is installed.

- Connect the storage device containing an upgrade file to the USB port.
- On the **{System}** menu select **{9. Firmware Upgrade}** using the **arrow (▲▼)** buttons.

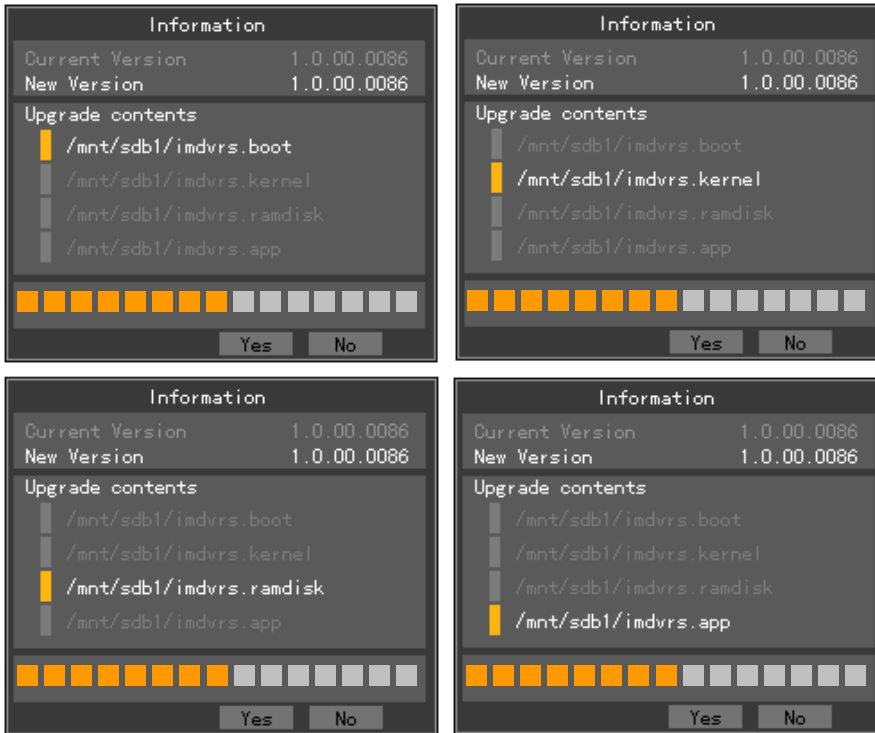


- Press the **[Select]** button.

The upgrade information window then appears within 15 seconds is shown below:

The screenshot shows the 'Main Setup' interface. The 'System' menu item is selected. A dialog box titled 'Information' is displayed over the '10. Firmware Upgrade' option. The dialog shows the current and new versions (both 1.0.00.0086) and lists the upgrade contents: /mnt/sdb1/imdvr.boot, /mnt/sdb1/imdvr.kernel, /mnt/sdb1/imdvr.ramdisk, and /mnt/sdb1/imdvr.app. At the bottom of the dialog, it asks 'System reboot start' with 'Yes' and 'No' buttons. The 'Yes' button is highlighted in yellow. The background menu shows various settings like Recording Setup, Schedule, Storage, NTP, and Advanced.

- After checking the information, select the **[Yes]** button. Upgrading then proceeds in the following order (selecting the **[No]** button causes the system to shift to **{System}** mode):



Once it starts, upgrading cannot be canceled.

- After updating is completed, the system restarts.
- Select **{Status}** -> **{Product Information}** -> **{3. Software Version}**.

(11) Saving the system configuration

After changing the system configuration on the **{System}** menu, save the new configuration before exiting the menu.

- After completing the system configuration, select **[Save]** using the **[Tab]** button and press the **[Select]** button.

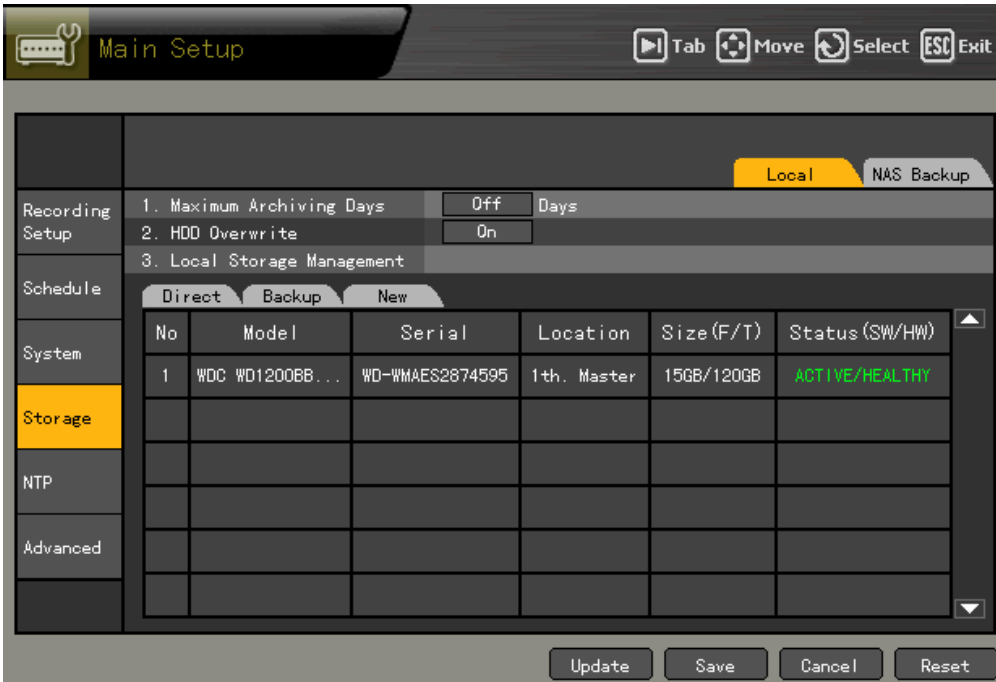
- **[Save]**
Saves the setting
- **[Cancel]**
Exits without saving the setting
- **[Reset]** –Deletes the previous settings and resets the setup



5-6-5 Storage

(1) Selecting the Storage menu

- Select **{Main Setup}** and **{Storage}**.



A) Local

(1) Selecting the Local menu

- On the **{Storage}** menu, select **{Storage}** -> **{Local}** using the arrow (◀▶) buttons.



To apply the new setting defined on the **[Storage]** menu, save the new setting.

[Update]

Used to read local storage device management information again

[Save]

Saves the settings

[Cancel]

Exits without saving the settings

[Reset]

Resets the settings



(2) Maximum Archiving days

Limits the recording days

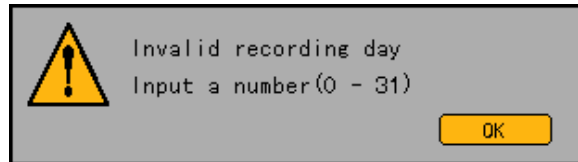
- On the **{Storage}** menu, select **{1. Maximum Archiving Days}** using the arrow (▲▼) buttons and press the **[Select]** button.



- On the input window, enter the recording date using the numeric buttons on the remote control

or the **arrow (▲▼◀▶)** buttons and **[Select]** buttons.

- The user can input any number between 1 and 31 to indicate the number of days. Entering a number higher than 31 causes the following message to appear:



(3) HDD overwrite

Used to enable/disable HDD overwrite

- On the **{Storage}** menu, select **{2. HDD Overwrite}** using the **arrow (▲▼)** buttons and press the **[Select]** button.



- On the selection box, select ON or OFF using the **arrow (▲▼)** or **[Select]** buttons.



- | | |
|------------|--|
| ON | In case of insufficient hard drive space, files starting from the oldest ones are overwritten. |
| OFF | Once the hard drive space is used up, recording stops. |

(4) Management and configuration of the local storage device

- **{Model}**: Storage device model
- **{Serial}**: Serial number of the storage device
- **{Location}**: Physical location of the storage device
- **{Capacity (T/F)}**: Capacity of the storage device (T: Total; F: Free)
- **{Status (SW/HW)}**: Status of the storage device (SW: Software; HW: Hardware)

Three software status types

- Active: Connected to the DVR; the storage device is currently recording
- Online: Connected to the DVR, but the storage device is not recording
- Offline: Not connected to the DVR

Three hardware status types

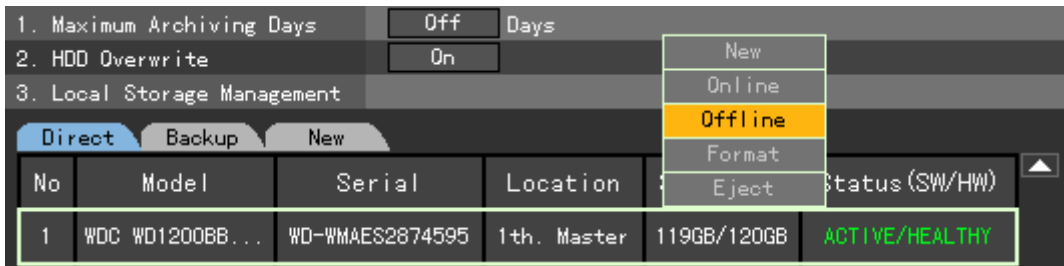
- Healthy: Connected to the DVR; the storage device is recording normally
- Warning: Connected to the DVR, but an error has occurred; in this state, recording may fail
- Fault: The DVR is in fault state, i.e., the storage device cannot operate



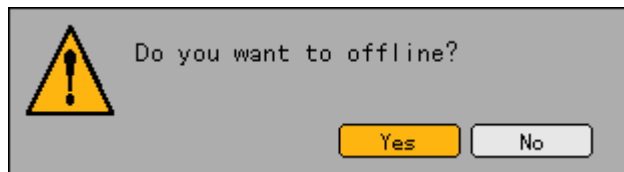
1. The storage device is damaged and unable to function properly.
2. The storage device has a physical error that can be corrected by the storage device or DVR. Failure to repair the error may damage the storage device (and cause it to shift to fault state). In this case, backing up the data in the corresponding storage device and replacing the device with a normal one is strongly recommended.
3. In case of a warning or a fault in the active storage, an alarm message is displayed on the upper left corner. After the user views the messages in **{Log}** mode, the alarm message is deleted.

(5) Operation of the local storage

- On the **{Storage}** menu, go to the **{Local}** tab using the **arrow (◀▶)** buttons and press **[Select]**.
- The user can select any valid storage device using the **arrow (▲▼)** buttons.
- Select a storage device using the **[Select]** button. A popup menu is then displayed as shown below:



- Select and execute the corresponding menu using the **arrow (▲▼)** and **[Select]** buttons.
- The system confirms the execution of every command as shown below:



- Click **[OK]** to execute the corresponding command.

B) NAS backup

(1) Selecting the NAS Backup menu

- Go to the **{Main Setup}** ->**{Storage Device}** -> **{NAS Backup}** menu.



(2) Using NAS

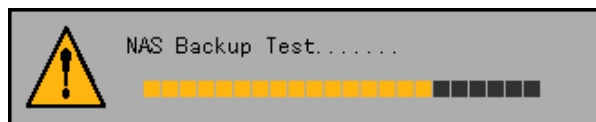
- On the **{Storage Device}** menu, select **{NAS Backup}** -> **{1. Overwrite}** using the **arrow (▲▼)** buttons and press the **[Select]** button.




- On the selection box, select ON or OFF using the **arrow (▲▼)** buttons or **[Select]** button.




- Selecting ON or Test causes a test to run as shown below:



(3) ID

- Go to the **{2. ID}** menu using the **arrow (▲▼)** buttons and press the **[Select]** button.
- On the input window, enter the ID using the **arrow (▲▼◀▶)** and **[Select]** buttons.
- After inputting the data, select **[Save and Exit]** using the **arrow (▲▼◀▶)** buttons or **[Tab]** button  and save the setting by pressing the **[Select]** button.


(4) Password

- Go to the **{3. Password}** menu using the **arrow (▲▼)** buttons and press the **[Select]** button.
- On the input window, enter the password using the **arrow (▲▼◀▶)** and **[Select]** buttons.
- After inputting the data, select **[Save and Exit]** using the **arrow (▲▼◀▶)** buttons or **[Tab]** button  and save the setting by pressing the **[Select]** button.

(5) IP

- Go to the **{4. IP}** menu using the **arrow (▲▼)** buttons and press the **[Select]** button.
- On the input window, enter the IP using the **arrow (▲▼◀▶)** and **[Select]** buttons.

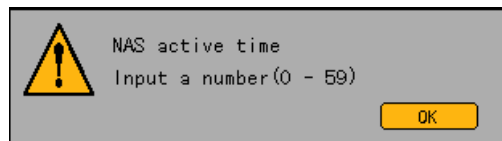
(6) Directory

- Go to the **{5. Directory}** menu using the **arrow (▲▼)** buttons and press the **[Select]** button.
- On the input window, enter the directory using the **arrow (▲▼◀▶)** and **[Select]** buttons.
- After inputting the data, select **[Save and Exit]** using the **arrow (▲▼◀▶)** buttons or **[Tab]** button  and save the setting by pressing the **[Select]** button.

(7) Execution time

- Go to the **{6. Execution Time (Hourly)}** menu using the **arrow (▲▼)** buttons and press the **[Select]** button.
- On the input window, enter the execution time using the **arrow (▲▼◀▶)** and **[Select]** buttons.
- Only numbers between 1 and 59 are recognized; each number denotes a minute.

Beyond 59 minutes, the following warning message appears:

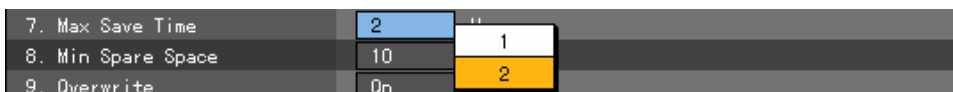


(8) Maximum Save time

- On the **{Storage }** menu, select **{NAS Backup} -> {7. Maximum Save Time}** using the **arrow (▲▼)** buttons and press the **[Select]** button.



- On the selection box, select One Hour or Two Hours using the **arrow (▲▼)** buttons or **[Select]** button.



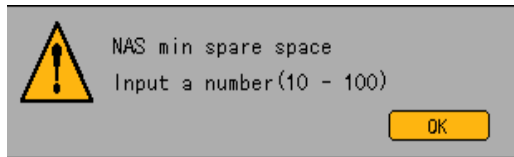
(9) Minimum capacity

- Go to the **{8. Minimum Space}** menu using the **arrow (▲▼)** buttons and press the **[Select]**

button.

- On the input window, enter the minimum space using the **arrow (▲▼◀▶)** and **[Select]** buttons.
- Only numbers between 10 and 100 are recognized; each number denotes the space in GB (gigabyte).

If the minimum space is more than 100 gigabytes, the following warning message is displayed:



(10) Overwrite

Turns NAS overwriting ON/OFF

- On the **{Storage Device}** menu, select **{NAS Backup}->{9. Overwrite}** using the **arrow (▲▼)** buttons and press the **[Select]** button.



- On the selection box, select ON or OFF using the **arrow (▲▼)** buttons or **[Select]** button.



5-6-6 NTP

Protocol for synchronizing the time between devices connected through the network

Description of features

1. Time synchronization

1) Synchronization with the NTP server

Time is synchronized with the NTP server by the hour.

A. Automatic setting

Connection with the server nearest to the user-defined zone is attempted or the next nearest server if connection fails.

B. User setting

The user sets the URL or IP of the NTP server. If connection is not established, a message is sent to the user, and the corresponding log, saved.

If synchronization with the NTP server fails, synchronization with the RTC ensues.

2) Synchronization with the DVR time server

The DTS server runs in Workhorse 120-8; time is synchronized every hour. Workhorse 120-8 DTS clients referring to the DTS synchronize the time of the DVR system.

Any change in the DTS time or a zone is reflected on the DVR belonging to the network (synchronization signals are broadcasted without passing through the router or gateway; the DVR time server does not support automatic connection).

2. Daylight saving time (DST) setting

The DST is automatically processed depending on the zone, i.e., whether the NTP server or the DST server is used as a reference.

3. User time setting

The user can set the time.

For NTP client setting, however, the user can only read the time but not change it.

(2) Selecting the NTP menu

- Select **{Main Setup}** and **{Storage}**.

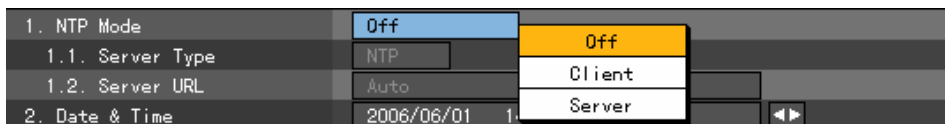


(3) NTP mode

- On the **{NTP}** menu, select **{1. NTP Mode}** using the arrow (**▲▼**) buttons and press the **[Select]** button.



- On the selection box, select the NTP mode using the arrow (**▲▼**) and **[Select]** buttons.



OFF	NTP is not used.
Server	The DVR time server is used.
Client	The DTS client is used, and the server time is synchronized.

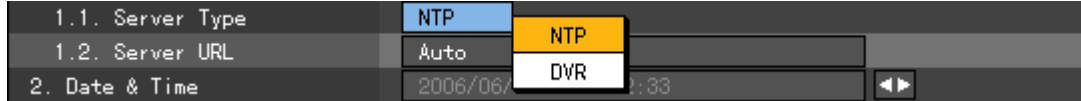
A) Server type

Settings may be defined in client {NTP Mode}. Select either the NTP server or the DVR time server.

- On the NTP menu, select {1.1. Server type} using the **arrow (▲▼)** buttons and press the **[Select]** button.



- On the selection box, set the sensor type using the **arrow (▲▼)** and **[Select]** buttons.



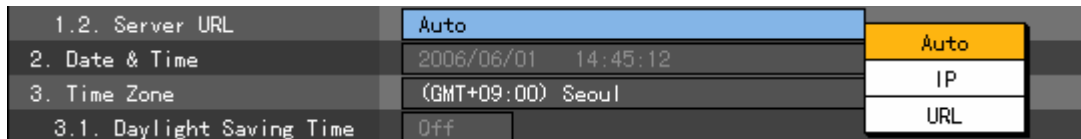
B) Server URL

Settings may be defined only in client NTP mode. Set the address of the NTP server or DVR time server.

- On the {NTP} menu, select {1.2. Server URL} using the **arrow (▲▼)** buttons and press the **[Select]** button.



- On the selection box, set the server URL using the **arrow (▲▼)** and **[Select]** buttons.



- The user can enter the IP only when the server type is DVR. For the NTP server, Automatic, IP, or URL should be selected.

■ Automatic

Attempts to connect with the server nearest to the user-defined zone or the next nearest server if connection fails

■ IP

On the numeric data input field, enter the IP of the server to synchronize the time.

■ URL

On the text input window, enter the URL of the server to synchronize the time.

(4) Changing the system date and time

Can be changed only in NTP Server or OFF mode

The system date and time format is Year/Month/Day Hour/Minute/Second. To set the display format, select {Main Setup} -> {System} -> {6. Time Display Format}.

- On the {NTP} menu, select {2. Date and Time} using the arrow (▲▼) buttons and press the [Select] button.
- Select the field to be changed using the arrow (◀▶) buttons and press the [Select] button.
- After changing the date and time using the arrow (▲▼) buttons, press [Select].

1.2. Server URL	168.100.112	
2. Date & Time	2006/06/01 14:49:12	◀▶
3. Time Zone	(GMT+09:00) Seoul	

- The following message is then displayed, and the system time, changed:



(5) Time zone

Used to set the standard time

3. Time Zone	(GMT+09:00) Seoul
3.1. Daylight Saving Time	(GMT+09:00) Osaka, Sapporo, Tokyo
	(GMT+09:00) Seoul
	(GMT+09:00) Yakutsk
	(GMT+09:30) Adelaide
	(GMT+09:30) Darwin

A) Daylight-saving time


Used to apply the daylight-saving time system

- This field is enabled only when the selected region supports the DST.
- On the {NTP} menu, select {3.1. DST} using the arrow (▲▼) buttons and press the [Select] button.

3.1. Daylight Saving Time	Off
---------------------------	-----

- On the selection box, select ON or OFF using the arrow (▲▼) buttons or [Select] button.

3.1. Daylight Saving Time	Off	Off
		On

- Select [Save] using the [Tab] button  on the remote control or the arrow (◀▶) buttons and press the [Select] button.



After the DST is selected, existing data are displayed as “OLD_” in the search and log list.

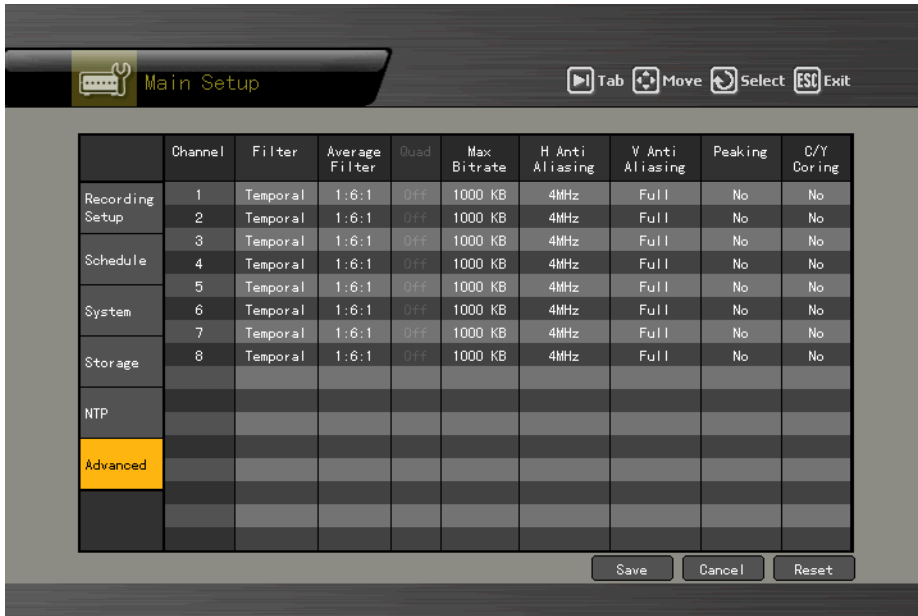
5-6-7 Advanced

Sets the video quality more specifically per channel

(1) Selecting the Advanced menu

A) Selecting the menu type

- Advanced menu configuration



(2) Advanced option setting per channel

A) Filter

On the {Filter} menu, press the [Select] button using the arrow (▲▼) buttons.

	Channel	Filter	Average Filter	Comb Trap	Max Bitrate	H Anti Aliasing	V Anti Aliasing	Peaking	C/Y Coring
Recording Setup	1	Temporal	1:6:1	Off	300KB	4MHz	Full	93%	No
	2	Temporal	Temporal	Off	300KB	4MHz	Full	93%	No
	3	Temporal	Deinterla.	Off	300KB	4MHz	Full	93%	No

B) {Average filter}

Go to the {Average Filter} menu and press the [Select] button using the arrow (▲▼) buttons.

	Channel	Filter	Average Filter	Comb Trap	Max Bitrate	H Anti Aliasing	V Anti Aliasing	Peaking	C/Y Coring
Recording Setup	1	Temporal	1:2:1	Off	300KB	4MHz	Full	93%	No
	2	Temporal	1:2:1	Off	300KB	4MHz	Full	93%	No
	3	Temporal	1:2:1	Off	300KB	4MHz	Full	93%	No

C) Maximum bit rate

- On the input window, enter the IP using the **arrow (▲▼◀▶)** and **[Select]** buttons.
- After inputting the data, select **[Save and Exit]** using the **arrow (▲▼◀▶)** buttons or **[Tab]** button and save the setting by pressing the **[Select]** button.

D) H anti-aliasing

Go to the **{H Anti-Aliasing}** menu and press the **[Select]** button using the **arrow (▲▼)** buttons.

	Channel	Filter	Average Filter	Comb Trap	Max Bitrate	H Anti Aliasing	V Anti Aliasing	Peaking	C/Y Coring
Recording Setup	1	Temporal	1:2:1	Trap	300KB	4MHz	4MHz	93%	No
	2	Temporal	1:2:1	Comb	300KB	4MHz	2MHz	93%	No
	3	Temporal	1:2:1	Comb	300KB	4MHz	1.5MHz	93%	No
Schedule	4	Temporal	1:2:1	Comb	300KB	4MHz	1MHz	93%	No
	5	Temporal	1:2:1	Trap	300KB	4MHz	Full	93%	No

E) V anti-aliasing

Go to the **{V Anti-Aliasing}** menu and press the **[Select]** button using the **arrow (▲▼)** buttons.

	Channel	Filter	Average Filter	Comb Trap	Max Bitrate	H Anti Aliasing	V Anti Aliasing	Peaking	C/Y Coring
Recording Setup	1	Temporal	1:2:1	Trap	300KB	4MHz	Full	93%	No
	2	Temporal	1:2:1	Comb	300KB	4MHz	Full	0.25 Line	No
	3	Temporal	1:2:1	Comb	300KB	4MHz	Full	0.18 Line	No
Schedule	4	Temporal	1:2:1	Comb	300KB	4MHz	Full	93%	No

F) Peaking

Go to the **{Peaking}** menu and press the **[Select]** button using the **arrow (▲▼)** buttons.

	Channel	Filter	Average Filter	Comb Trap	Max Bitrate	H Anti Aliasing	V Anti Aliasing	Peaking	C/Y Coring
Recording Setup	1	Temporal	1:2:1	Trap	300KB	4MHz	Full	93%	No
	2	Temporal	1:2:1	Comb	300KB	4MHz	Full	93%	31%
	3	Temporal	1:2:1	Comb	300KB	4MHz	Full	93%	62%
Schedule	4	Temporal	1:2:1	Comb	300KB	4MHz	Full	93%	93%
	5	Temporal	1:2:1	Trap	300KB	4MHz	Full	93%	No

G) C/Y cording

Go to the **{C/Y Cording}** menu and press the **[Select]** button using the **arrow (▲▼)** buttons.

	Channel	Filter	Average Filter	Comb Trap	Max Bitrate	H Anti Aliasing	V Anti Aliasing	Peaking	C/Y Cording
Recording Setup	1	Temporal	1:2:1	Trap	300KB	4MHz	Full	No	No
	2	Temporal	1:2:1	Comb	300KB	4MHz	Full	+/-1	No
Schedule	3	Temporal	1:2:1	Comb	300KB	4MHz	Full	+/-2	No
	4	Temporal	1:2:1	Comb	300KB	4MHz	Full	+/-4	No
	5	Temporal	1:2:1	Trap	300KB	4MHz	Full		No

(3) Description of advanced options

Menu	Description
{Filter}	This is used to filter the images. Either Median Filter or Temporal Filter may be selected. If there is lots of noise in the still image, select Median Filter; if there is lots of noise in the moving image, however, Temporal Filter is recommended. Since the DVR handles moving images, Temporal Filter is recommended.
{Average Filter}	Either 1:6:1 or 1:2:1 may be selected. For 1:6:1, however, the file size is high but the filtering degree is low; this means that the resulting image is close to the original image. The default setting is 1:2:1.
{Maximum Bit Rate}	This refers to the maximum size unit for the streaming of moving images.
{H Anti-aliasing}	This is used to set horizontal anti-aliasing. In most cases, 4MHz is closest to the actual video.
{V Anti aliasing}	This is used to set vertical anti-aliasing. In most cases, the [All] option is closest to the actual video.
{Peaking}	Peaking emphasizes the edge of the Y elements. The user can select No, 31%, 62%, or 93%. At 93%, however (which is also the default setting), the edges are emphasized the most.
{C/Y Cording}	Cording is used to keep the edges sharp among the Y elements of the image. The user can select No, +/-1, +/-2, or +/-4. To get the softest images, however, +/-4 is recommended; the default setting is No.

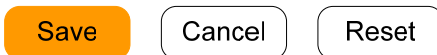
5-7 Additional Setup

Use **{Additional Setup}** to set the PTZ and network features.



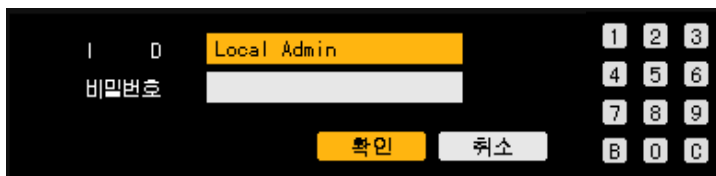
After changing the setting on the **{Additional Setup}** menu, save the setting before exiting the menu.

- **[Save]**
Saves the setting
- **[Cancel]**
Exits without saving the setting
- **[Reset]** – Deletes the previous settings and resets the setup

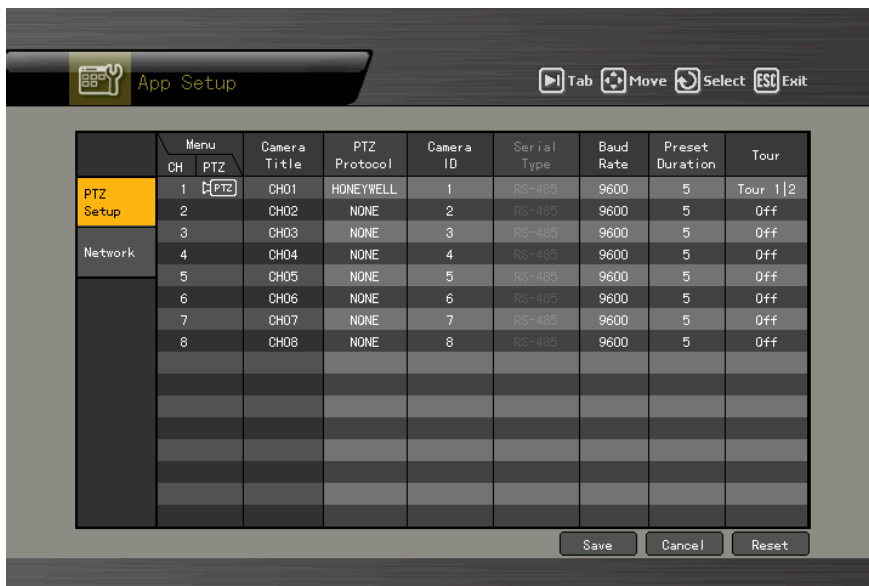


5-7-1 Selecting Additional Setup

- On the real-time monitoring screen, select the **[Additional Setup]** button on the remote control.
- The login window is then displayed as shown below:



- Enter the ID and password and click **[OK]**.
- The default password of the local administrator is “00000.”
 - Go to the ID selection box and change the ID using the **arrow (▲▼)** buttons.
- Once the correct password is inputted, the initial **{Additional Setup}** menu is displayed as shown below:



5-7-2 PTZ Setup

Sets the PTZ camera connected to the system

Menu CH	Displays Channel Nos. 1 ~ No. 8
Menu PTZ	Setting the PTZ causes a camera icon to be displayed.
Camera name	Displays the name of each channel
PTZ protocol	Sets the protocol used to communicate with the PTZ camera
Camera ID	ID set in the PTZ camera
Transmission type	Camera control cable type (RS-485)
Transmission rate	Communication speed (must be the same as that indicated in the camera manual)
Preset maintenance time	Interval between the Preset as defined in the Tour feature and the next Preset (unit: 5 – 60 seconds)
Tour	Used to set the Tour feature (Tour 1 and Tour 2)

(1) PTZ protocol setting

The PTZ protocol is used for communicating with the PTZ camera.

- On the **{PTZ Setup}** menu, select a channel using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.
- On the selection box, select the audio channel using the **arrow (▲▼)** and **[Select]** buttons.

PTZ Protocol
NONE
NONE
NONE
NONE
NONE
NONE
COHU
NONE

PTZ Protocol	Camera ID	Serial Type	Baud Rate	Preset Duration
NONE	NONE	RS-485	9600	5
NONE	A.D.	RS-485	9600	5
NONE	COHU	RS-485	9600	5
NONE	DONGYANG	RS-485	9600	5
NONE	GSP	RS-485	9600	5
COHU	5	NONE	9600	5
NONE	7	CYBERSCAN	9600	5
NONE	8	RS-485	9600	5
NONE	9	RS-485	9600	5

(2) Camera ID setting

Camera ID refers to the address used for communicating with the PTZ camera.

- On the **{PTZ Setup}** menu, select the channel using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.
- On the selection box, set the camera ID using the **arrow (▲▼)** and **[Select]** buttons.
- Camera IDs may be from 1 to 16.

The camera ID must be the same as the address set in the PTZ camera. Different methods are used to set the address of the PTZ camera depending on the camera manufacturer or model.

(3) Setting the transmission type

The transmission type pertains to the interface type used to communicate with the PTZ camera. In Workhorse 120-8, the transmission type is RS-485.

RS-485 Standard interface for multi-point communication line approved by TIA/EIA

(4) Setting the transmission rate

The transmission rate denotes the speed of communication with the PTZ camera.

The transmission rate must be the same as the communication speed of the PTZ camera. Different methods are used to set the address of the PTZ camera depending on the camera manufacturer or model. See the camera manual for reference.

- On the **{PTZ Setup}** menu, select the corresponding channel using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.
- On the selection box, set the baud rate using the **arrow (▲▼)** and **[Select]** buttons.

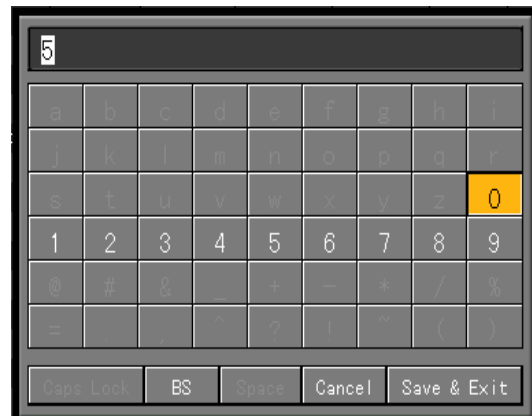
Baud Rate
9600
9600
9600
9600
9600
9600
9600

Baud Rate	Preset Duration
9600	-
9600	2400
9600	4800
9600	9600
9600	19200
9600	38400
9600	5

(5) Preset Duration

- Go to the **{Preset Duration}** menu and select the desired channel. On the **{PTZ Setup}** menu, preset the maintenance time using the **arrow (▲▼◀▶)** buttons and press the **[Select]** button.
- On the selection box, set the preset maintenance time using the **arrow (▲▼)** and **[Select]** buttons.

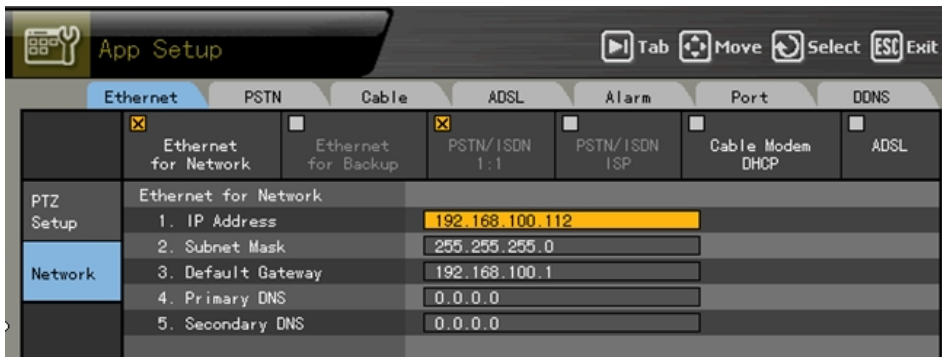
Preset Duration
5
5
5
5
5
5
5



5-7-3 Network Setup

(1) Selecting the Network Setup menu

- In {Additional Setup} mode, select {Network} and press the [Select] button.



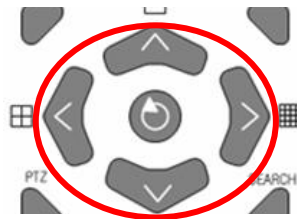
(2) Ethernet

Used to set a fixed IP in the LAN environment


- Select {Ethernet} using the arrow (◀▶) buttons and press the [Select] button.

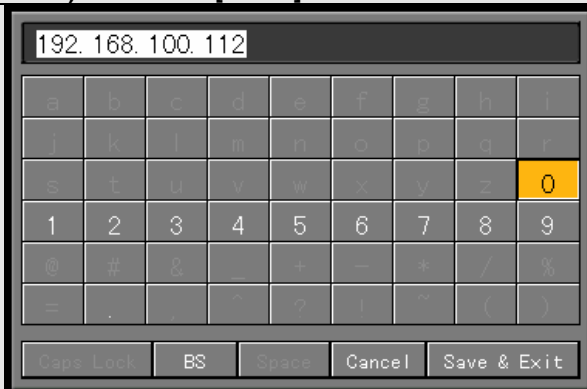


- To select 1, 2, or 3, use the [Tab] button. For others, use the arrow (◀▶) buttons.



When changing the last panel of the existing address:

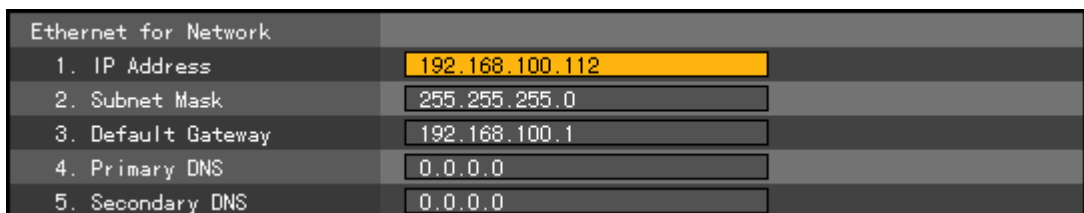
- Go to the input box using the **arrow** (▲▼◀▶) buttons and press the < left, right, up, or down> **arrow** button.
- Select  using the [Tab] or **arrow** (▲▼) buttons.
- Delete only the changed value using the [Select] button.
- Enter the new value by using the numeric buttons on the remote control or the **arrow** (▲▼◀▶) buttons and [Select] button.




BS	Backspace
Cancel	Used to cancel
Save and exit	Used to save and exit

B) IP address setup

- On the {Ethernet Setup} menu, go to the IP address input box using the **arrow** (▲▼) buttons and press the [Select] button.




- On the input window, enter the IP address using the numeric buttons on the remote control or the **arrow** (▲▼◀▶) and [Select] buttons.
- After inputting the data, select [Save and Exit] followed by the [Select] button using the [Tab]  or **Arrow** (▲▼) buttons.

C) Subnet mask setting

- On the {Ethernet Setup} menu, go to the auxiliary DNS input field using the **arrow** (▲▼) buttons and press the [Select] button.


Ethernet for Network	
1. IP Address	192.168.100.112
2. Subnet Mask	255.255.255.0
3. Default Gateway	192.168.100.1
4. Primary DNS	0.0.0.0
5. Secondary DNS	0.0.0.0

- On the input window, enter the subnet mask using the numeric buttons on the remote control or the **arrow (▲▼◀▶)** and **[Select]** buttons.
- After inputting the data, select **[Save and Exit]** using the **[Tab]**  or **Arrow (▲▼)** buttons and press the **[Select]** button.

D) Default gateway setting

- On the **{Ethernet Setup}** menu, go to the default gateway input field using the **arrow (▲▼)** buttons and press the **[Select]** button.


Ethernet for Network	
1. IP Address	192.168.100.112
2. Subnet Mask	255.255.255.0
3. Default Gateway	192.168.100.1
4. Primary DNS	0.0.0.0
5. Secondary DNS	0.0.0.0

- On the input window, enter the default gateway using the numeric buttons on the remote control or the **arrow (▲▼◀▶)** and **[Select]** buttons.
- After inputting the data, select **[Save and Exit]** using the **[Tab]**  or **Arrow (▲▼)** buttons and press the **[Select]** button.

E) Default DNS setting

- On the **{Ethernet Setup}** menu, go to the default DNS input field using the **arrow (▲▼)** buttons and press the **[Select]** button.


Ethernet for Network	
1. IP Address	192.168.100.112
2. Subnet Mask	255.255.255.0
3. Default Gateway	192.168.100.1
4. Primary DNS	0.0.0.0
5. Secondary DNS	0.0.0.0

- On the input window, enter the auxiliary DNS using the numeric buttons on the remote control or the **arrow (▲▼◀▶)** and **[Select]** buttons.
- After inputting the data, select **[Save and Exit]** using the **[Tab]**  or **arrow (▲▼)** buttons and press the **[Select]** button.

F) Auxiliary DNS setting

- On the **{Ethernet Setup}** menu, go to the auxiliary DNS input field using the **arrow (▲▼)** buttons and press the **[Select]** button.

Ethernet for Network	
1. IP Address	192.168.100.112
2. Subnet Mask	255.255.255.0
3. Default Gateway	192.168.100.1
4. Primary DNS	0.0.0.0
5. Secondary DNS	0.0.0.0

- On the input window, enter the default DNS using the numeric buttons on the remote control or the **arrow (▲▼◀▶)** and **[Select]** buttons.
- After inputting the data, select **[Save and Exit]** followed by the **[Select]** button using the **[Tab]** or **arrow (▲▼)** buttons. 

(3) Cable

Uses the automatic access ADSL or a dynamic IP

- On the **{Network Setup}** menu, select **{Cable}** using the **arrow (◀▶)** buttons and press the **[Select]** button.



The screenshot shows the 'App Setup' interface. At the top, there are navigation buttons: Tab, Move, Select, and ESC Exit. Below this is a menu bar with options: Ethernet, PSTN, Cable, ADSL, Alarm, Port, and DDNS. The 'Cable' option is highlighted in yellow. A red box labeled '1' encloses the 'Cable' option and the 'Ethernet for Network' option. Below the menu bar, there is a table with columns for 'Ethernet for Network', 'Ethernet for Backup', 'PSTN/ISDN 1:1', 'PSTN/ISDN ISP', 'Cable Modem DHCP', and 'ADSL'. The 'Cable Modem DHCP' option is checked. Below the table, there is a 'PTZ Setup' section and a 'Network' section. At the bottom, there is a red box labeled '2' enclosing the 'Repair', 'Save', 'Cancel', and 'Reset' buttons.

(4) ADSL

Used only in the user authentication-type ADSL communication environment

- On the **{Network Setup}** menu, select **{ADSL}** using the **arrow (◀▶)** buttons and press the **[Select]** button.



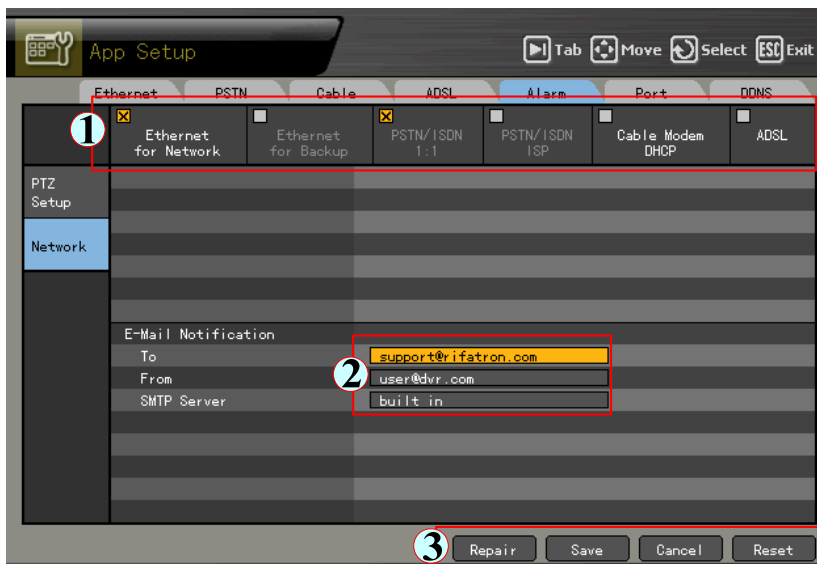
- To select 1, 2, or 3, use the **[Tab]** button. For others, use the **arrow (◀▶)** buttons. Enter the user ID and password and save them.

(5) Alarm

Use this menu to generate alarms in case of an event.

To use this feature, select **{Main Setup}** → **{Data Setup}** and enable Call or Mail Alarm.

- On the **{Network Setup}** menu, select **{Alarm}** using the **arrow (◀▶)** buttons and press the **[Select]** button.

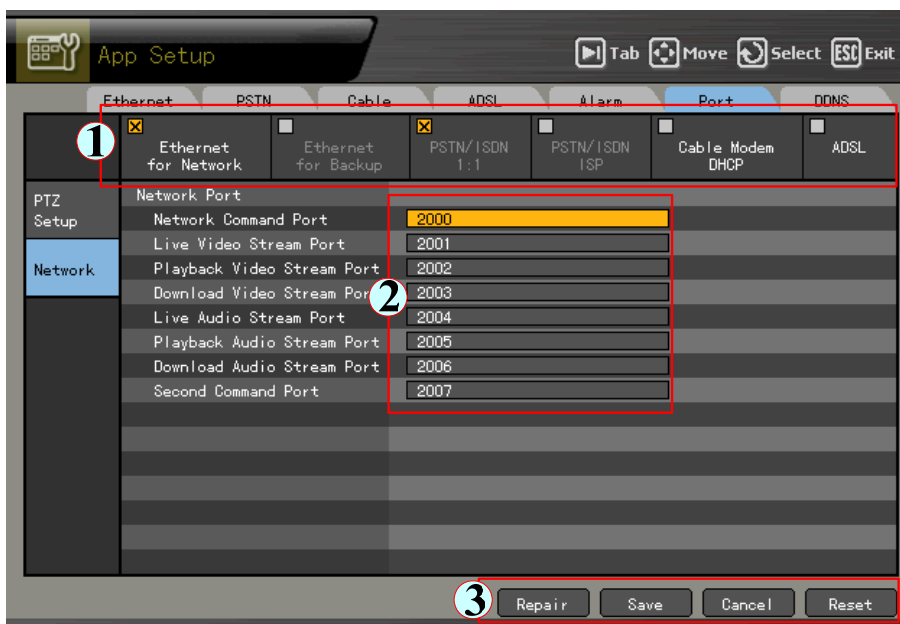


- To select 1, 2, or 3, use the **[Tab]**  button. For others, use the **arrow** button. Set the sending/receiving mail addresses.

(6) Port

Use this menu to customize the network port setting. The port between 2000 and 2007 may be used depending on the network environment, e.g., firewall.

- On the **{Network Setup}** menu, select **{Port}** using the **arrow (◀▶)** buttons and press the **[Select]** button.



- Set the port number using the **[Tab]**  and **arrow (◀▶)** buttons.

(7) DDNS

As part of the DNS system, the Dynamic Domain Name System (DDNS) service dynamically updates the IP addresses of the host names and allocates fixed domain names to systems connected with dynamic IP addresses. This way, the DDNS service ensures the user's access to the network using the same DNS name regardless of the changes in the IP address.

Workhorse/Premier Series provide a dynamic DNS to ensure URL access in a dynamic IP environment. Its built-in web server feature enables remotely monitoring images through the Internet anytime.

- Select **{DDNS}** using the **{Network Setup}** menu and **arrow (◀▶)** buttons and press the **[Select]** button.



- Enable/Disable the use of DDNS using the **arrow (◀▶)** buttons as shown below:



- Register the domain name registered in the DNS server.

After accessing the DDNS server, register the domain name and enter a unique URL.

For more information on adding a domain please contact tech support at 866-301-2288



- Enter the DDNS access password registered in the DDNS server.



- Enter the IP address of the DDNS server.

The default IP address of the DDNS server is 211.117.45.25.



- Set the default port of the DDNS server.

The default port of the DDNS server is 9100.



USER'S GUIDE

Rugged Vision viewer/ Quick viewer

English

Operating Instructions & User's Guide

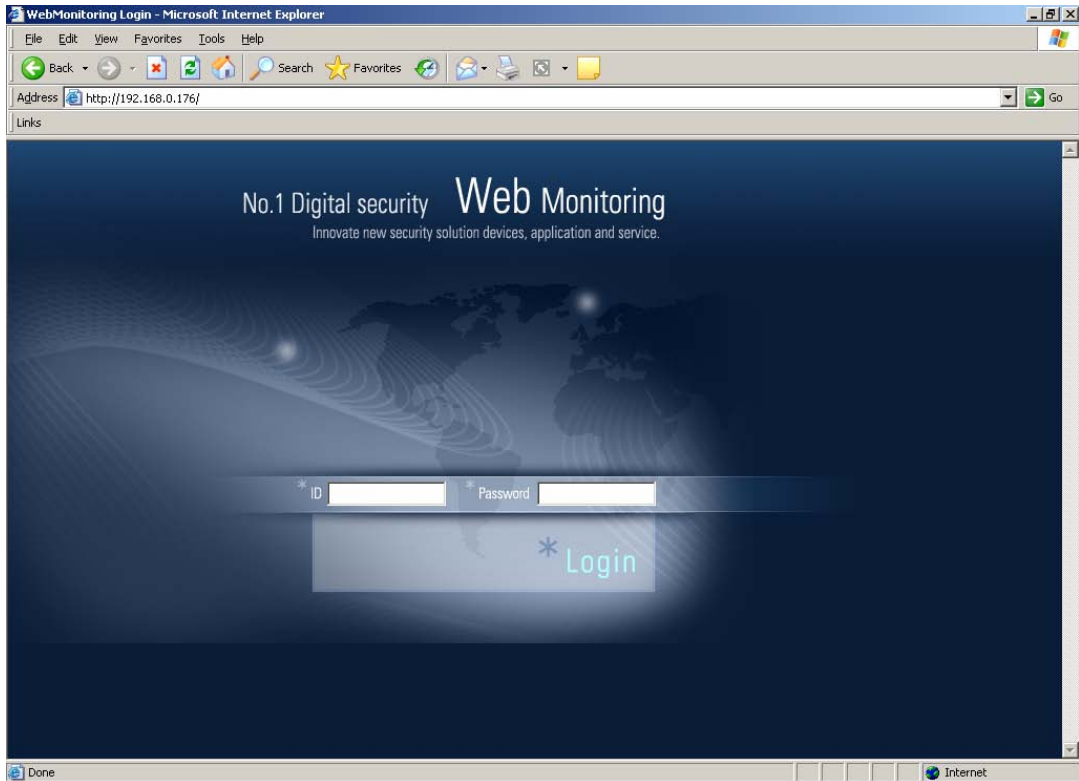


Chapter 1 Rugged Vision Viewer (Web Viewer)

1-1 Access.

The user can access the DVR system through the web.

- Enter the IP of the DVR system on the address field of the web browser.



- The ID and password must be the same as those set in the DVR system. After logging in to the system, install ActiveX for Windows XP SP2 or higher.

1-2 Description of the Basic Features

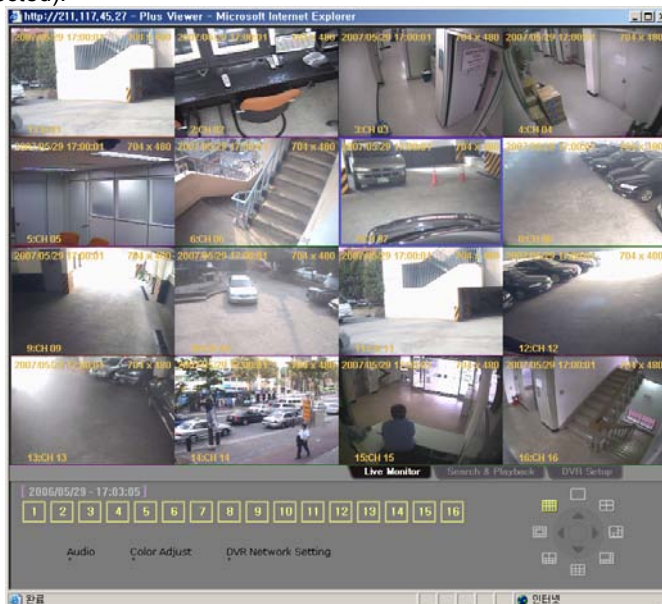
- The user can view the channel on full screen by clicking any of the following numbers:



- Zoomed-in view of Channel No. 2



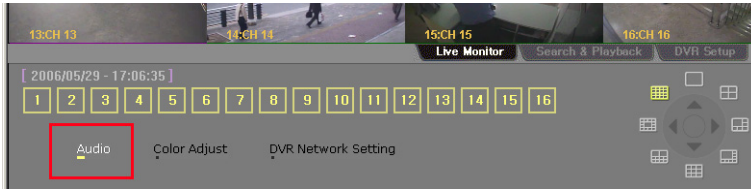
- Clicking Live screen causes the channel to be selected and the border of the corresponding screen to be displayed in a different color (the figure below shows the case wherein Channel No. 7 is selected).



- The user can also view the channel on full screen by double-clicking the channel.

1-3 Audio

- Click the Audio button to control the volume.



- After adjusting the volume, click the Close button to exit the menu.

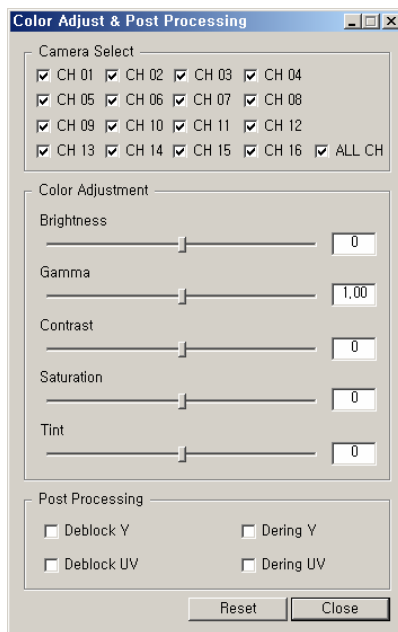


1-4 Color Adjust

- Click Color Adjust to adjust the display colors.

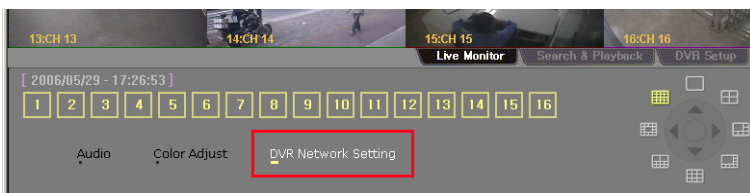


- After adjusting the display colors, click Close to save the setting and close the window.

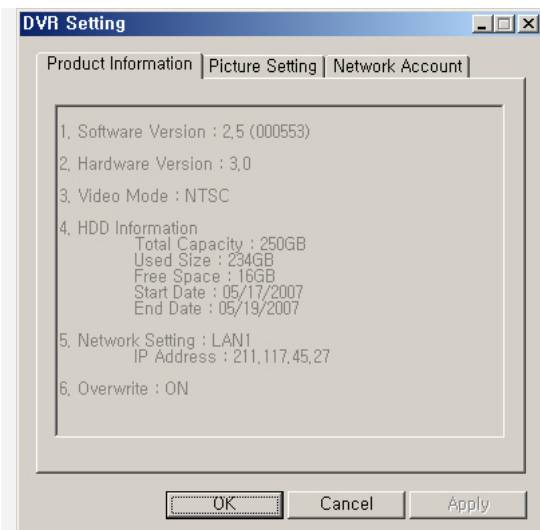


1-5 DVR Network Setting

- To view the DVR setting, click DVR Network Setting.

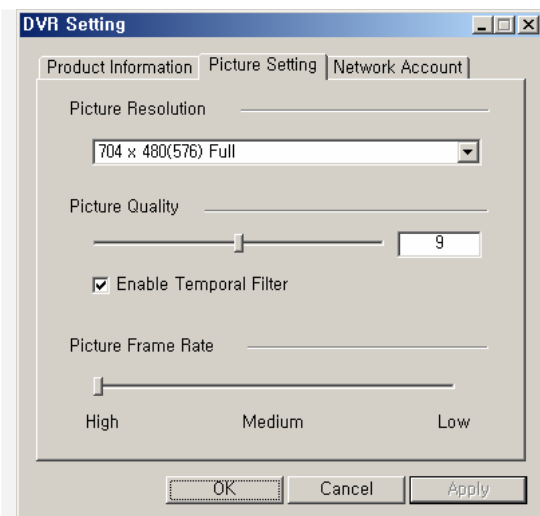


- Product information.



1. Software version: 00 (build no.)
2. Hardware version
3. Video type
4. Hard drive information
 - Total space
 - Used space
 - Free space
 - Recording start date
 - Last recording date
5. Network setting information
6. Hard drive overwriting status

- Use Picture Setting to set the resolution, video quality, and frame speed.



Picture resolution

Used to adjust the resolution; the lower the resolution, the higher the transmission speed (CIF > Field > Full)

Picture quality

Used to adjust the picture quality; the higher the picture quality, the higher the compression rate (in case of low picture quality, the network transmission rate increases)

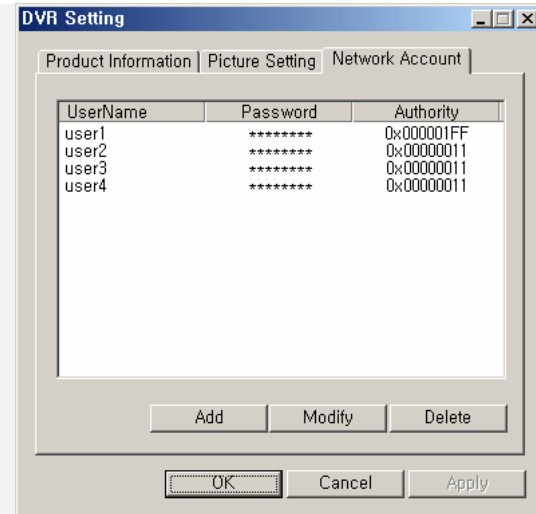
Enable temporal filter

Removes any noise from the video

Picture frame rate

Controls the frame rate; the following are the frame rates for 30 frames:
High: 30; Medium: 15; Low: 7.5

- Use Network Account to display the user information.



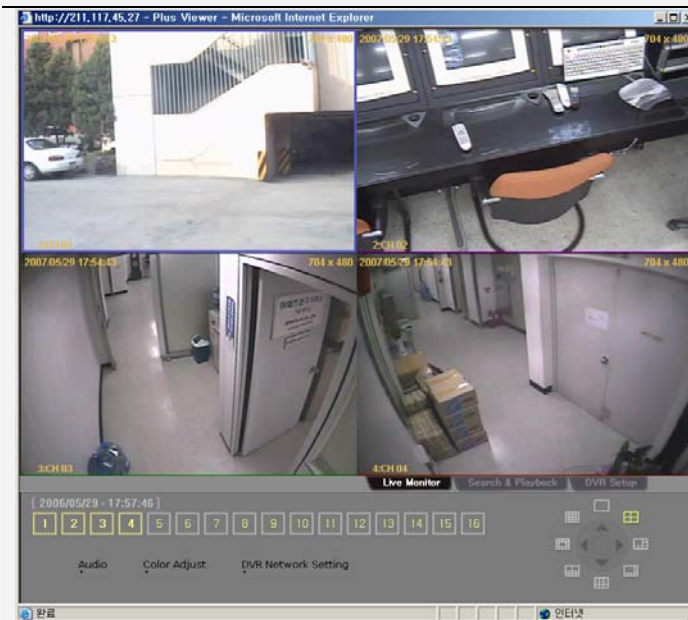
1-6 Viewing a Divided Screen



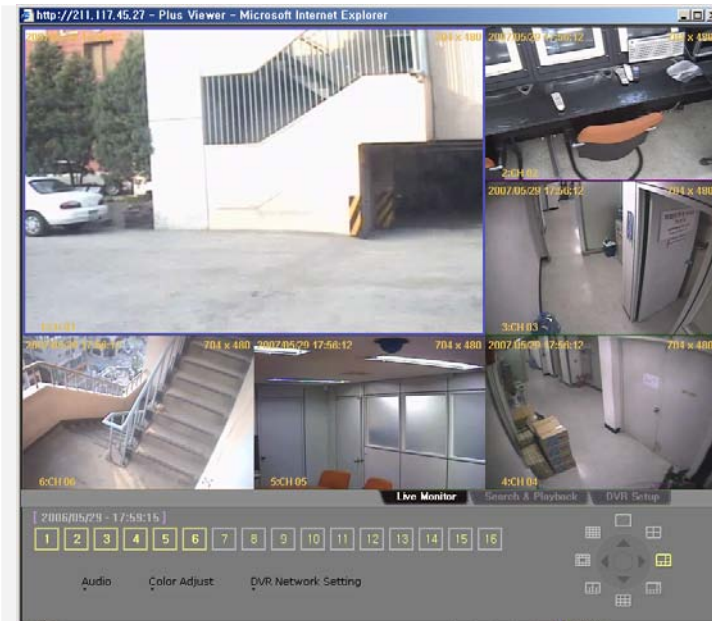
After the channel video is displayed on the monitoring window, the user can view video on a divided screen by clicking the Division mode button.

To view one channel on full screen, double-click any area on the channel window. To return to division mode, double-click any area on the screen.

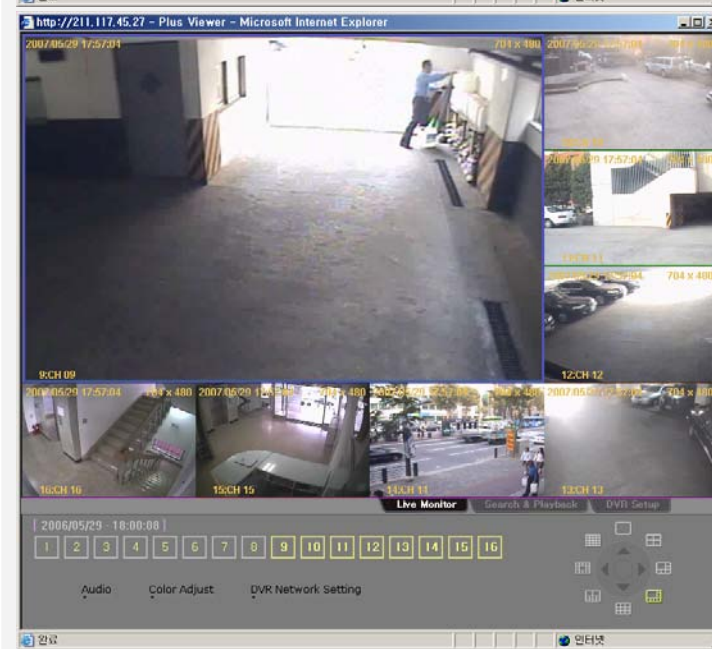
Example - Selecting 4/9/16-division mode



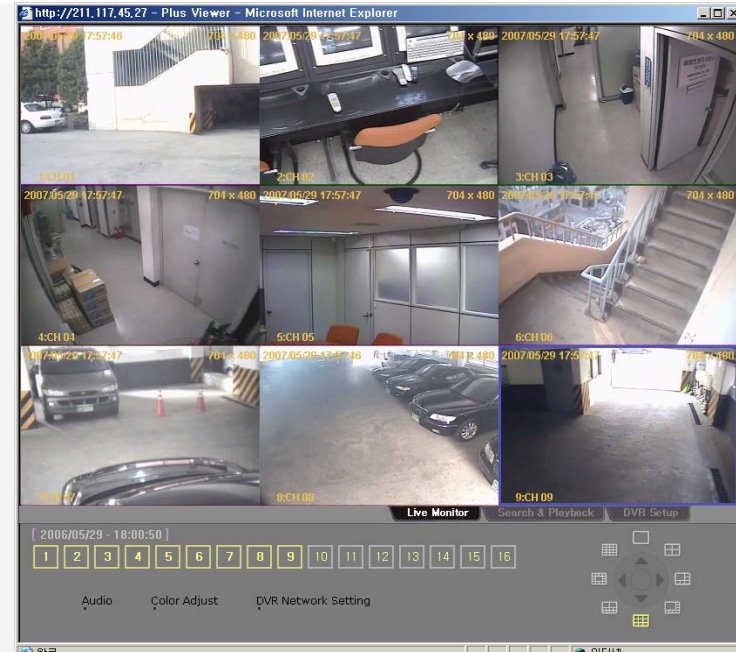
4-division mode



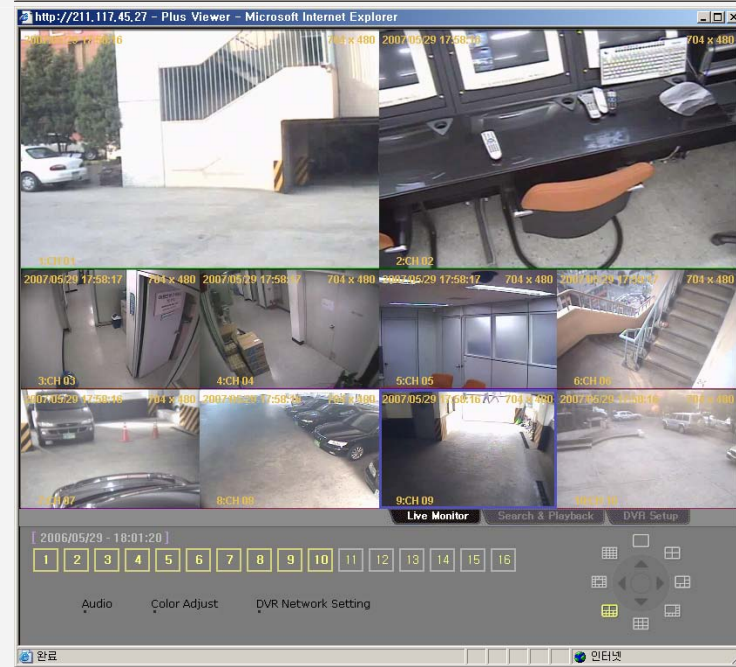
6-division mode



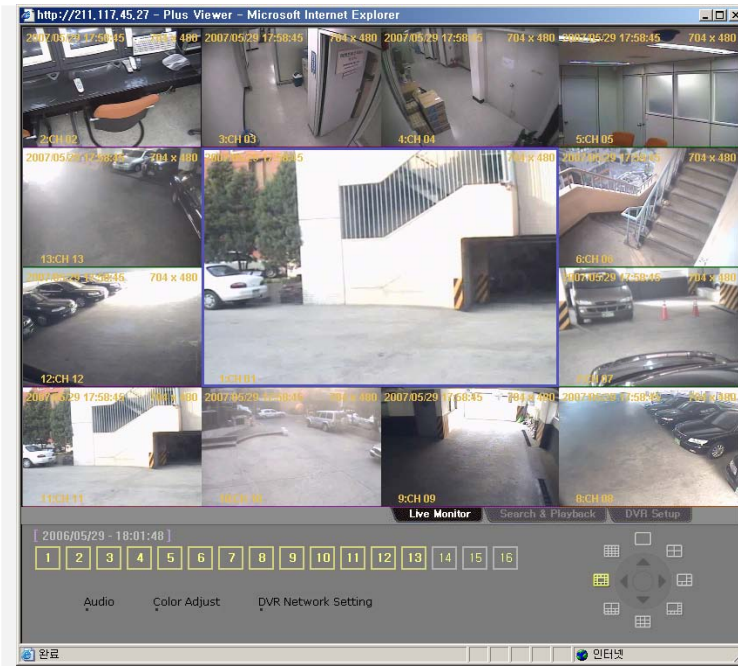
8-division mode



9-division mode



10-division mode

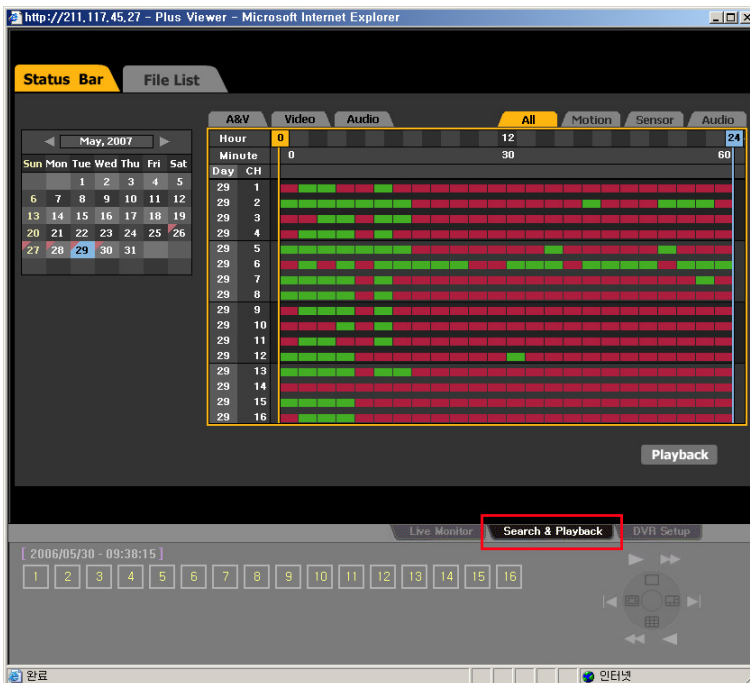


13-division mode

1-7 Search and Playback

Searches and plays the video recorded in a remote place in real time

- Click the Search and Playback tab.



- - **Search Method**

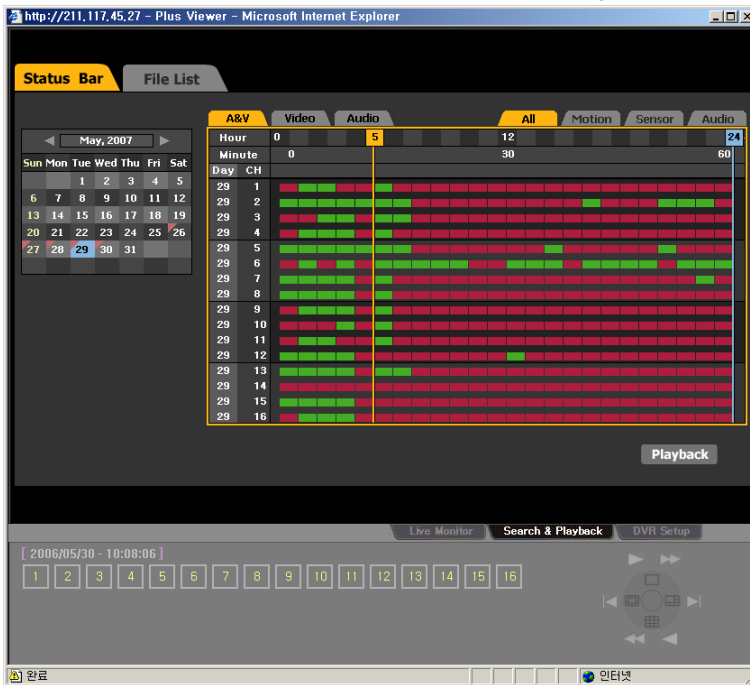
- Status Bar** Search –Displays the recorded video in the form of hour/minute bar graph
- File List** Search –Displays the recorded video in the form of a file list

- - **Search and Play**

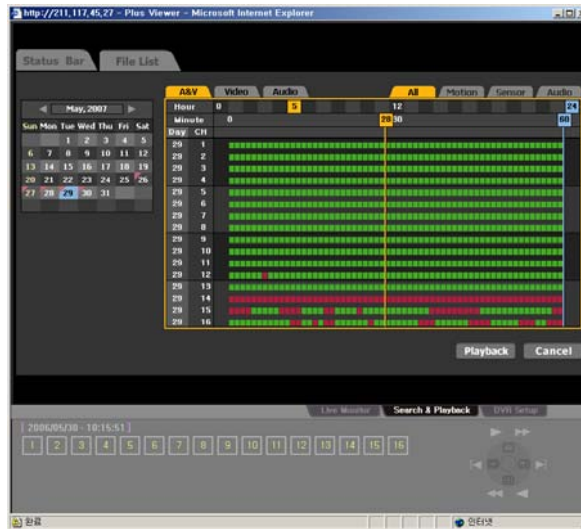
- On the Search window, select the search type by clicking the **Status Bar** or **File List** button.
- Select the date from the calendar. The date with the recorded video is displayed separately.



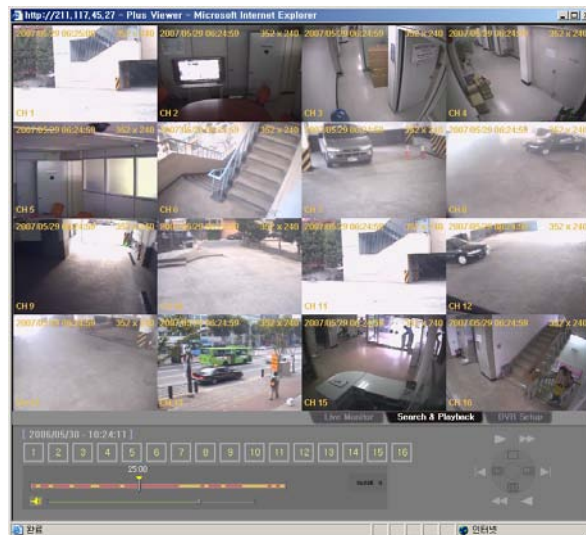
- Select the date and the time and click **Playback**. The following screen is then displayed:



- Select the minute and click **Playback**. The following screen is then displayed.

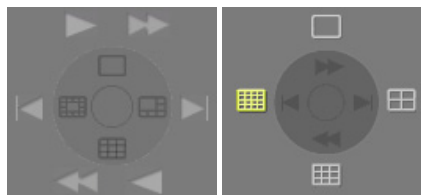


- Playback screen

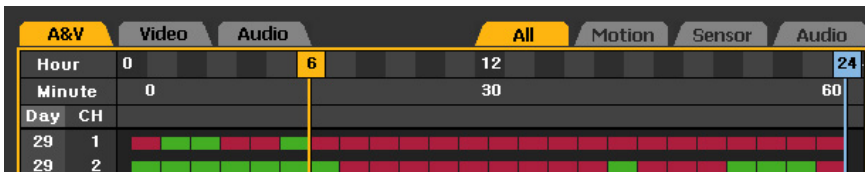


- - Playback Control

- The user can select the screen division and adjust the playback speed using the control at the lower right corner.



- - Screen Description

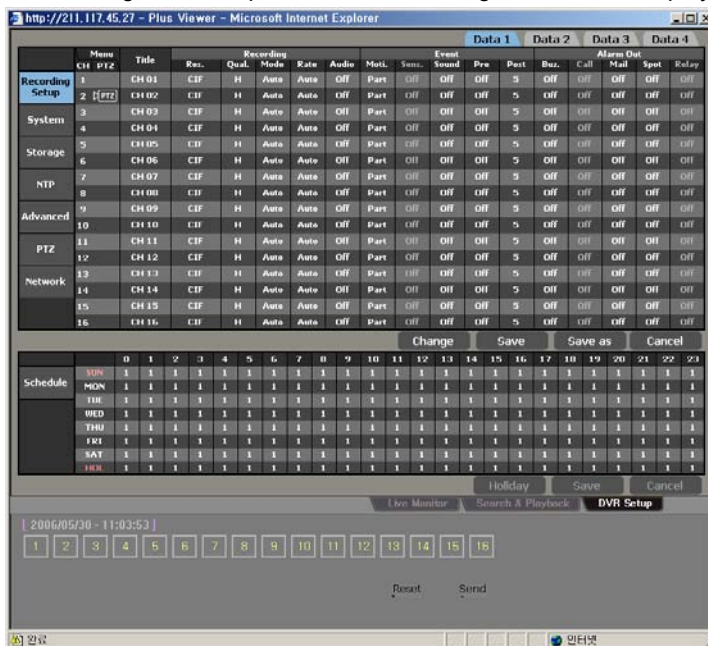


- A & V – Displays all recorded videos
- Video – Displays only files with video
- Audio – Displays only files with audio
- All - Displays all recorded videos on the list
- Motion – Indicates the motion events
- Sensor – Indicates the sensor events
- Audio – Displays the audio events
- General images are displayed in green bars, and events, in red bars.

DVR Setup

The remote DVR setup screen includes Graphic User Interfaces (GUIs) such as DVR OSD.

- DVR Setup** Clicking DVR Setup causes the following screen to be displayed:



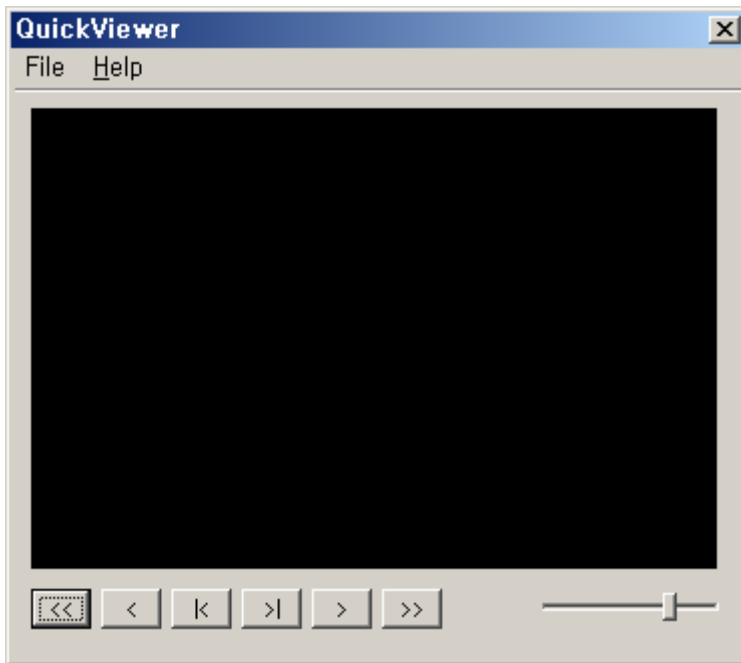
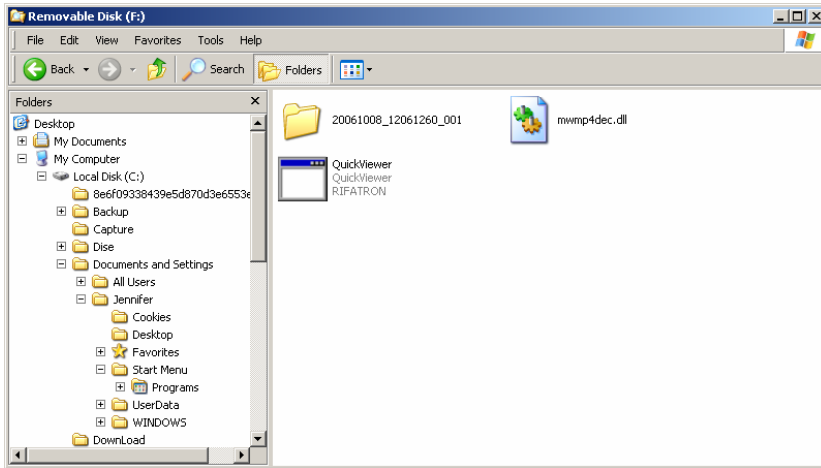
- Change the system setup on the DVR setup screen by clicking the corresponding item on the menu.

For more information on system setup, see Chapter VI. System Setup.

- After changing the system setting, click **Save**.

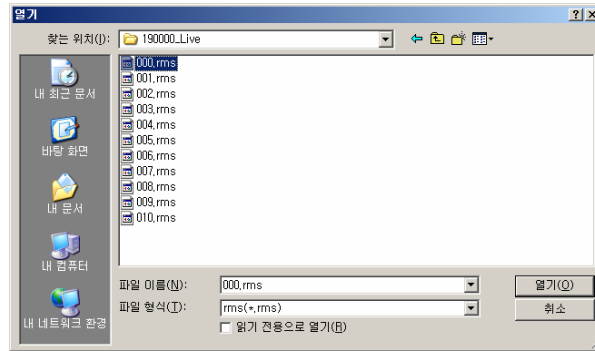
Chapter 2 Quick Viewer

When recorded data is backed up from the DVR system, a new folder as well as QuickViewer.exe and mwmp4dec.dll files are created. The operator can run QuickViewer by executing QuickViewer.exe.

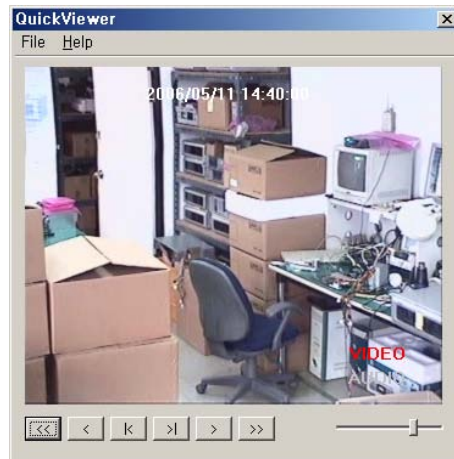


2-1 File Play








- Click File and Open. On the open dialog box, select a file as shown below:



- Select the rms file of the channel to be played.

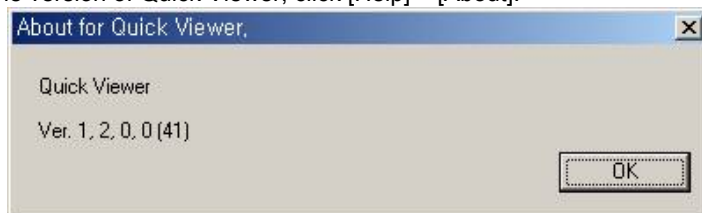


2-2 Description of Buttons

-  Fast backward play – Fast backward play
-  Backward play – General backward play
-  Previous frame– Backward search frame by frame
-  Next frame– Forward search frame by frame
-  Forward play
-  Fast-forward play – Fast-forward play
-  Volume - Volume control

2-3 Version Information

- To check the version of Quick Viewer, click [Help] – [About].



A/P/P/E/N/D/I/X

A/P/P/E/N/D/I/X.....	143
1. PTZ Camera Protocol	144
2. Recommended HDD	144
3. Recommended USB2.0 Device	145
■Memory Stick.....	145
■2.5" Portable USB HDD	145
■CD-RW, DVD-RW	145
■IEEE1394 Device	145

1. PTZ Camera Protocol

NO.	Manufacturer	Protocol
1	CHOU	COHU-3925
2	Kalatel	KALATEL
3	Hitron	FASTRAX2
4	Panasonic	WVCS854, WV-CS850A, WV-CS854, WV-CW860 External
5	Dongyang	DRX_500
6	Samsung	SCC641
7	GSP	CYBERSCAN_1
8	HONEYWELL	HSDN251
9	PHILIPS	PHILIPS
10	RIFATRON	RIFATRON
11	VICON	VICON
12	AMERICAN DYNAMICS	SENSORMATIC
13	PELCO	PELCO – D, PELCO - P
14	PROLINE	PROLINE - UK
15	SAMSUNG TECHWIN	SPD-1600

2. Recommended HDD

NO.	Manufacturer	Model	Capacity	Buffer	RPM
1	Western Digital	WD WD1200	120GB	2M	7200
		WD WD2500	250GB	2M	7200
		WD WD2500	250GB	8M	7200
2	Seagate	SEAGATE BARRACUDA 7200.9 ST3120213A	120GB 160GB 200GB 250GB 300GB	8M 8M 8M 8M 8M	7200 7200 7200 7200 7200
		SEAGATE BARRACUDA 7200.7 ST3160023A			
		SEAGATE BARRACUDA 7200.7 ST3200822A			
		SEAGATE BARRACUDA 7200.9 ST3250824A			
		SEAGATE BARRACUDA 7200.8 ST3300831A			
3	Samsung	Samsung SP1203N/DOM	120GB	2M	7200
		Samsung SP2514N/OMD	250GB	8M	7200
4	HITACHI	HITACHI Desk Star	120GB	8M	7200
		HITACHI Desk Star	250GB	8M	7200
		HITACHI Desk Star	500GB	8M	7200
5	MAXTOR	MAXTOR DIAMOND MAX 11	500GB		7200

3. Recommended USB 2.0 Device

USB 2.0 Device	Media	File System
Memory stick	Flash type	FAT32
2.5" portable USB HDD	HDD type	FAT32
CD	CD R, R/W	ISO9660
DVD	DVD +R, +R/W	ISO9660

■ Memory Stick

No.	Manufacturer	Model	Capacity
1	Transcend	Ultra Speed JetFlash	256MB
2	FM semiconductor	MemoRive USB2.0	256MB
3	LG	Xtick USB Drive	256MB
4	AL Tech	ANYDRIVE mini-USB	256MB
5	Kingston	DataTraveler USB FLASH DRIVE	256MB
6	Sarotech	FLEX FD-03U1	128MB
8	Scandrive	Cruzer Mini	128M
10	Samsung	PLEOMAX	128MB
11	Sony	Micro Vault	128M

■ 2.5" Portable USB HDD

No.	Manufacturer	Model	Capacity
1	IT Mall	neo Q Plus USB 2.0	20GB
2	USBNET	Anypak USB 2.0 20GB	20GB

■ CD-RW, DVD-RW

Manufacturer	Model
SONY	DRX-810UL
Plextor	PX-716UF
SAMSUNG	SE-W164

■ IEEE1394 Device

IEEE1394 Device	Media	File System
2.5" portable USB HDD	HDD type	FAT32