Panasonic®
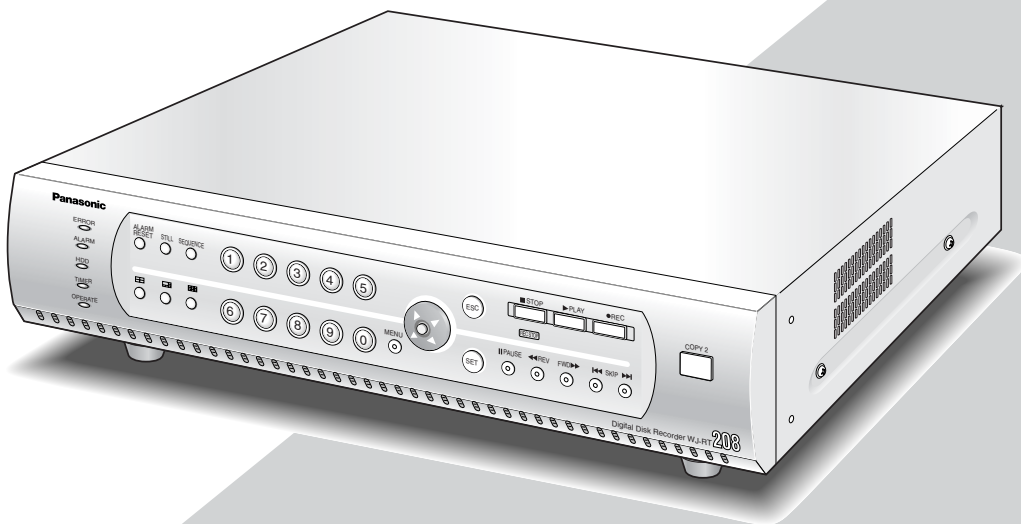
Digital Disk Recorder
Operating Instructions

Model No. WJ-RT208
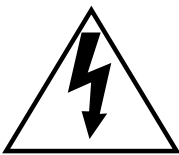
Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

2

IMPORTANT SAFETY INSTRUCTIONS

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

S3125A

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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(2) PERSONAL INJURY OR ANY DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;

(3) UNAUTHORIZED DISASSEMBLY, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER;

(4) INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;

(5) ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY.

Precautions

- Refer all work related to the installation of this appliance to qualified service personnel or system installers.
- Prevent condensation from forming on the surface of the hard disk. Wait until the moisture evaporates in any of the following cases:
  The recorder is moved to a place significantly different in temperature or humidity.
  The recorder is moved outside of an air-conditioned room.
  The recorder is placed in an extremely humid place.
  The recorder is placed in a room where a heater has just been turned on.
- Consumable parts
  Contact your dealer for replacement of the following parts when the time comes:
  Built-in hard disk needs replacement after around 30 000 hours of operation.
  Cooling fan also needs replacement after around 30 000 hours of operation.
  Backup battery has a lifetime of around five (5) years in an ordinary environment.
- Do not block the ventilation opening or slots on the cover.
  To prevent the appliance from overheating, place it at least 5 cm (2 inches) away from the wall.

- Do not drop metallic parts through slots.
  This could permanently damage the appliance. Turn the power off and refer servicing to qualified service personnel.
- Handle the appliance with care. Do not strike or shake, as this may damage the appliance.
- We recommend that you note down your settings and keep the notes. Power or battery failure may erase settings you entered.
- Do not expose the appliance to water or moisture, nor try to operate it in wet areas.
- Do not use strong or abrasive detergents when cleaning the appliance body.
  Use a dry cloth to clean the appliance when it is dirty.
  When the dirt is hard to remove, use a mild detergent and wipe gently.
- Do not operate the appliance beyond its specified temperature, humidity, or power source ratings.
  Do not use the appliance in an extreme environment where there are high temperatures or high humidity. Use the appliance at temperatures within +5 °C to +45 °C (41 °F to 113 °F) and humidity +5 - 90 % (without condensation).
  The input power source for this appliance is 120 V AC, 60 Hz.
- A malfunction of RECORD or PLAY, or damage or defect of recorded data, can occur due to machine failure or problems. Any consequent damage or loss arising from such problems is not subject to the warranty.

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About These Operating Instructions

The WJ-RT208 comes with the following instruction manuals:
Operating Instructions (This Document)

The Operating Instructions explain how to operate the unit with the buttons on the front panel.

Network Operating Instructions (PDF)
Refer to the Network Operating Instructions (PDF) for descriptions of how to operate this unit using a PC.
Adobe® Reader is required to read the Network Operating Instructions (PDF). When the Adobe® Reader is not installed on the PC, download the latest Adobe® Reader from the Adobe web site and install it.

CONTENTS

Preface

The Digital Disk Recorder WJ-RT208 is a professional security product with eight video and audio inputs. It is capable of recording high-quality video/audio data over an extended period of time. In addition to image recording and playback, the many features of the WJ-RT208 include motion detection, external alarm recording, remote operation via a network, and network communication. An RS485 interface is provided for connection with peripheral devices.
The recorder can be controlled by the system controller WV-CU650.

Features

Disk configuration:	Up to 8 hard disks can be installed
	2 hard disks factory-installed (WJ-RT208)
Live monitoring:	Single channel live monitoring (CH 1-8)
	1-, 4-, 6-, 9-split screen
	Camera control
Recording mode:	Manual recording
	Timer recording
	Power-on auto recording
	Terminal recording
	Motion detection (VMD) recording
	Recording quality, frame rate, stream type setup
Compression methods:	Video: MPEG-4
	Audio: ADPCM
Playback mode:	Single channel playback
	Time & date search playback
	Network remote playback
	Remote download and local playback
	Playback after backup
Network monitoring:	Live monitoring
	Remote playback
	Camera control
	Live network communication
Others:	Password key protection
	Running log record
	Original heat radiation design
	Operable using the connected system controller

Major Operating Controls & Their Functions

■ Front View
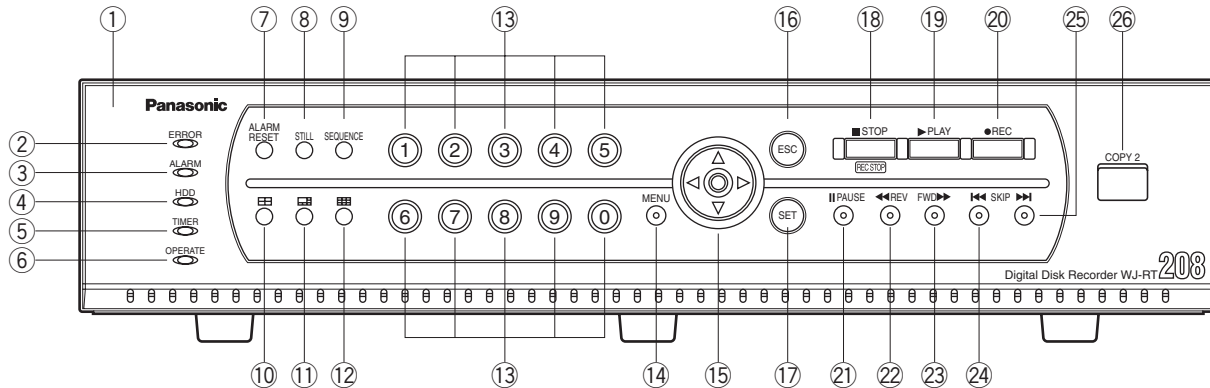
① **Front Panel**

② **Error Indicator (ERROR)**
Lights Red: HDD error, HDD removed automatically.
Lights Orange: Internal thermal error or fan stop error

③ **Alarm Indicator (ALARM)**
Blinks when alarm is activated. It changes to a steady light when the activated alarm is reset after the auto-reset time has elapsed.
To turn the indicator off, press the [ALARM RESET] button.

④ **HDD Access Indicator (HDD)**
Lights up when the HDD is accessed.

⑤ **Timer Recording Indicator (TIMER)**
Lights when timer recording is set. Blinks when recording starts.

⑥ **Operate Indicator (OPERATE)**
Lights up when the power of the WJ-RT208 Digital Disk Recorder is on.

⑦ **Alarm Reset Button (ALARM RESET)**
Pressing this button cancels an activated alarm.

⑧ **Still Button (STILL)**
Pressing this button switches the currently displayed picture to a still picture.

⑨ **Sequence Button (SEQUENCE)**
Runs the assigned sequence on the monitor screen for the specified duration. Pressing this button starts/stops the sequence.

⑩ **4-split Screen Button**
Pressing this button splits the screen into four segments displaying the surveillance pictures on Channels 1 to 4. Pressing the button again displays the next four surveillance pictures on Channels 5 to 8.

⑪ **6-split Screen Button**
Pressing this button splits the screen into six segments displaying the surveillance pictures on Channels 1 to 6. Refer to page 26 for further information. The camera selection button is disabled in this mode.

⑫ **9-split Screen Button**
Pressing this button splits the screen into nine segments displaying the surveillance pictures on Channels 1 to 8.

⑬ **Camera Selection Buttons (Numeric Button)**
Pressing a button selects the input live image, or the recorded image of the specified input.
While a channel is recording, the corresponding button lights up in orange.
These buttons are used for password input to release the button lock function.

⑭ **Menu Button (MENU)**
Pressing this button opens the main menu.

⑮ **Direction Button**
↑**: Up button**
• Menu:
The cursor moves upwards on the menu or dialog.
• Camera control:
Controls the upward movement of the camera.
Images will be zoomed in.

↓: Down button

- Menu:
  The cursor moves downwards on the menu or dialog.
- Camera control:
  Controls the downward movement of the camera.
  Images will be zoomed out.

←: Left button

- Menu:
  Moves the cursor to the left or changes option parameters.
- Camera control:
  Controls the movement of the camera to the left.
  Shifts the focus nearer.
  Closes the iris.

→: Right button

- Menu:
  Moves the cursor to the right or changes option parameters.
- Camera control:
  Controls the movement of the camera to the right.
  Shifts the focus farther.
  Opens the iris.

⑯ **Cancel Button (ESC)**

To return to the previous menu, press this button.
When the menu is not displayed, pressing this button once activates the mute function. To release the mute function, press this button again.

⑰ **Set Button (SET)**

In a dialog box, this button is used to OK a selected parameter.
When controlling the camera, this button is used to change the control mode (pan/tilt → zoom/focus → iris). When setting the motion detection area, it is used to change the points describing the detection area.

⑱ **Stop Button (STOP)**

Pressing this button for two seconds stops recording.
In playback mode, pressing this button stops playback.

⑲ **Play Button (PLAY)**

Pressing this button plays back the images recorded on the current channel.
When this button is pressed in pause mode, the next frame will be displayed.
When this button is pressed while panning/tilting operation, the auto function of the camera will be activated.

⑳ **Recording Button (REC)**

Pressing this button starts recording the data on the current channel. If the camera control is ON, the current position of the camera is saved as preset position.

㉑ **Pause Button (PAUSE)**

Pauses playback.

㉒ **Fast Reverse Play Button (REV)**

Starts fast reverse playback. Three playback speeds are available.

㉓ **Fast Forward Play Button (FWD)**

Starts fast forward playback. Three playback speeds are available.

㉔㉕ **Skip Playback Button (SKIP)**

Skips to the previous or next recorded data, and plays the data from its beginning.

㉖ **Copy Connector (COPY 2)**

This connector is for connecting an external hard disk to back up the data recorded on the hard disks.

■ Rear View
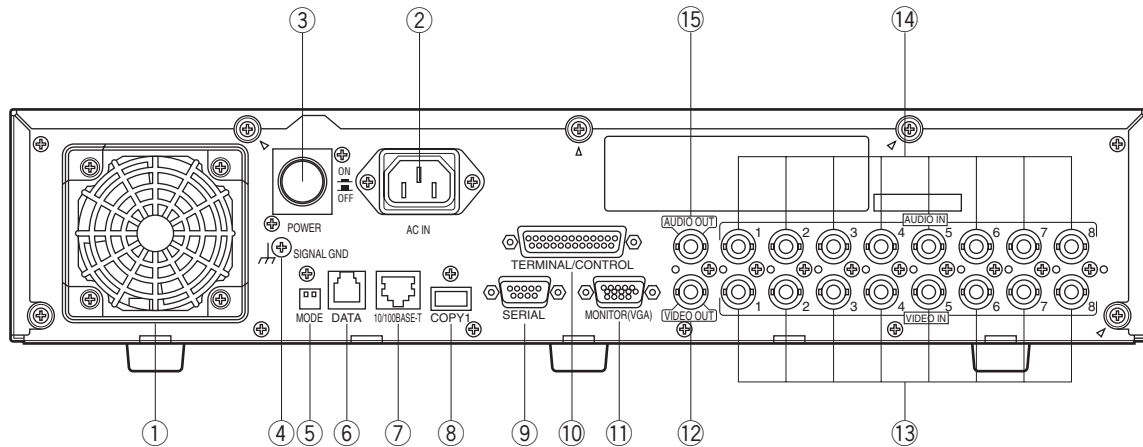
① **Power Cooling Fan**
Prevents the temperature of the recorder from rising. Do not block the ventilation openings.

② **AC Power Connector (AC IN)**
Connect the supplied power cable to this AC power connector.

③ **Power Switch (POWER)**
This switch turns the power of the disk recorder on and off.

④ **Signal Ground Terminal (SIGNAL GND)**

⑤ **Mode Selection DIP switches (MODE)**
This 2-bit DIP switch is used for setting the terminal system. Refer to DIP Switch Setting for details.

⑥ **Data Port (DATA)**
This port is for data communication with external devices.

⑦ **10Base-T/100Base-Tx Port (10/100BASE-T)**
This port is used to exchange control data with Ethernet via an Ethernet Hub.

⑧ **Copy Port (COPY1)**
This port is used to connect an external hard disk to back up the data recorded on the hard disks.

⑨ **Serial Data Port (SERIAL)**
For servicing purpose only.

⑩ **Terminal/Control Port (TERMINAL/CONTROL)**
This port controls terminal inputs 1-8 and alarm outputs 1-3. It is also used to connect component cameras with the RS485 protocol feature.

⑪ **VGA Output Port (MONITOR (VGA))**
When a VGA monitor is connected to this port, the same image as supplied from the video output terminal is obtained.

⑫ **Video Output Connector (VIDEO OUT)**
Spot live, split-screen, and playback pictures are output from this BNC connector. All menu settings and screen display information are also output from this connector.

⑬ **Video Input Connectors (VIDEO IN 1-8)**
System cameras or component cameras are connected to these BNC connectors. A 75 Ω termination is made unless the video output terminal is connected.

⑭ **Audio Input Connectors (AUDIO IN 1-8)**
These are used for BNC standard jacks. Each of them accept an unbalanced –10 dBV, 22 kΩ line input audio signal supplied from an external device.

⑮ **Audio Output Connector (AUDIO OUT)**
This is used for a BNC standard jack that supplies an unbalanced –10 dBV, 22 Ω line output audio signal to an external device.

Installation

This installation should be made by qualified service personnel or system installers.

● Cautions

Places to avoid
- Direct exposure to sunlight or near a source of heat such as a radiator.
- Very dirty and dusty places. Places subject to strong vibrations.
- Near a transformer, dimmer, video player, radio, or monitor. These may cause humming noises, etc.

About mounting
- Do not block the ventilation openings or slots in the cover to prevent the appliance from overheating.
- Always keep the temperature in the rack within +45 °C (113 °F).
- Secure the rear of the appliance to the rack with additional mounting brackets (procured locally), if the rack is subject to vibration.

■ Installing the Hard Disk

There is space for up to 8 hard disks.
The unit is provided with four IDE interfaces, allowing installation of up to eight hard disks.

1. Turning off the power.
   Please check the rear of the unit and confirm that the power switch is turned off, the power cord has been disconnected, and the [OPERATE] indicator is off.

2. Remove the top cover.
   Remove four screws on the side panel and five screws at the rear to remove the top cover (see Fig. 1).
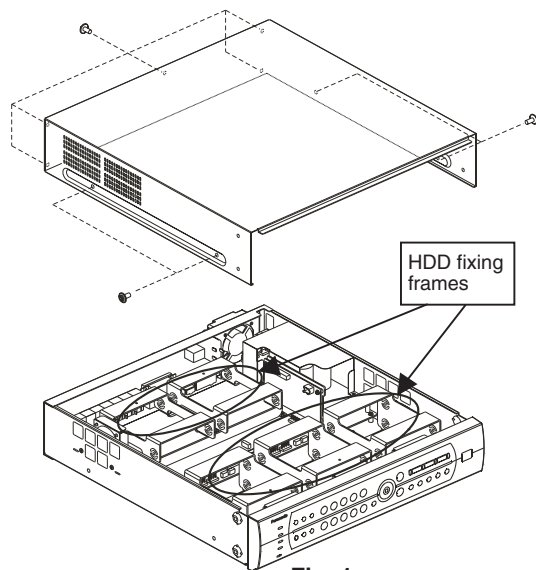
HDD fixing frames

Fig. 1
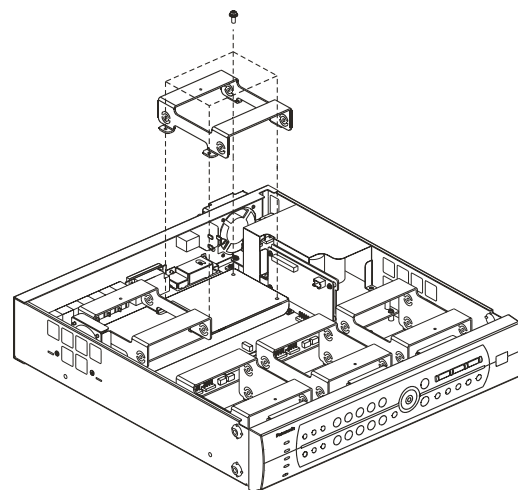
Fig. 2

3. Remove the hard disk fixing frame.
   Of the five hard disk fixing frames, the three frames nearest the front panel can accept two hard disks each. The two frames near the rear panel will accept one hard disk each.
   If you need to remove a hard disk fixing frame, be careful not to damage the fan connection terminal and the hard disk cable. (Fig. 2)

4. Ready the hard disk and install wire jumpers.
   To connect two hard disks to one IDE interface, make sure to designate one as the Master HDD and the other the Slave HDD. If only one hard disk is connected, make this the Master HDD. (For connection of the Master and Slave HDD, refer to the operating instructions of the hard disk.)
   Pay attention to the following when choosing the connection position of the Master and Slave HDD.
   (1) When connecting two hard disks to IDE port 1, make the one on the left the Master and the one on the right the Slave, as seen from the front of the recorder. See Fig. 3.
   (2) When connecting three pairs of hard disks to IDE port 0, 2 and 3 (6 in total), make the top one the Master and the bottom one the Slave (see Figs. 3 and 5).

Master HDD of IDE port 1

Slave HDD of IDE port 1

HDD connected to IDE port 3

HDD connected to IDE port 0

HDD connected to IDE port 2
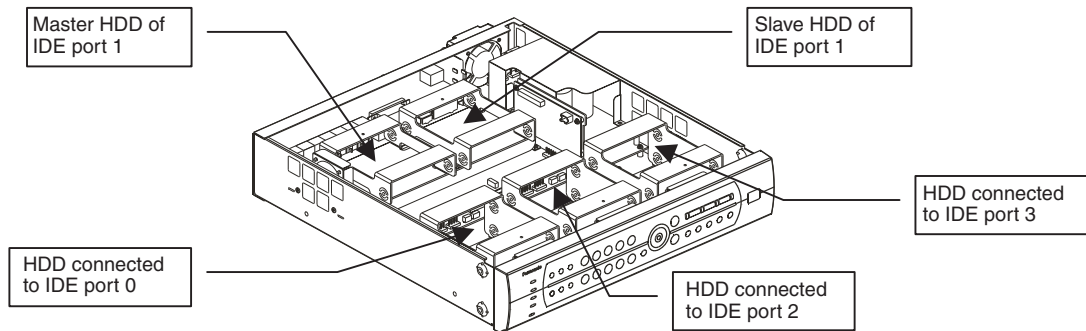
Fig. 3

Note: Port 0 was installed to the two disks installed model. Port 0 and 1 were installed to the four disks installed model.
(For the relation between hard disk positions refer to the figure above or the explanation on hard disk management on page 47.)

5. Insert the hard disk into the hard disk fixing frame.
   Fix it with four screws at the side of the frame. (Fig. 4, 5)

Master HDD

Slave HDD
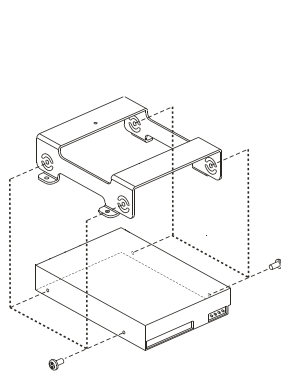
Fig. 4
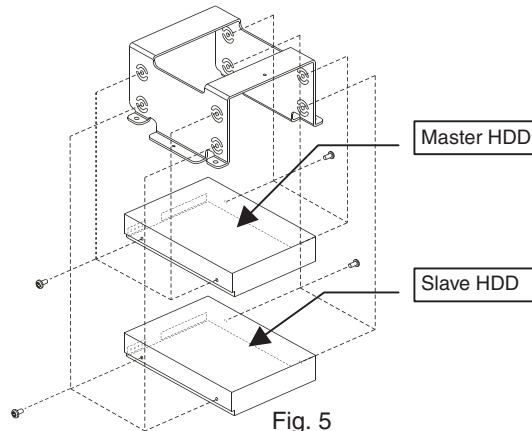
Fig. 5

6. Insert the hard disk fixing frame in the proper location inside the recorder and fix it with a screw (Fig. 6). (Be careful not to damage the fan connection terminal and hard disk cable.)

Fig. 6

Fig. 7

12
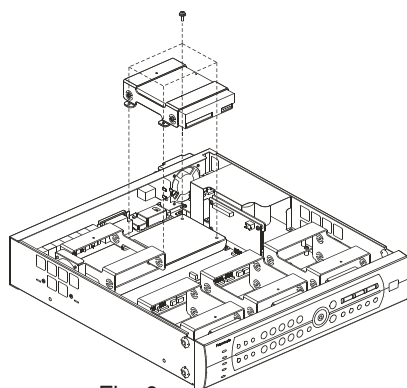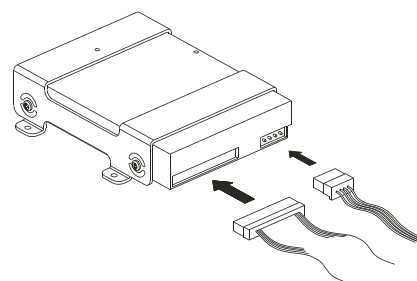
7. Connect the flat hard disk data cable and power cord (Fig. 7).
   Seen from the front of the recorder, the IDE interface is numbered 0, 1, 2, 3 from left to right. Connect the four power supply ports and four IDE data ports on the motherboard with the correspondingly numbered hard disk connectors.
   (For the relation between hard disk positions refer to the figure above or the explanation on hard disk management on page 47.)

8. Follow the same procedure to install other hard disks.
   Note: Up to eight hard disks can be installed.

9. Replace the top cover. (Refer to Fig. 1)

10. For formatting hard disks refer to page 47 of these Operating Instructions.

System Composition and Connections

The WJ-RT208 is used to connect cameras, microphones, monitors, VGA monitors, PCs, networks, cameras, external HDDs, and more. (According to the interface type, some devices cannot be connected.)

In regard to two types of system configurations and connections, a brief explanation is given below. In regard to more complicated system connections as well as the system connections not introduced in this Operating Instructions, refer all work related to the connection of this product to qualified service personnel or system installers.

<Basic System>

■ Example for Basic System Connections

● Basic Connection
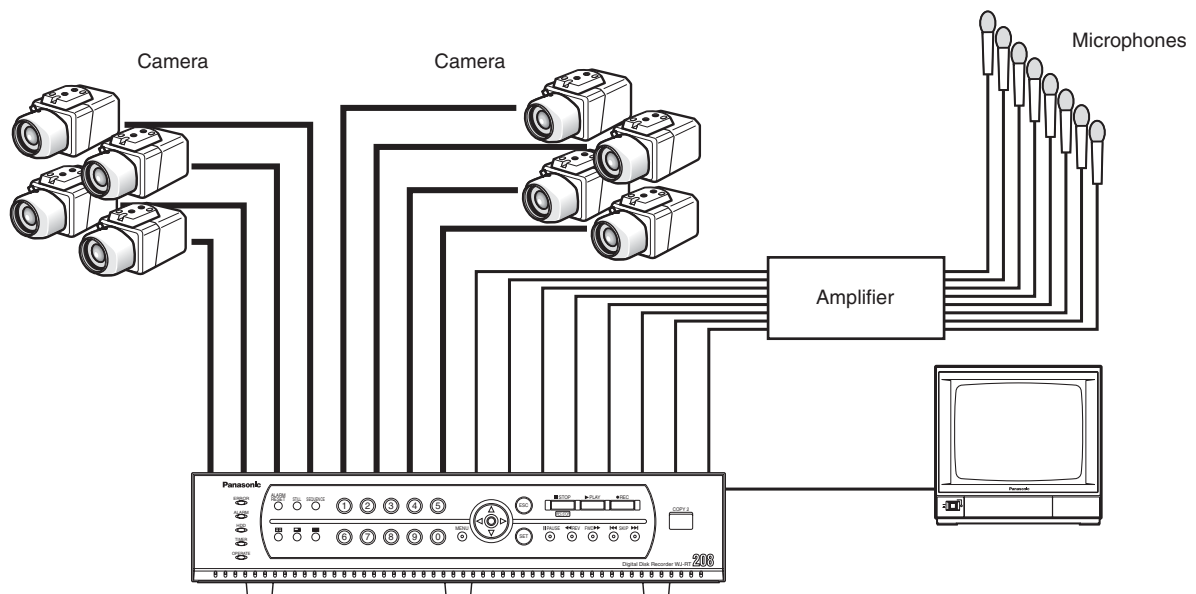
Cautions:
① Camera cable length (BNC) is a maximum of 500 m.
② The audio signals from a microphone are firstly amplified at the amplifier and then fed to the WJ-RT208.

● Connection with RS485 Camera

RS485 Camera

WJ-RT208

TERMINAL IN   RS485

| +12V | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | RB | RA | TB | TA |
| GND | GND | COM3 | NC3 | NO3 | COM2 | NC2 | NO2 | COM1 | NC1 | NO1 | GND | |

ALARM OUT

TERMINAL/CONTROL interface
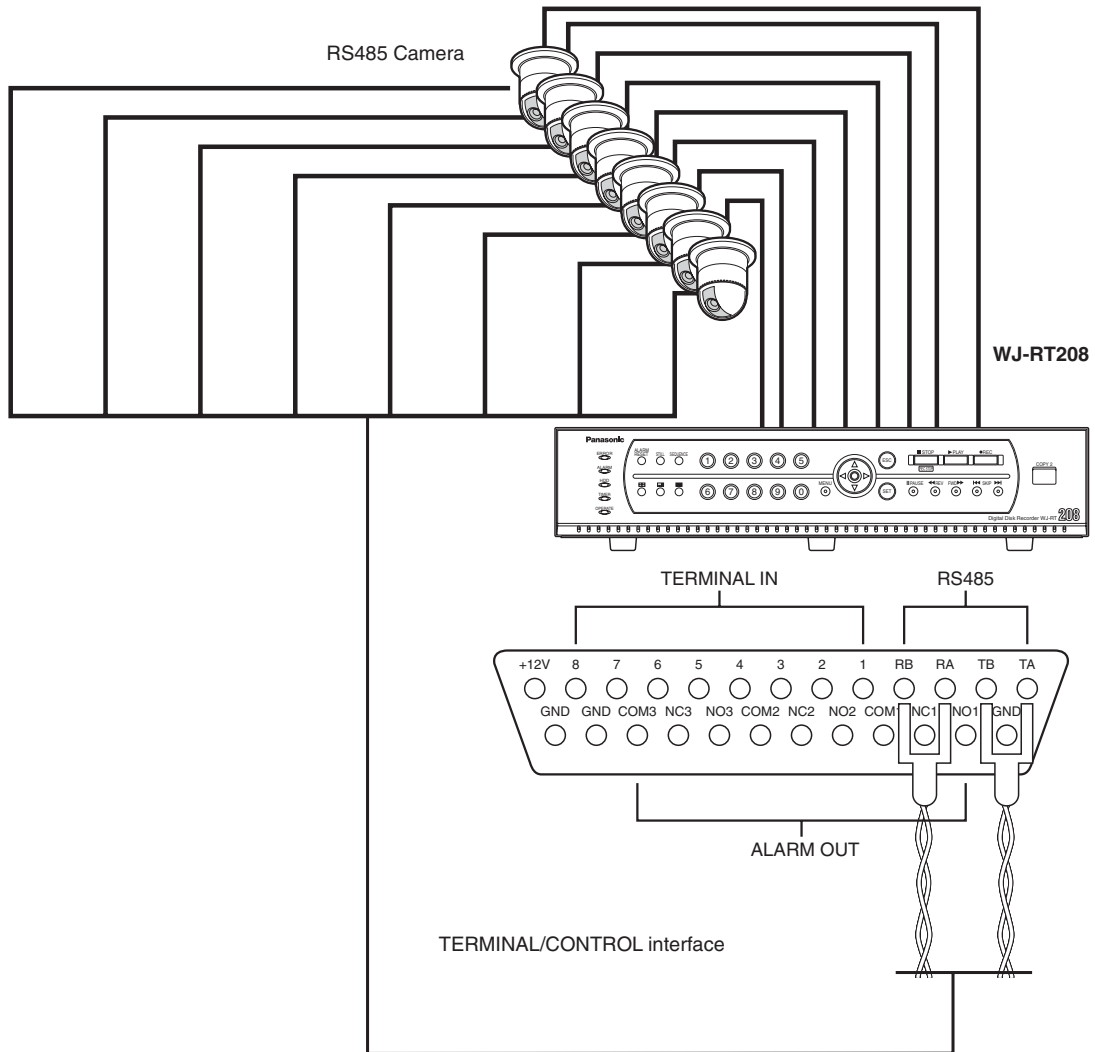
Cautions:
① Camera cable length (RS485) is a maximum of 1 200 m.
② Only the 4-pin RS485 signal cable can be used.

15

● **Connection with External HDD (For Data Backup)**

To COPY1 port   USB cable (Locally procured)

External HDD

External HDD

<Network System>
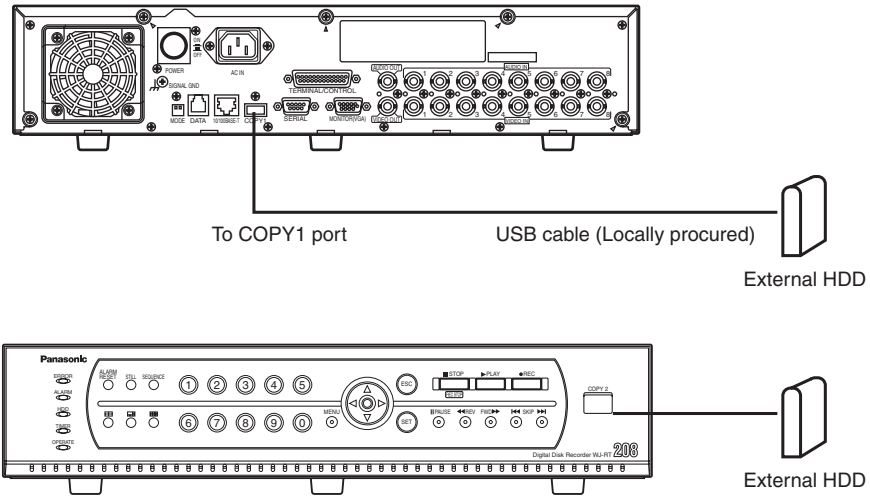
■ Example for Network System Connection

● Direct PC Connection

LAN cable (Not provided: 10Base-T/100Base-Tx, Category 5, Cross)

PC/AT Compatible

IP Address: 192.168.0.88
Subnet Mask: 255.255.255.0

IP Address: 192.168.0.x (except 0, 88 and 255)
Subnet Mask: 255.255.255.0
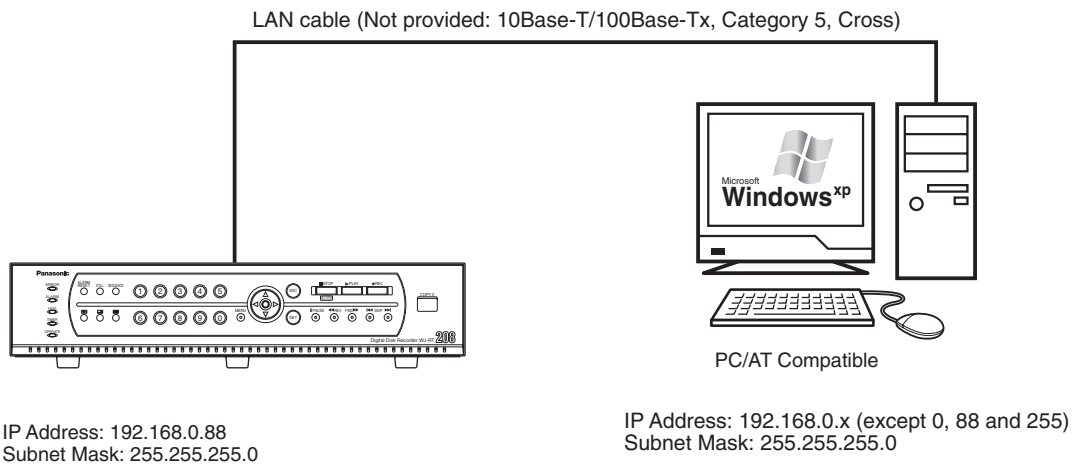
● **Connections with any Existing Network System**

IP Address: 192.168.0.88
Subnet Mask: 255.255.255.0
Gateway Address: 192.168.0.1

LAN cable
(Not provided: 10BASE-T/100BASE-Tx, Category 5, Straight)

HUB/Router

IP Address: 192.168.0.1
Subnet Mask: 255.255.255.0

LAN

PC/AT Compatible

IP Address: 192.168.0.x (x except 0, 1, 88, 255)
Subnet Mask: 255.255.255.0
Gateway Address: 192.168.0.1
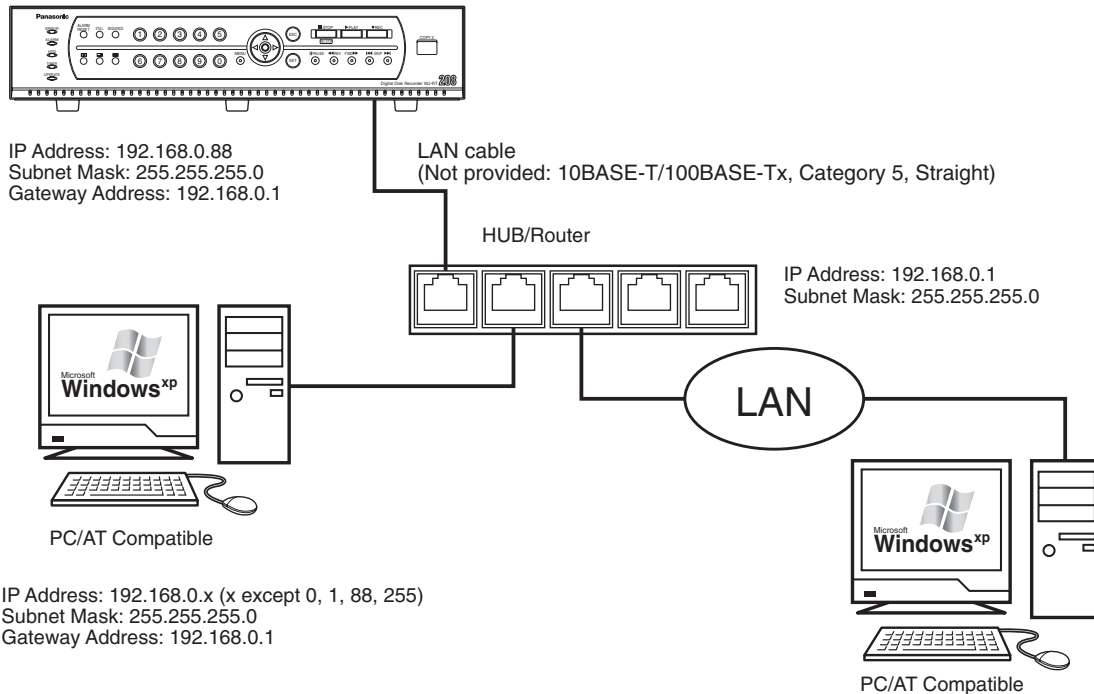
PC/AT Compatible

● **Connections with a Broadband WAN Network**

Server Port: 2000 (changeable)
Alarm Port: 4000 (changeable)

Broadband router A
Forward (WAN → DVR)
UDP Port: 9998 (fixed)
TCP Port: 2000 (depends on the recorder settings)

WAN

PC/AT Compatible

Broadband router B
Forward (WAN → PC)
UDP Port: 999 (fixed)
TCP Port: 4000 (depends on the recorder settings)
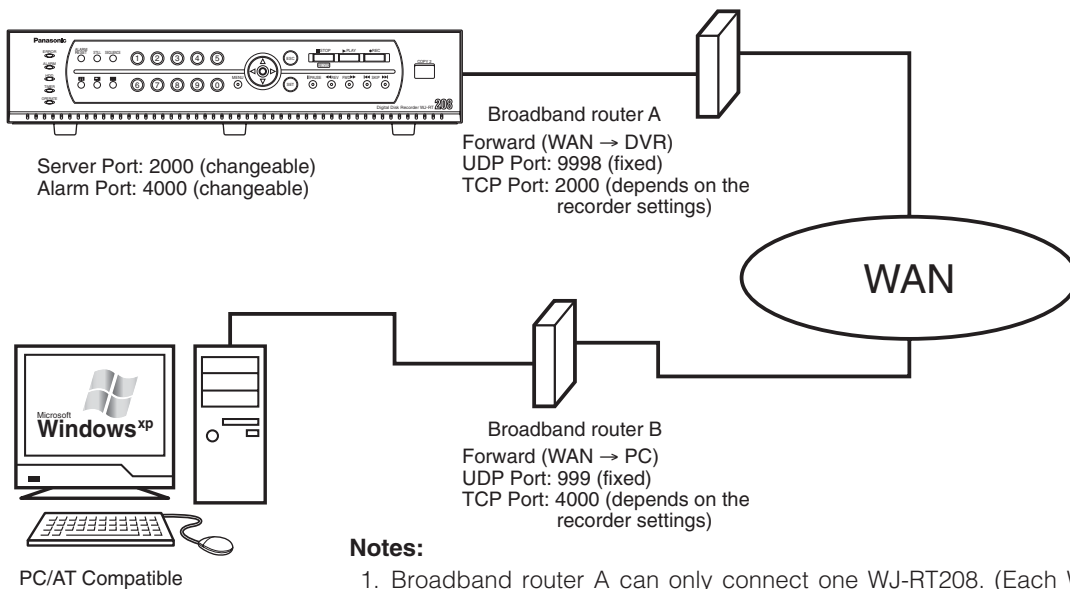
Notes:
1. Broadband router A can only connect one WJ-RT208. (Each WJ-RT208 should be assigned a Global IP address.)
2. Broadband router B can only connect one PC/AT compatible machine. (Each compatible machine should be assigned a global IP address.)

Caution: The number of clients that can be connected to each WJ-RT208 is defined in the next table. According to differences in the network communication protocol, the number of clients that can be connected can differ. In the next table, the number of clients that can be connected is defined for the TCP/UDP protocol and the MCAST protocol, independently of each other.

User type	TCP/UDP	MCAST
Manager	1 person	1 person
Remote monitoring	8 persons	Unlimited in the same subnet
Remote playback/net backup	1 person	1 person
Frame play	4 persons	Frame play not available
Remote talk	1 person	1 person

• Connection with PS·Data systems

This is an example of connection when the unit is used together with the PS·Data devices.
If a connected system controller is PS·Data compatible, it is possible to operate this unit or connected devices using the system controller.
Use the RS485 cable provided with the system controller.

Important:
- Terminate both devices on both ends of the connection. Refer to the respective operating instructions for the descriptions of how to terminate. Termination of this unit can be set with the DIP termination switch on the rear panel. (See page 21.)
- When connecting a PS·Data compatible device, it is necessary to set each item of "DATA PORT SETUP" of "COMMUNICATION SETUP" on the "WJ-RT208 SETUP MENU" according to the system configuration.
- The following are available PS·Data compatible devices.
    - System controller: WV-CU650
    - Matrix switcher: WJ-SX150
    - Data multiplex unit: WJ-MP204
    (Any other PS·Data compatible devices are not to be connected.)

When connecting a single unit with a controller

RS485 cable
(provided with the controller)

ON
Mode switch
1 2

Controller
Termination: ON
Unit address: 1

"WJ-RT208 SETUP MENU" → "COMMUNICATION SETUP" → "DATA PORT SETUP" → "Unit Address (System)": **1**

This unit
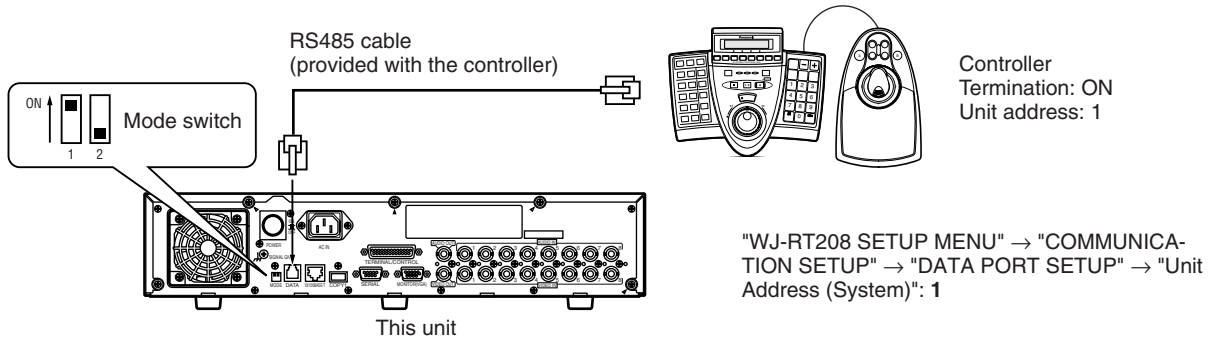
When connecting multiple units with a controller

RS485 cable
(provided with the controller)

Controller
Termination: ON
Unit address: 1

RS485 cable

1st unit (this unit)
Unit address
(system): 1

ON
Mode switch
1 2

RS485 cable

RS485 cable

2nd unit (this unit)
Unit address
(system): 2

ON
Mode switch
1 2

RS485 cable

3rd unit (this unit)
Unit address
(system): 3

ON
Mode switch
1 2
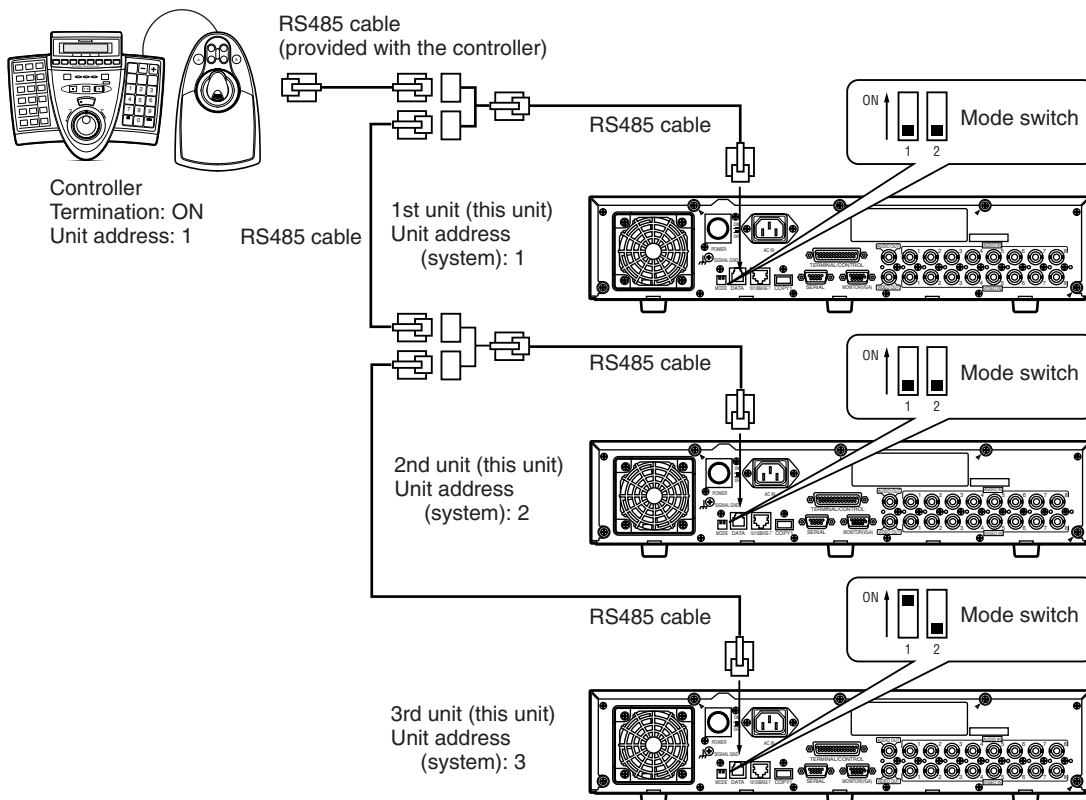
When controlling cameras with coaxial and PS·Data communication systems

■ **When using WJ-SX150**

System camera

Combination camera

Matrix switcher
Termination: ON
Unit address: 1 - 4

ON
Mode switch
1 2

BNC cable (option)

BNC cable (option)

Second unit
Unit address (system): 6

First unit (this unit)
Unit address (system): 5

ON
Mode switch
1 2

Controller
Termination: ON
Unit address: 1

RS485 cable

RS485 cable

RS485 cable

RS485 cable

RS485 cable

RS485 cable
(provided with the controller)

■ **When using WJ-MP204**

Combination cameras

Data multiplex unit
Termination: ON
Unit address: 3

ON
Mode switch
1 2

BNC cable (option)

BNC cable (option)

Second unit
Unit address (system): 2

First unit (this unit)
Unit address (system): 1

ON
Mode switch
1 2

Controller
Termination: ON
Unit address: 1

RS485 cable

RS485 cable

RS485 cable

RS485 cable

RS485 cable

RS485 cable
(provided with the controller)

19

■ RS485 Connection

A 25-pin connector is used to accept and supply control signals.

13　　　　　　　　　　　　1

25　TERMINAL/CONTROL　14

Internal block diagram

RA
RB

TA
TB
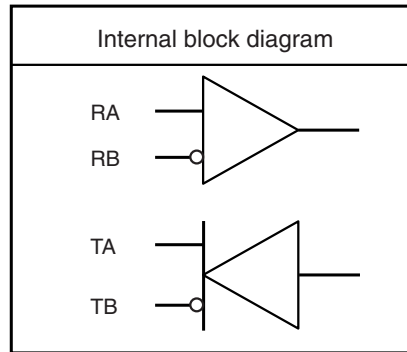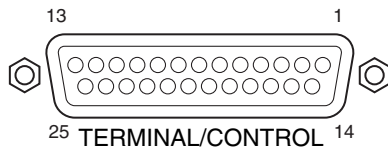
Pin No.	Signal	Operation	Remarks
1	TA	RS485 camera sending + data	
2	TB	RS485 camera sending – data	
3	RA	RS485 camera receiving + data	
4	RB	RS485 camera receiving – data	
5	Terminal input 1	When an alarm occurs in channels 1 – 8, the alarm signals are sent to the recorder through these ports.	The requirements of the alarm signal level are as follows: Low level: 0 V to 0.8 V High level: more than 3.3 V (max. 12 V) Pulse width: 2 s or more 3 s or less
6	Terminal input 2		
7	Terminal input 3		
8	Terminal input 4		
9	Terminal input 5		
10	Terminal input 6		
11	Terminal input 7		
12	Terminal input 8		
13	+12 V	+12 V voltage output	
14	Grounding		
15	Alarm Output 1 (N.O.)	Sends the alarm signal to external alarm unit 1.	① Relay output: max. 30 VDC, 1 A or 125 VAC, 0.3 A
16	Alarm Output 1 (N.C.)		
17	Alarm Output 1 (Common)		
18	Alarm Output 2 (N.O.)	Sends the alarm signal to external alarm unit 2.	
19	Alarm Output 2 (N.C.)		
20	Alarm Output 2 (Common)		
21	Alarm Output 3 (N.O.)	Sends the alarm signal to external alarm unit 3.	
22	Alarm Output 3 (N.C.)		
23	Alarm Output 3 (Common)		
24	Grounding		
25	Grounding		

■ DIP Switch Setting

When this unit is connected to any other system unit, it is necessary to set up the 2-bit DIP termination switches located on the back of this unit.

DIP termination switches:
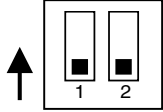
The dip switch positions are defined by the attribute of the unit connected to the system's DATA terminal.

Machine connected to the DATA port	Termination switch 1	Termination switch 2
Controller	ON	OFF

* Refer to the label in regard to setting the DIP termination switches on the rear panel.

Caution: Switch 2 of the DIP termination switch is not available.

Setup Procedures

1. Preparation

1.1 Turning the Power On

(1) Connect the AC power cord to the AC power connector on the rear panel.

(2) Turn on the power switch on the rear panel.
A hard disk detection screen appears on the monitor for a few seconds.
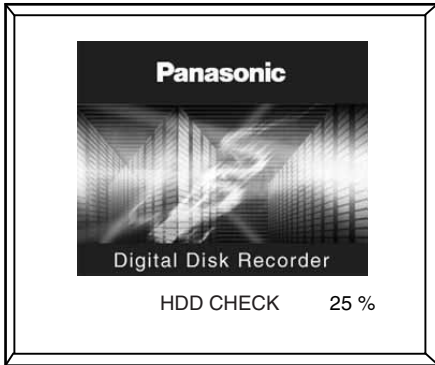
After that, a live monitoring screen of the camera is displayed.

1.2 User Registration

(1) When any button other than the camera selection button and the screen split button is pressed while the keyboard is locked (in the state of no log-in), a log-in box is displayed.

Input Password   x x x x x x
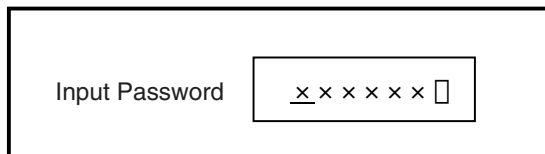
(2) Enter a password, and then press the [SET] button.
When log-in is successful, the indicator of the direction button lights up. (This indicator is not lit up if log-in has not yet been performed or has failed.)
In the case of failure in log-in, the system presents an error dialog box.
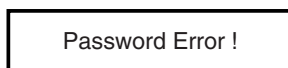
Password Error !

Press the [SET] button or the [ESC] button to close the error dialog box.

Note: The default passwords are set as below.
Manager: 888888
Operator: 88888
Viewer: 8888

To enhance security, set a new password before using this unit.
We recommend changing these passwords periodically.
The keyboard is automatically locked if any operation is not carried out by the preset time period of "Keylock Time" for "WJ-RT208 SETUP MENU" – "SYSTEM MANAGEMENT" – "SYSTEM SETUP".

1.3 Basic Operation of the Menu

Understand the free type structure of the menu before you open this menu.

```
                                          ①                              ②

   WJ-RT208 SETUP MENU           SYSTEM MANAGEMENT              PTZ SETUP                    REPORT

A  SYSTEM MANAGEMENT         SYSTEM SETUP                PTZ SELECT                  SYSTEM LOG
B  SEARCH                    DISK INFORMATION            PRESET INFORMATION          EVENT LOG
C  REC&EVENT SETUP       A   REBOOT SYSTEM          D                           G   OLDEST DATA INFORMATION
D  PTZ SETUP                 PICTURE ADJUST
E  CAMERA SETUP              TIME & DATE
F  COMMUNICATION SETUP       VERSION
G  REPORT
H  USER INFORMATION
I  DATA MANAGEMENT
                                                         CAMERA SETUP
                                                                                      USER INFORMATION
              SEARCH                                 Channel No.    1 ▲
                                                                                  USER LEVEL SETUP
       Channel No.    0                              CH Enable      On            ONLINE USER INFORMATION
   B   Start                                     E   Mask Area      Set       H   PASSWORD
                     2004-10-10 11:30:30                                          KEYLOCK
       End           2004-10-10 11:30:30             Mask Enable    Off

       Event Only    No                              PTZ Protocol   PANASONIC

             OK            Cancel                     Rec. Reserve   000    Days

                                                     Channel Name   CH1
             REC & EVENT                                                             DATA MANAGEMENT
                                                       All     OK     Cancel
       TIMER REC                                                                  FACTORY DEFAULT
       TERMINAL REC                                                              BACKUP
   C   VMD REC                          COMMUNICATION SETUP                    I
       RECORD LENGTH
       AUDIO SELECT                 NETWORK SETUP
                                    RS485 SETUP
                                F   DATA PORT SETUP


             ①                              ②
```
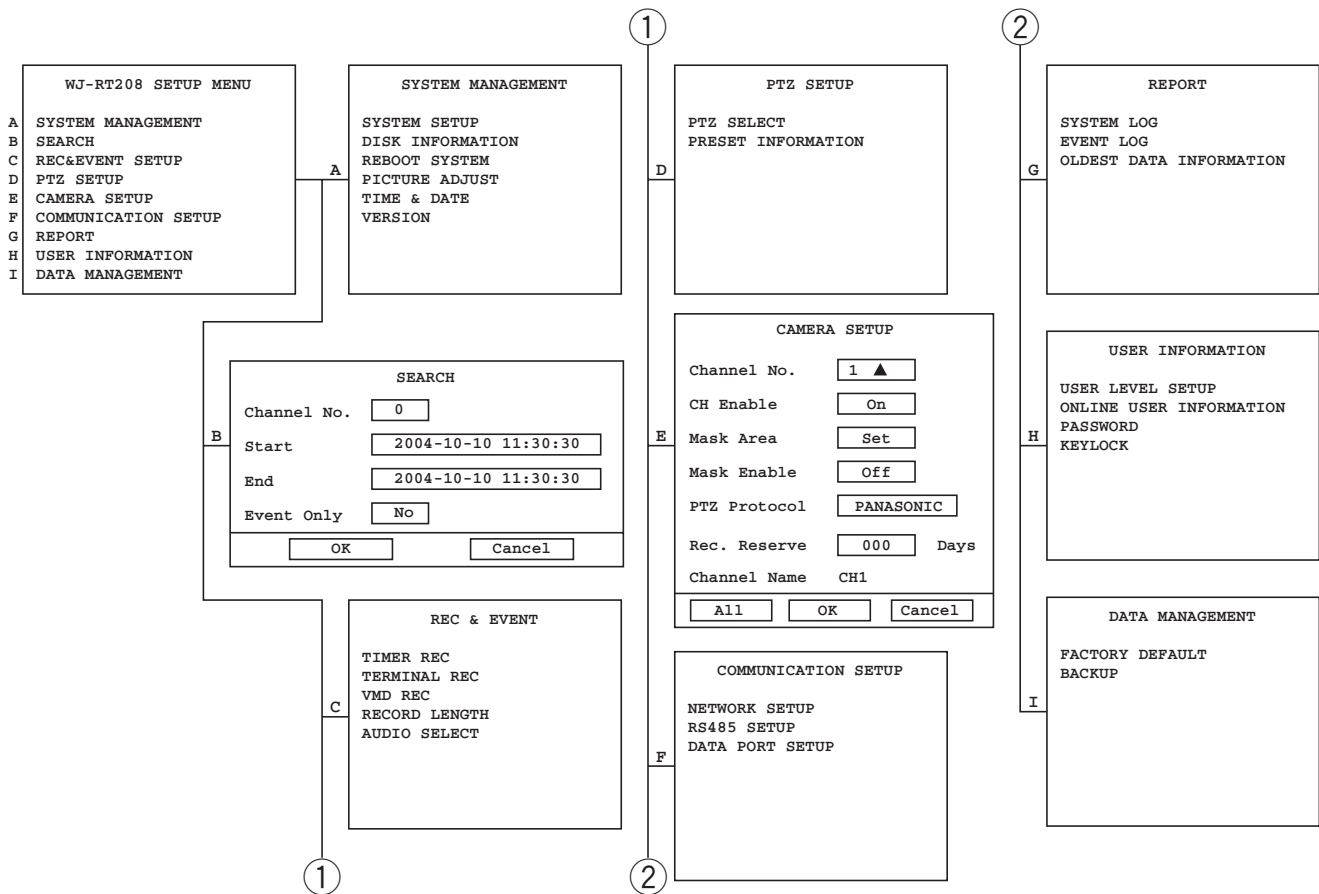
Press the [MENU] button. "WJ-RT208 SETUP MENU" appears.

```
    WJ-RT208 SETUP MENU

SYSTEM MANAGEMENT
SEARCH
REC&EVENT SETUP
PTZ SETUP
CAMERA SETUP
COMMUNICATION SETUP
REPORT
USER INFORMATION
DATA MANAGEMENT
```

Caution: No menu is displayed even if you try to press the [MENU] button in the camera control mode. First press the [SET] button several times and close the camera control mode.

Menu type

1. Main menu

   Direction button (up or down): Used to move the cursor up or down.

   [SET] button: Used to move the cursor to the next submenu or the setup dialog box.

   [ESC] button: Used to close the setup menu, and returns the screen to the live monitoring images.

2. Sub menu

   Direction button (up or down): Used to move the cursor up or down.

   [SET] button: Used to move the cursor to the setup dialog box.

   [ESC] button: Used to return the screen to the main menu.

Main menu	Submenu (Example)
WJ-RT208 SETUP MENU **SYSTEM MANAGEMENT** **SEARCH** **REC&EVENT SETUP** **PTZ SETUP** **CAMERA SETUP** **COMMUNICATION SETUP** **REPORT** **USER INFORMATION** **DATA MANAGEMENT**	**SYSTEM MANAGEMENT** **SYSTEM SETUP** **DISK INFORMATION** **REBOOT SYSTEM** **PICTURE ADJUST** **TIME & DATE** **VERSION**

3. Dialog

   Direction button (up or down): Used to move the cursor up or down.

   Direction button (right or left): Used to move the cursor in the setting box and to change the parameters.

   [SET] button: Used to save the settings, return to the previous menu, or move to the setup dialog box. (Move the cursor to [SET] and press the button.)

   [ESC] button: Used to clear the settings or return to the previous menu.

   [0] - [9] button: Used to enter numerical inputs.

Setup Dialog (Example)

SYSTEM SETUP

Power On Rec.	Off	Seq. Dwell	05	Sec
Video Format	NTSC	Overwrite	On	
Status Display	All	Keylock Time	600	Sec
Keylock Buzz	On	Alarm Buzz	Off	
Pre Recording	Off	Rec. Quality	Normal	
I Frame Inter.	04	Resolution	800x600	
Alarm Spot	Off	Stream Type	CBR	
Terminal Input	N.O.	Frame Rate	Full	

OK   Cancel

24

1.4 Modification of the System Time

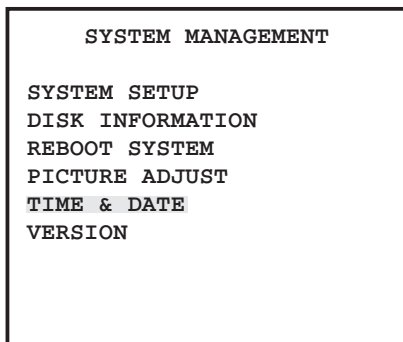When this unit is used for the first time, set up the system time with the procedures specified below. This system time should be checked periodically. If it seems to be incorrect, readjustments are needed.

(1) Click the [MENU] button to display the setting menu.

```
        WJ-RT208 SETUP MENU

    SYSTEM MANAGEMENT
    SEARCH
    REC&EVENT SETUP
    PTZ SETUP
    CAMERA SETUP
    COMMUNICATION SETUP
    REPORT
    USER INFORMATION
    DATA MANAGEMENT
```
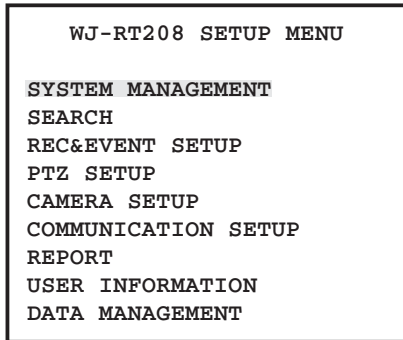
(2) Move the cursor to "SYSTEM MANAGEMENT" and press the [SET] button.
The "SYSTEM MANAGEMENT" menu appears.

```
        SYSTEM MANAGEMENT

    SYSTEM SETUP
    DISK INFORMATION
    REBOOT SYSTEM
    PICTURE ADJUST
    TIME & DATE
    VERSION
```

(3) Move the cursor to "TIME & DATE" and press the [SET] button.
"TIME & DATE" menu appears.

```
        TIME & DATE

    YYYY-MM-DD  HH:MM:SS

    2005-01-28  10:43:38

      OK          Cancel
```
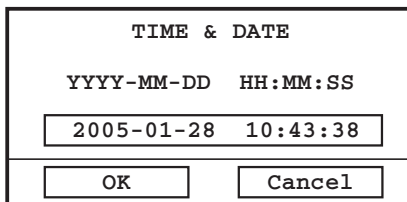
Move the cursor to the correcting position.

(4) Enter the local time by using Buttons [0] - [9].

(5) Move the cursor to [OK] and press the [SET] button.

(6) End of setting
When the [ESC] button is pressed several times, the screen returns to the previous menu "SYSTEM MANAGEMENT".

Note: If time is corrected in the middle of recording, part of the recorded data may fail to be played. This is because some turbulence can arise in the record start time and the end time.

1.5 Turning the Power Off

The power supply for this unit cannot be turned off if hard disk data are being played or data are being recorded on the hard disk. Operation for playback or recording has to be stopped first. Turn off the power supply after confirming that the HDD indicator of the front panel is not lit.

(1) Stop the manual recording.
• Select the desired image to be stopped by using the camera selection button (1 - 8) or the direction button (up/down).
Hold down the [STOP] button for 2 seconds.
The Record indicator of the numerical keys goes off and recording is stopped.
• For timer recording, alarm recording, or motion detector recording, set up "On" or "Off" for each one with "WJ-RT208 SETUP MENU" – "REC&EVENT SETUP", and then stop recording in the above procedures.

(2) Stop playback.
• Select channel 1 by using the camera selection button (1 - 8) or the direction button (up/down), and press the [STOP] button. Playback is stopped.

(3) Turn off the power switch on the rear panel.
• Turn off the power supply after confirming that the HDD indicator of the front panel is not lit.
• Check the [OPERATE] indicator. If this indicator is not lit, the power supply has been turned off.
Note: If this unit is not used for a long time, pull out the power cord from the power connector.

2. Operation

2.1 Screen Operation

2.1.1 Spot display

If you want to display only one screen of a specified channel, press the channel number.
Images from the selected camera channel will be displayed with a spot display.

Note: In the case of a 6-split screen, the screen of the selected channel is displayed in the top left area (the largest area of the 6-split areas). No display is presented on the spot screen.

If you want to have a display on the spot screen, changeover to the multi screen display and select the 4-split or 9-split mode. Then press the channel number.

2.1.2 Multiscreen display

4-split screen: Press the 4-split screen button.
Each time the 4-split button is pressed, the screens of channels 1 - 4 or 5 - 8 are reciprocally displayed.
6-split screen: Press the 6-split screen button.
9-split screen: Press the 9-split screen button.

2.1.3 Sequence display

The sequential display will start by pressing the [SEQUENCE] button.
The icon ⬚ is displayed in the lower part of the screen.
Press the [SEQUENCE] button again. The sequential display stops.

2.1.4 Mute

(1) Press the [ESC] button to activate the mute function.
The mute icon 🔇 is displayed in the upper part of the screen.
(2) Press the [ESC] button again.
The mute function is cancelled.
Caution: If the mute function is in operation, all channels are muted. It is impossible to mute specific channel(s) with this setting.
This is the same when the mute function is in operation during playback.

2.1.5 Still display

The presently displayed screen becomes still.
(1) Select the desired channel to be still by using the camera selection button (1 - 8) or the direction button (up/down).
The image frame of the selected channel blinks.
(2) Press the [STILL] button.
The selected channel screen becomes still and the still icon ⑤ is displayed in a lower part of the screen.
Caution: It is impossible to make the screen stand still during playback.

2.2 Manual Recording

(1) Select the desired channel to be recorded by using the camera selection button (1 - 8) or the direction button (up/down).
(2) Press the [REC] button.
The indicator of the corresponding camera button is lit and recording is started.
The recording icon ● is displayed on the selected channel.
(3) Select the desired channel to be stopped by using the camera selection button (1 - 8) or the direction button (up/down) to stop the recording.
Hold down the [STOP] button for 2 seconds.
The indicator of the corresponding camera button is unlit and recording is stopped. At the same time, the record icon also disappears.
Note: When the [REC] button is pressed while in the camera control mode, recording will not be performed.
To perform recording, press the [REC] button after releasing the camera control mode.

2.3 Playback of Recorded Image

2.3.1 Basic operation

(1) Select the desired channel to be played back by using the camera selection button (1 - 8) or the direction button (up/down).
(2) Press the [PLAY] button.
Playback images are displayed on a single screen.
The playback icon ▣▣ is displayed during playback.

Notes:
1. The playback screen is displayed only for channel 1.
Live image monitoring for a channel other than channel 1 or screen splitting can even be carried out during playback.
2. If the recording time is extremely short or the background is very dark, data may fail to be recorded or played. In such a case, the recording file is lowered to 16 KB or below.
3. It is impossible to play the same recorded image simultaneously by two users or more.
4. When playing recorded images for many hours, images may not be played smoothly or may be paused sometimes. In this case, stop playback once, and then resume playback.
5. When displaying images on a 6-split screen, press the [PLAY] button after selecting the desired channel to be played. The playback images will always be displayed at the upper left corner of the screen.
6. When there are 5 000 records or more for the channel to be played, the latest 5 000 records will be subject to be played.
To play recorded images other than the latest 5 000 records, search for the desired record and play it (3.2 Search and Playback).
Playback will stop when the date changes (0:00).
(3) Select the channel 1 by using the camera selection button 1 or the direction button (up/down) to stop the playback, and press the [STOP] button.

The playback is stopped, and live monitoring images are displayed on the channel 1 screen.
The playback icon also disappears.

Note: If you keep pressing the [STOP] button for 2 seconds or more when you want to stop playback of channel 1, recording of channel 1 is also stopped.

2.3.2 Playback the record

(1) FWD/REV playback

Press the [FWD] button, [REV] button, or direction button (left/right) during playback.
Each time one of these buttons is pressed, the FWD/REV speed is changed.
The playback speed is displayed in the status display area in the upper left of the screen.
>>, >>>>, >>>>>>: Fast-forward playback
<<, <<<<, <<<<<<: Fast-rewind playback
When the [PLAY] button is pressed, playback is performed at a regular speed.

Note: The FWD and REV speeds are set up with "I Frame Inter." and "Frame Rate" of the "WJ-RT208 SETUP MENU" – "SYSTEM MANAGEMENT" – "SYSTEM SETUP" menu.

> **Method of calculation:**
> (>>,<<) = "I Frame Inter." x denominator of "Frame Rate"
> (>>>>,<<<<) = "I Frame Inter." x denominator of "Frame Rate" x 2
> (>>>>>>,<<<<<<) = "I Frame Inter." x denominator of "Frame Rate" x 4
> **Example 1:** When "4" is set for "I Frame Inter." and "Full" is set for "Frame Rate":
> >>, <<: approx. 4-fold, >>>>,<<<<: approx. 8-fold, >>>>>>,<<<<<<: approx. 16-fold
> **Example 2:** When "4" is set for "I Frame Inter." and "1/2F" is set for "Frame Rate":
> >>, <<: approx. 8-fold, >>>>,<<<<: approx. 16-fold, >>>>>>,<<<<<<: approx. 32-fold

(2) SKIP playback

When the ◄◄/►► button is pressed during playback, the image skips to the previous one or the later one and playback starts from the beginning.

(3) Playback/pause

When the [PAUSE] button is pressed, playback will be paused. When the [PAUSE] button is pressed again, ordinary playback starts again.

Note: When the [STILL] button is pressed, it is impossible to pause playback.

(4) Step playback

When the [PLAY] button or the direction button (right) is pressed, in the middle of a pause, playback of a single frame continues.
When the [PAUSE] button is pressed again, ordinary playback starts again.

(5) Slow playback

When the [PLAY] button is pressed during playback, slow playback starts. The speed of slow playback is half that of ordinary playback.

2.4 Operations for Events

2.4.1 Event type

Terminal Alarm: An event input to be entered from a sensor to the TERMINAL port of this unit.
Motion Detection: An event to sense and record the movement of an object with the aid of the motion detector function (refer to Cautions below).

Cautions:
1. The external alarm input or the motion detector alarm input is a signal to start recording. If an alarm arises during recording, recording is just continued.
2. When the motion detector function senses the movement of an object, the sensor generates a signal output by sensing the variation in brightness.

Video Loss: Loss of a video signal caused as a result of camera signal cable disconnection or camera malfunction.

2.4.2 Action at an event

When an event occurs, this unit identifies the event and an alarm action is taken according to the setup conditions.

- When an event occurs, the [ALARM] indicator blinks. The indicator is simultaneously lit up when automatic resetting has been activated.

  Caution: Automatic resetting is set up so that an alarm action is automatically finished after the lapse of a specified time after the event occurs. This time setting is made with the menu shown below.
  "WJ-RT208 SETUP MENU" - "REC & EVENT" - "TERMINAL REC" - "Alarm Time"
  "WJ-RT208 SETUP MENU" - "REC & EVENT" - "VMD REC" - "Alarm Output"
  After the automatic resetting function is effective, the system returns to the status before the alarm went off.
  When the [ALARM RESET] button is pressed, the [ALARM] indicator goes out.

- Time and contents of an event are recorded in "WJ-RT208 SETUP MENU" – "REPORT" – "EVENT LOG".

- Event state of the specified channel will be displayed.

  Caution: During an external or motion detector alarm, each relevant icon is displayed as shown below.
  The external alarm icon is displayed with the ⛨ mark and the motion detector alarm icon with the ⊹ mark.
  If the video signals are lost, "NO SIGNAL" is displayed in the position for channel name.

• When an event occurs, the monitoring images of its channel are displayed in the spot screen.
The spot screen is set up with the menu specified below.
"WJ-RT208 SETUP MENU" - "SYSTEM MANAGEMENT" - "SYSTEM SETUP" - "Alarm Spot" - "On"

• Recording when an event occurs
When there is an alarm, recording is automatically carried out during the setup time. In the state of Video Loss, no recording is carried out. This time setting is made with the menu shown below.
"WJ-RT208 SETUP MENU" - "REC & EVENT" - "TERMINAL REC" and "WJ-RT208 SETUP MENU" - "REC & EVENT" - VMD REC" - "Period1" or "Period2" - "On"

• Buzzer
The [ALARM] indicator blinks when an alarm is activated, and this buzzer sounds.
The buzzer is set up with the menu specified below.
"WJ-RT208 SETUP MENU] - "SYSTEM MANAGEMENT" - "SYSTEM SETUP" - "Alarm Buzz" - "On"

• An alarm signal output is generated from the TERMINAL/CONTROL port of the rear panel to the port of the preset number. The [ALARM] indicator blinks. The output port number of Alarm Output is set up with the menu specified below.
"WJ-RT208 SETUP MENU" - "REC & EVENT" - "TERMINAL REC" - "Alarm Output" and "WJ-RT208 SETUP MENU" - "REC & EVENT" - "VMD REC" - "Alarm Output"

• Camera turning direction preset position
The camera preset position is set up with the menu specified below.
"WJ-RT208 SETUP MENU" - "REC & EVENT" - "TERMINAL REC" - "VMD REC" - "PTZ Preset" or "WJ-RT208 SETUP MENU" - "REC & EVENT" - "VMD REC" - "PTZ Preset"
In regard to camera's preset position setup, refer to "2.5.6 Register preset position of cameras" on page 30.

Notes:
1. This recorder is designed to start recording upon terminal input or on motion detection. When an alarm occurs in the process of recording images from the channel for which "TERMINAL REC" and "VMD REC" are set, only alarm actions such as event recording or event status display will be performed. Image quality for recording (Rec. Quality), frame rate and stream type will not automatically be changed.
2. If another alarm occurs again in the same channel within the time period that has been preset with "Alarm Time", the alarm is stopped after the lapse of the preset time period. (The alarm time period is not extended.)

3. Even though an alarm occurs, no automatic recording is carried out unless "Period1" or "Period2" of "TERMINAL REC" and "VMD REC" has been set at "On".
4. Information about external alarms is directly sent to the PC through the network. It has no relation to the "TERMINAL REC" and "VMD REC" setting at the recorder. Please refer to <<Network Operating Instructions.pdf>> on the CD-ROM.
5. When "Full" is selected for "Frame Rate", performing playback, recording of all channels and transmission of all channels of Net Client in parallel for many hours may stop image processing. In this case, recording will be continued, though few frames may be dropped.

2.4.3 Cancellation of alarm

When the [ALARM RESET] button is pressed, the alarm is cancelled. The [ALARM] indicator goes off.
Notes:
1. Recording is continued even though this alarm is cancelled.
2. The alarm cannot be cancelled while a menu is displayed.
Close the menu, and then press the [ALARM RESET] button to cancel the alarm.

2.5 Camera Control

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears.

```
      WJ-RT208 SETUP MENU

SYSTEM MANAGEMENT
SEARCH
REC&EVENT SETUP
PTZ SETUP
CAMERA SETUP
COMMUNICATION SETUP
REPORT
USER INFORMATION
DATA MANAGEMENT
```
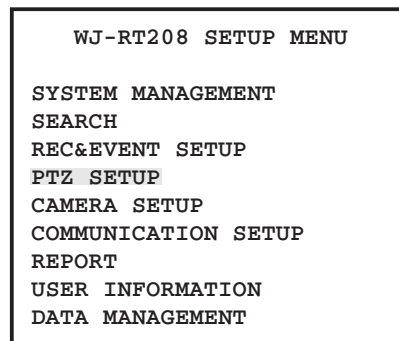
(2) Move the cursor to "PTZ SETUP" and press the [SET] button.
The "PTZ SETUP" menu appears.

```
             PTZ SETUP

PTZ SELECT
PRESET INFORMATION
```
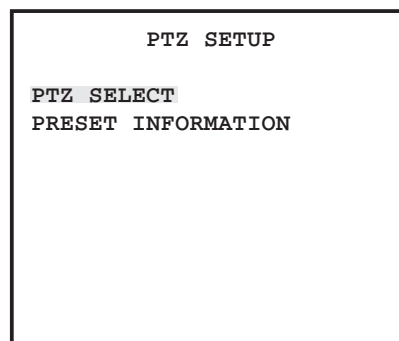
(3) Move the cursor to "PTZ SELECT" and press the [SET] button.

```
┌──────────────────────────────────────┐
│             PTZ SELECT               │
│                                      │
│  ⬤ Cam1   ◯ Cam2   ◯ Cam3   ◯ Cam4  │
│  ◯ Cam5   ◯ Cam6   ◯ Cam7   ◯ Cam8  │
│     ┌──────────┐    ┌──────────┐     │
│     │    OK    │    │  Cancel  │     │
│     └──────────┘    └──────────┘     │
└──────────────────────────────────────┘
```

Move the cursor to the desired channel by using the direction buttons (up/down). Select the channel by using the direction buttons (right/left).

In the above figure, "Cam1" is selected in the "PTZ SELECT" menu. No other camera are selected in other channels.

(4) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears. Refer to step (1).

(5) Move the cursor to "CAMERA SETUP" and press the [SET] button.

The "CAMERA SETUP" menu appears. Select "PTZ Protocol".

When using the Panasonic's camera, select "PANASONIC" using the direction buttons (left/right).

In other cases, refer to the relevant instruction manual for that camera.

```
┌──────────────────────────────────────┐
│             CAMERA SETUP             │
│                                      │
│  Channel No.      ┌─────────┐        │
│                   │  1  ▲   │        │
│                   └─────────┘        │
│  CH Enable        ┌─────────┐        │
│                   │   On    │        │
│                   └─────────┘        │
│  Mask Area        ┌─────────┐        │
│                   │   Set   │        │
│                   └─────────┘        │
│  Mask Enable      ┌─────────┐        │
│                   │   Off   │        │
│                   └─────────┘        │
│  PTZ Protocol   ┌───────────┐        │
│                 │ PANASONIC │        │
│                 └───────────┘        │
│  Rec. Reserve     ┌─────────┐        │
│                   │   000   │  Days  │
│                   └─────────┘        │
│  Channel Name    CH1                 │
│   ┌────────┐  ┌──────┐  ┌──────────┐ │
│   │  All   │  │  OK  │  │  Cancel  │ │
│   └────────┘  └──────┘  └──────────┘ │
└──────────────────────────────────────┘
```

(6) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears. Refer to step (1).

(7) Move the cursor to "COMMUNICATION SETUP" and press the [SET] button. Then move the cursor to "RS485 SETUP" and press the [SET] button.

```
┌──────────────────────────────────────┐
│             RS485 SETUP              │
│                                      │
│  Baud Rate      ┌─────────┐          │
│                 │  19200  │          │
│                 └─────────┘          │
│  Data Bit           8                │
│                                      │
│  Parity           None               │
│                                      │
│  Stop Bit           1                │
│   ┌──────────┐    ┌──────────┐       │
│   │    OK    │    │  Cancel  │       │
│   └──────────┘    └──────────┘       │
└──────────────────────────────────────┘
```

Note: When the Panasonic's camera is used, make settings of the respective parameters according to the above-mentioned procedures. In other cases, refer to the relevant operating instructions.

Caution: In order to maintain normal communication between this unit and the cameras, it is necessary to have completely correct settings for "PTZ SELECT", "PTZ Protocol", and "RS485 SETUP".

The camera control mode comes in three types. Each time the [SET] button is pressed in the state of monitoring, the mode changes. The related icon is displayed in a lower area of the screen.
- Pan/tilt control mode ⊕
- Zoom/focus mode ⊡
- Iris control mode ◉

Note: For some types of cameras, some controls many not function. Refer to the relevant operating instructions of the camera and confirm whether this unit is enabled to support controls and connections.

2.5.1 Panning/Tilting

(1) Select the desired channel by using the direction button or numeric button. The image frame of the selected channel blinks.

Select the pan/tilt control mode by pressing the [SET] button once.

The camera pan/tilt control icon ⊕ is displayed on the screen of the selected channel.

(2) Press the direction button and turn the camera in the proper direction.

Note:
In the pan/tilt control mode, two external units can be connected to the cameras.

When the camera select button [1] is pressed, External Unit 1 is set to ON.

When the camera select button [2] is pressed, External Unit 2 is set to ON.

When the camera select button [6] is pressed, External Unit 1 is set to OFF.

When the camera select button [7] is pressed, External Unit 2 is set to OFF.

(3) Press the [SET] button 3 times to close the pan/tilt control mode.

2.5.2 Auto function (Auto Pan, etc.)

(1) Select the pan/tilt control mode by pressing the [SET] button once.

The camera pan/tilt control icon ⊕ is displayed on the screen of the selected channel.

(2) Start the auto function by pressing the [PLAY] button.

Note: Refer to the Operating Instructions of the camera for descriptions of the auto function.

29

2.5.3 Zoom

(1) Select the zoom/focus mode by pressing the [SET] button twice.
The zoom/focus icon ⊡ is displayed on the screen of the selected channel.
(2) Press the direction button (up or down) to control the camera's zoom.
(3) Press the [SET] button twice. The zoom/focus mode is cancelled.

2.5.4 Focus

(1) Select the zoom/focus mode by pressing the [SET] button twice.
The zoom/focus icon ⊡ is displayed on the screen of the selected channel.
(2) Adjust the focus by pressing direction buttons (right/left).
(3) Press the [SET] button twice. The zoom/focus mode is canceled.

2.5.5 Iris

(1) Select the iris control mode by pressing the [SET] button 3 times.
The iris control icon ⚙ is displayed on the screen of the selected channel.
(2) Adjust the iris by pressing direction buttons (right/left).
(3) Cancel the iris control mode by pressing the [SET] button once.

2.5.6 To register preset position of cameras

(1) Press the [SET] button 1 - 3 times to select the required camera control mode.
An icon is displayed on the screen of that channel, according to the selected camera control mode.
(2) Press the [REC] button to display the Register Preset Position window.

```
┌──────────────────────────────┐
│        PRESET REGIST         │
│                              │
│                              │
│  Preset Number    ┌─────┐   │
│                   │ 001 │   │
│                   └─────┘   │
│  ┌────────┐      ┌────────┐ │
│  │   OK   │      │ Cancel │ │
│  └────────┘      └────────┘ │
└──────────────────────────────┘
```

Enter the desired preset position number, and then press the [SET] button or click the [OK] button after pressing the [SET] button.

Notes:
1. Refer to descriptions about "PRESET INFORMATION" ("WJ-RT208 SETUP" – "PTZ SETUP" – "PRESET INFORMATION") for the settings of preset positions of cameras.
2. Up to 256 preset positions can be registered.
3. When setting preset positions for Panasonic cameras, the indication "MEMORY" will be displayed at the center of the screen by pressing the [SET] button. If the indication is not displayed, the camera is not recognized.

2.5.7 To move a camera to the home position

(1) Press the [SET] button once to select the required camera control mode.
An icon is displayed on the screen of that channel, according to the selected camera control mode.
(2) The camera returns to the home position by pressing the [STOP] button.

Notes:
1. For the settings of the camera home position, refer to the operating instructions for the camera.
2. If the camera is not a Panasonic, the present position is saved as an origin, in principle, if the [STILL] button is pressed in the camera control mode. For some cameras, however, this setup may fail. Refer to the operating instructions for the camera for details.

2.5.8 To display the camera setting menu

Prior to controlling the camera that has been connected to this unit, perform the settings for this camera, without fail, according to the "CAMERA SETUP" menu for this unit.
The contents, operating method, and other items of the "CAMERA SETUP" menu can differ according to the camera being used. Refer to the operating instructions for the camera for details.

(1) Select the desired camera by using the camera selection button (1 - 8) or the direction button (up/down) during the live monitoring screen.
The image frame of the selected channel (camera) blinks.
(2) Select the pan/tilt control mode by pressing the [SET] button once.
The camera pan/tilt control icon ✛ is displayed on the screen of the selected channel.
(3) Press the [MENU] button.
The setup menu of the corresponding camera is displayed on the screen of the selected channel. In addition, the camera menu icon ▦ is displayed on the right of the pan/tilt control icon.
The camera setup buttons are specified as follows:
Cursor movement: up or down of the direction button
Preset value amendment: right or left of the direction button
[SET] button to open the next menu after defining the preset value. [SET] button
Return to the previous menu. [ESC] button

(4) After completing the settings, press the [MENU] button again to close the camera setup menu.

> **Caution:** When displaying the Special Menu, move the cursor to "SPECIAL" on the camera setup menu and press the camera selection button [2].
> When returning the camera settings to the default settings, move the cursor to "CAMERA RESET" and press the camera selection button [3].
> Press the [ESC] button to move from the Special menu back to the previous menu.

2.6 Control this Unit with a PC

When this unit is connected to a network, it is possible to operate and set up this unit with the software on the accessory disc.

In this case, outlined explanations will be given about the functions available and requirements for the computer configuration.

For details about each function, refer to the Network Operating Instructions on the accessory disc.

2.6.1 Outlined functions

- Display of live monitoring screen and recording
- Playback and downloading of the recorded data
- Setup of this unit
- Event notification (Alarm)
- Automatic time and date adjustment

2.6.2 Computer configuration

A computer with the configuration specified below is recommended. If a computer other than the recommended one is used, some problems may arise including software not starting, delayed screen display, and operation failures.

Notes:
* If the Graphic Memory is not over 32 MB, only a maximum of four channels can be connected to the NetClient.
* The NetClient cannot be started unless the display driver overlay is applied.
* For some display driver versions, the NetClient may fail to start normally. In this case, update the display driver to the latest version.

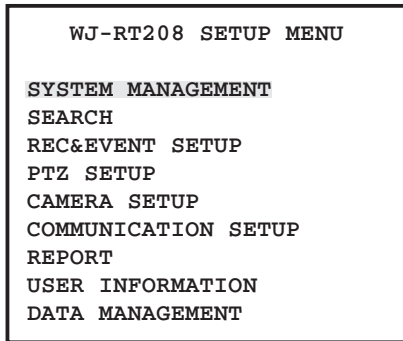|	
OS	Microsoft Windows 2000 Professional SP4 Microsoft Windows XP Professional or Edition SP2
PC	IBM PC/AT Compatible
CPU	Intel Pentium 4, 2.4 GHz or faster
Main Memory	DDR 512 MB
Graphic Memory	Independent larger than 64 MB
Display Driver	Overlay supported
Interface	100 MB network interface card built-in
Monitor	Resolution: better than 1024 x 768, 24 bit true color
Others	Direct X 8.0a or later

3. Setup

Setup Menu List

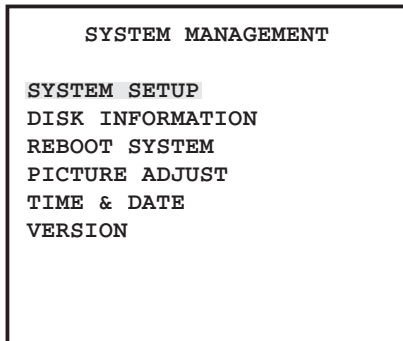| Setting Item	Description
"SYSTEM MANAGEMENT"	
"SYSTEM SETUP"	Basic operation settings of this unit
"DISK INFORMATION"	HDD information and initialization
"REBOOT SYSTEM"	Restart of this unit
"PICTURE ADJUST"	Screen adjustment of each channel
"TIME & DATE"	Time and date setting
"VERSION"	Version confirmation of the software
"SEARCH"	Recording data check and playback
"REC & EVENT SETUP"	
"TIMER REC"	Timer recording settings of each channel
"TERMINAL REC"	Terminal recording settings of each channel
"VMD REC"	Motion detector recording settings of each channel
"RECORD LENGTH"	Partial length of recording
"AUDIO SELECT"	Selection of the presence of audio
"PTZ SETUP"	
"PTZ SELECT"	PTZ selection
"PRESET INFORMATION"	PTZ preset position check
"CAMERA SETUP"	Camera connection check and protocol settings
"COMMUNICATION SETUP"	
"NETWORK SETUP"	Settings for network IP address, gateway, etc.
"RS485 SETUP"	Settings for RS485 communication
"DATA PORT SETUP"	Settings for serial data communication
"REPORT"	
"SYSTEM LOG"	Operating log of this unit, and trouble log
"EVENT LOG"	Log at event occurrence
"OLDEST DATA INFORMATION"	Time of the oldest recording data on the hard disc
"USER INFORMATION"	
"USER LEVEL SETUP"	Functional setup to enable the user at each level to operate in each channel
"ONLINE USER INFORMATION"	Display of IP address for on-line user
"PASSWORD"	User password setup at each level
"KEYLOCK"	Keyboard lock
"DATA MANAGEMENT"	
"FACTORY DEFAULT"	Returning each setup parameter to the default settings
"BACKUP"	Recorded data backup in the external hard disk

3.1 Operation for Various Settings
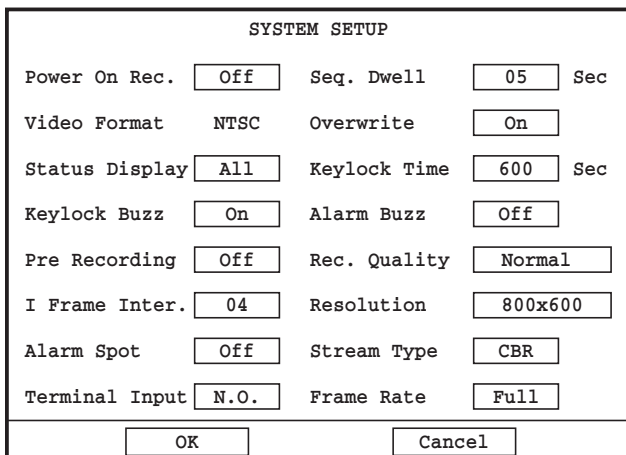
3.1.1 System Management (SYSTEM MAN-AGEMENT)

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears.

```
        WJ-RT208 SETUP MENU

    SYSTEM MANAGEMENT
    SEARCH
    REC&EVENT SETUP
    PTZ SETUP
    CAMERA SETUP
    COMMUNICATION SETUP
    REPORT
    USER INFORMATION
    DATA MANAGEMENT
```

(2) Move the cursor to "SYSTEM MANAGEMENT" and press the [SET] button.

```
        SYSTEM MANAGEMENT

    SYSTEM SETUP
    DISK INFORMATION
    REBOOT SYSTEM
    PICTURE ADJUST
    TIME & DATE
    VERSION
```

(3) Move the cursor to "SYSTEM SETUP" and press the [SET] button.

```
                SYSTEM SETUP

Power On Rec.   Off     Seq. Dwell      05    Sec

Video Format    NTSC    Overwrite       On

Status Display  All     Keylock Time    600   Sec

Keylock Buzz    On      Alarm Buzz      Off

Pre Recording   Off     Rec. Quality    Normal

I Frame Inter.  04      Resolution      800x600

Alarm Spot      Off     Stream Type     CBR

Terminal Input  N.O.    Frame Rate      Full

        OK                  Cancel
```

System setup (SYSTEM SETUP)

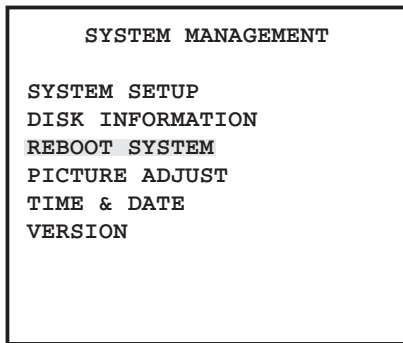| Item	Descriptions and remarks	Selectable parameters [Default Setting]
"Power On Rec."	Recording will automatically start when the power is turned on.	"On/Off" "Off"
"Seq. Dwell"	Sequential changeover time intervals.	02 - 30, 05
"Video Format"	The video output format is fixed to the NTSC system. Therefore, the user cannot set the settings.	"NTSC"
"Overwrite"	Even when "On" is selected for "Overwrite", recording will not be performed to protect data from overwriting for the days set on "Rec. Reserve" of "CAMERA SETUP" unless the set days have passed.	"On/Off" "On"
"Status Display"	It is possible to conceal information such as the channel name that is displayed on the screen.	"All/Stat/None/Name" "All"
"Keylock Time"	Even after the lapse of the preset time, the key lock does not function if recording data is being backed up. After the lapse of the preset time counted after the completion of recording data backup, the key will be automatically locked.	005 - 999 600
"Keylock Buzz"	When setting is made at "On" and a password is wrongly keyed in three times continuously, the buzzer begins to sound for one minute.	"On/Off" "On"
"Alarm Buzz"	Buzzer "On/Off" is set up.	"On/Off" "Off"
"Pre Recording"	The time period for pre recording can differ according to the order of recording start. The minimum time period is 5 seconds. (Changeable with "I Frame Inter.", "Rec. Quality", and "Stream Type") When changing this setting, it is necessary to stop recording and disconnect all network connections. **Note:** When Pre Recording is set at "On", the pre-recorded image data may be separated to different data groups.	"On/Off" "Off"
"Rec. Quality"	If settings of "Rec. Quality", "I Frame Inter.", "Stream Type", and "Frame Rate" are changed in the middle of recording, recording will stop and then will resume. Then the setting values become effective. If recording is not stopped, the new setting becomes effective after the lapse of the time period preset with "RECORD LENGTH".	"SP Fine/Fine/Good/ Normal/Extended" "Normal"
"I Frame Inter."	Playback is delayed if the setting value for "I Frame Inter." is too high. We recommended using a default value. When changing this setting, it is necessary to stop recording and disconnect the network connections. Implement the settings of "I Frame Inter." after the pre-recording setting has been set at OFF.	01 - 15 04
"Resolution"	Resolution of image data output from the VGA interface	800 x 600 or 1024 x 768 [800 x 600]
"Alarm Spot"	When an alarm goes off, the screen of the occurring alarm is displayed in the single-spot mode.	On/Off "Off"
"Stream Type"	When the setting is made at "VBR", there may be a difference in recording length. If the recording time need be in higher preference, the setting should be made at "CBR". If screen changes seem to be extreme, the setting made at "VBR" is preferable.	CBR/VBR "CBR"
"Terminal Input"	N.O.: Alarm is started with a low-level signal. N.C.: Alarm is started with a high-level signal.	N.O./N.C. "N.O."
"Frame Rate"	The frame rate set at "Full" is 25 frames/second.	"Full, 1/2F, 1/4F, 1/8F, 1/16F" "Full"

Note: When "Terminal Input" is set at "N.C.", an alarm unit of "N.O." should be connected to the alarm port of this unit. If no connections are made, the alarm port will be "N.O." (normally open) and will continue receiving alarm signals at all times.
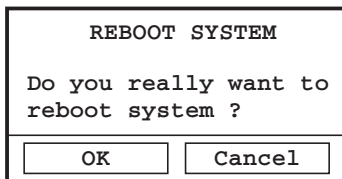
Disk information (DISK INFORMATION)

In regard to hard disc initialization and hard disc index recovery, refer to 3.4 herein.

Reboot system (REBOOT SYSTEM)

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears. Move the cursor to "SYSTEM MANAGEMENT" and press the [SET] button. (Refer to steps (1) and (2) in 3.1.1.)

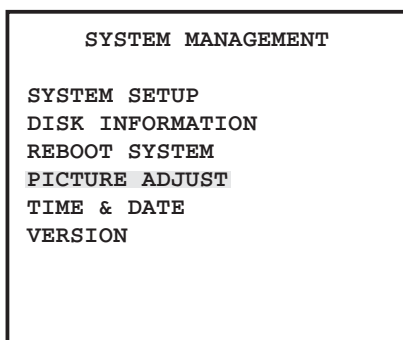(2) Move the cursor to "REBOOT SYSTEM" and press the [SET] button.

```
        SYSTEM MANAGEMENT

   SYSTEM SETUP
   DISK INFORMATION
   REBOOT SYSTEM
   PICTURE ADJUST
   TIME & DATE
   VERSION
```

(3) The confirmation dialog box will be displayed.

```
        REBOOT SYSTEM

   Do you really want to
   reboot system ?
   ┌──────────┐  ┌──────────┐
   │    OK    │  │  Cancel  │
   └──────────┘  └──────────┘
```
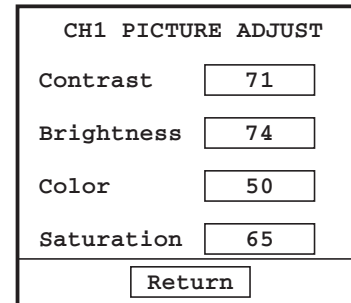
(4) Move the cursor to [OK] and press the [SET] button.

Picture adjustment (PICTURE ADJUST)

(1) Select the desired channel to be adjusted by using the direction button (up/down) or the appropriate numeric button.
The image frame of the selected channel (camera) blinks.

(2) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears. Move the cursor to "SYSTEM MANAGEMENT" and press the [SET] button.
(Refer to steps (1) and (2) in 3.1.1.)

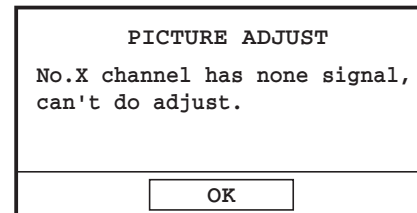(3) Move the cursor to "PICTURE ADJUST" and press the [SET] button.

```
        SYSTEM MANAGEMENT

   SYSTEM SETUP
   DISK INFORMATION
   REBOOT SYSTEM
   PICTURE ADJUST
   TIME & DATE
   VERSION
```

(4) Move the cursor to the item to adjust and change the numeric value with the direction button (right/left).

```
   CH1 PICTURE ADJUST

   Contrast      ┌──────┐
                 │  71  │
                 └──────┘
   Brightness    ┌──────┐
                 │  74  │
                 └──────┘
   Color         ┌──────┐
                 │  50  │
                 └──────┘
   Saturation    ┌──────┐
                 │  65  │
                 └──────┘
        ┌──────────┐
        │  Return  │
        └──────────┘
```

Note: During playback on Channel 1, the screen setup cannot be used.

(5) When adjustment is completed, move the cursor to [Return], and press the [SET] button. The newly set conditions are saved.

Note: When "PICTURE ADJUST" is selected in a channel where no input signals are available.

```
        PICTURE ADJUST
   No.X channel has none signal,
   can't do adjust.

        ┌──────────┐
        │    OK    │
        └──────────┘
```
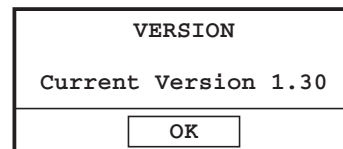
Time & date (TIME & DATE)

Refer to 1.4 for the system's time period.

Version (VERSION)

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears. Move the cursor to "SYSTEM MANAGEMENT" and press the [SET] button. (Refer to steps (1) and (2) in 3.1.1.)

(2) Move the cursor to "VERSION" and press the [SET] button.
The current software version of this unit is displayed.

```
            VERSION

   Current Version 1.30
        ┌──────────┐
        │    OK    │
        └──────────┘
```

Note: Refer to the Network Operating Instructions for the software upgrade.
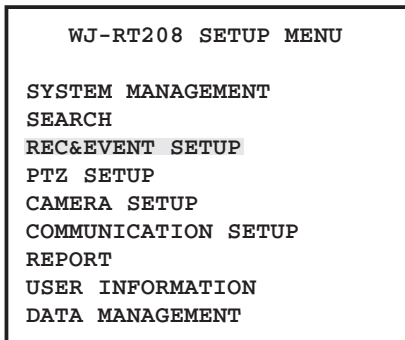
3.1.2 Record search (SEARCH)

Refer to 3. 2.

3.1.3 Recording & event setup (REC & EVENT)
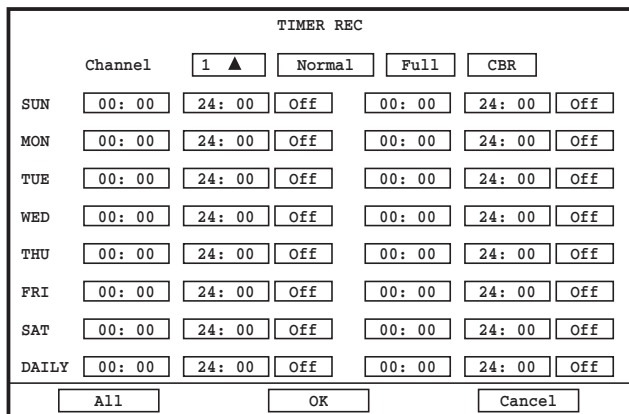**Timer recording (TIMER REC)**

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears.

```
        WJ-RT208 SETUP MENU


    SYSTEM MANAGEMENT
    SEARCH
    REC&EVENT SETUP
    PTZ SETUP
    CAMERA SETUP
    COMMUNICATION SETUP
    REPORT
    USER INFORMATION
    DATA MANAGEMENT
```

(2) Move the cursor to "REC&EVENT SETUP" and press the [SET] button.

```
           REC & EVENT

    TIMER REC
    TERMINAL REC
    VMD REC
    RECORD LENGTH
    AUDIO SELECT
```
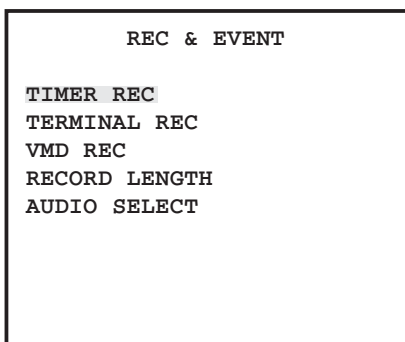
(3) Move the cursor to "TIMER REC" and press the [SET] button. The "TIMER REC" menu is displayed.

```
                     TIMER REC

        Channel    1 ▲    Normal    Full    CBR

SUN    00: 00   24: 00   Off     00: 00   24: 00   Off
MON    00: 00   24: 00   Off     00: 00   24: 00   Off
TUE    00: 00   24: 00   Off     00: 00   24: 00   Off
WED    00: 00   24: 00   Off     00: 00   24: 00   Off
THU    00: 00   24: 00   Off     00: 00   24: 00   Off
FRI    00: 00   24: 00   Off     00: 00   24: 00   Off
SAT    00: 00   24: 00   Off     00: 00   24: 00   Off
DAILY  00: 00   24: 00   Off     00: 00   24: 00   Off
        All             OK             Cancel
```

Camera identification: 1 - 8
Picture quality: "SP Fine/Fine/Good/Normal/Extended"
Default: "Normal"
Frame rate: "Full, 1/2F, 1/4F, 1/8F, 1/16F"
Default: "Full"

Stream type: "CBR" or "VBR"
Default: "CBR" (If screen changes seem extreme, the setting made at "VBR" is preferable.)
Recording date: "SUN", "MON", "TUE", "WED", "THU", "FRI", "SAT", "DAILY"
Two types of "Period1" and/or "Period2" can be set up for one day.
If the same setting is used every day, the setting should be made with "DAILY". When all time spans have been set up, select "On".
Default: 00:00 - 24:00, "Off"

(4) If the same setting is required for all channels, press [All] after completing the setting for one channel. All the parameters are then made identical to that setting.

```
    Current channel information
    has been copied to all
    channels!

              OK
```
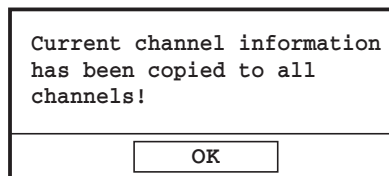
Press the [SET] button to close the prompt box.

(5) Move the cursor to [OK] and press the [SET] button.
Note: When trying to stop the recording by changing the settings in the process of the timer recording, recording will not stop immediately. The timer recording will not stop until it reaches the end time of the set duration for the timer recording. (When two durations are set, the timer recording will stop when it reaches the end time set later.) To stop the timer recording, stop recording manually after changing the settings for the timer recording.

Terminal recording (TERMINAL REC)

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears. Move the cursor to "REC&EVENT SETUP" and press the [SET] button. (Refer to steps (1) and (2) in 3.1.3.)

```
           REC & EVENT

    TIMER REC
    TERMINAL REC
    VMD REC
    RECORD LENGTH
    AUDIO SELECT
```
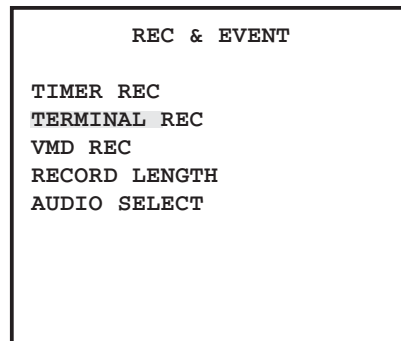
(2) Move the cursor to "TERMINAL REC" and press the [SET] button.

```
                TERMINAL REC
Terminal Input  1   ▲

Alarm Output        0

Alarm Time         030      Sec

Rec. Interval      060      Sec

PTZ Preset         000

Rec. Channel        1

Rec. Quality   Normal    Full     CBR

Period1        00: 00   24: 00    Off

Period2        00: 00   24: 00    On

      All          OK         Cancel
```

Terminal input connector: 1 - 8
    Default: 1
Alarm output connector: 0 - 3
    Default: 0 (0 indicates that there is no alarm signal
          output.)
Alarm time: 000 - 999
    Default: 030
Rec. Interval: 030 - 999
    Default: 060
Camera preset position: 000 - 256
    Default: 000
Recording channel: 0 - 8
    Default: 1
Picture quality: "SP Fine/Fine/Good/Normal/Extended"
    Default: "Normal"
Frame rate: "Full, 1/2F, 1/4F, 1/8F, 1/16F"
    Default: "Full"
Stream type: "CBR/VBR"
    Default: "CBR" (If screen changes seem extreme,
    the setting made at "VBR" is preferable.)
Period: "Period1/Period2"
    Default: 00: 00 - 24:00
    When "On" is selected for "Period1" and/or "Period2",
    alarm detection will be validated in the set period.
Notes:
  1. When setting is completed, set "Period1" and/or
    "Period2" at "On".
  2. For [All] operation and functions, refer to the timer
    recording explanation.

(4) When setting is completed, move the cursor to [OK]
    and press the [SET] button.
    Note: When trying to stop the recording by changing
      the settings in the process of the terminal recording,
      recording will not stop immediately. The terminal
      recording will not stop unless time set for "Rec.
      Interval" has been passed. To stop the terminal
      recording, stop recording manually after changing
      the settings for the terminal recording.

Video motion detector recording (VMD REC)

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU"
appears. Move the cursor to "REC&EVENT SETUP" and
press the [SET] button. (Refer to steps (1) and (2) in
3.1.3.)

```
            REC & EVENT

    TIMER REC
    TERMINAL REC
    VMD REC
    RECORD LENGTH
    AUDIO SELECT
```

(2) Move the cursor to "VMD REC" and press the [SET] but-
ton.

```
                VMD REC

Channel No.    1   ▲

Sensitivity     10

Area Setup     Set

Alarm Output    0      030      Sec

Rec. Interval   060      Sec

PTZ Preset     000

Rec. Quality  Normal    Full     CBR

Period1       00: 00   24: 00    Off

Period2       00: 00   24: 00    Off

      All          OK        Cancel
```

Camera ID: 1-8
    Default: 1
Sensitivity: 01 - 99 (01 corresponds to the maximum
    sensitivity.)
    Default: 10
Area setup: 140 grid areas can be established inde-
    pendently.
    Default: All areas are not selected.
Alarm output connector: 0-3
    Default: 0 (0 indicates that there is no alarm signal
          output.)
Alarm time: 000-999
    Default: 030
Rec. Interval: 030-999
    Default: 060
Camera preset position: 000-256
    Default: 000
Picture quality: "SP Fine/Fine/Good/Normal/Extended"
    Default: "Normal"

Frame rate: "Full, 1/2F, 1/4F, 1/8F, 1/16F"
　　Default: "Full"
Stream type: "CBR/VBR"
　　Default: "CBR" (If screen changes seem extreme, the setting made at "VBR" is preferable.)
Period: "Period1/Period2"
　　Default: 00:00 - 24:00
　　(The setup time for "Period1" (or "Period2") is displayed when the VMD recording function is started.)
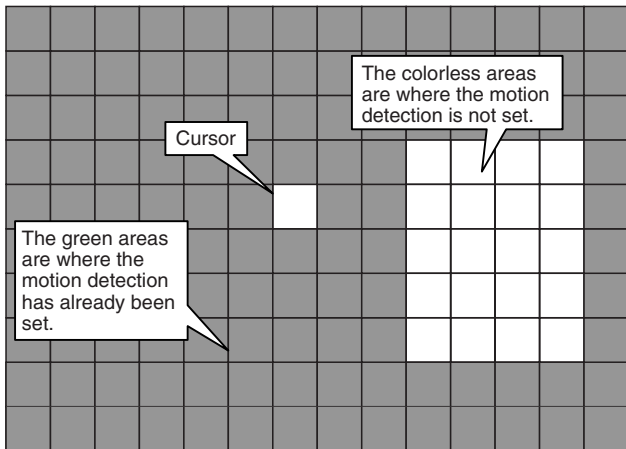
Cautions:
1. When setting is completed, set "Period1" and/or "Period2" to "On".
2. For [All] operation and functions, refer to the timer recording explanation.

(3) When setting is completed, move the cursor to [Ok] and press the [SET] button.

VMD Area Setup (AREA SETUP)

(1) Move the cursor to [OK] and press the [SET] button in the "VMD REC" menu. A motion detector area setup screen is displayed.

The colorless areas are where the motion detection is not set.

Cursor

The green areas are where the motion detection has already been set.

(2) Areas in green and without color are displayed on the screen. In the green area, the motion detector has already been set up, while no setting has been made in the colorless area. Move the cursor to a setting place with the direction button and press the [SET] button. The grid color is turned from green to colorless or from colorless to green, and the setup change of that grid is displayed.
(3) Press the [ESC] button to save the setup conditions of the motion detector area. Move the cursor to [OK] and press the [SET] button and make settings for parameters other than those of "VMD REC".

Notes:
1. When trying to stop the recording by changing the settings in the process of the VMD recording, recording will not stop immediately. The VMD recording will not stop unless time set for "Rec. Interval" has been passed. To stop the VMD recording, stop recording manually after changing the settings for the VMD recording.
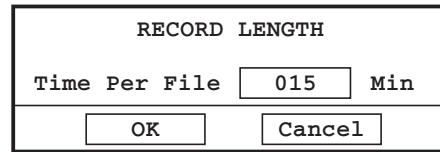
2. While "NetBackup" (data backup function) is being performed using the provided software, VMD response may be delayed.

Record length (RECORD LENGTH)

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears. Move the cursor to "REC & EVENT SETUP" and press the [SET] button. (Refer to steps (1) and (2) in 3.1.3.)

```
        REC & EVENT

 TIMER REC
 TERMINAL REC
 VMD REC
 RECORD LENGTH
 AUDIO SELECT
```
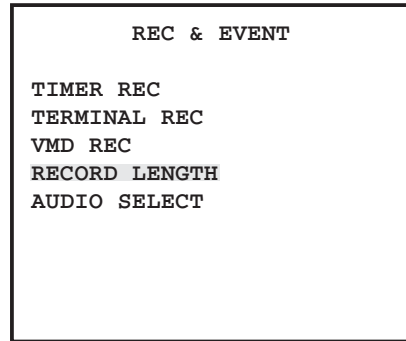
(2) Move the cursor to "RECORD LENGTH" and press the [SET] button.

```
      RECORD LENGTH

 Time Per File   015    Min
      OK         Cancel
```

Setup enabled range: 005 - 240
　　Default: 15

Note: If the "RECORD LENGTH" setup conditions are changed in the middle of recording, setting becomes effective at that time point.

(3) Move the cursor to [OK] and press the [SET] button.

Audio selection (AUDIO SELECT)

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears. Move the cursor to "REC & EVENT SETUP" and press the [SET] button. (Refer to steps (1) and (2) in 3.1.3.)

```
        REC & EVENT

 TIMER REC
 TERMINAL REC
 VMD REC
 RECORD LENGTH
 AUDIO SELECT
```
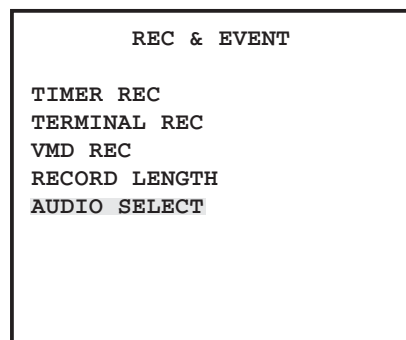
(2) Move the cursor to "AUDIO SELECT" and press the [SET] button.

```
              AUDIO SELECT

  ● Audio1  ○ Audio2  ○ Audio3  ● Audio4
  ● Audio5  ● Audio6  ● Audio7  ● Audio8

       OK                    Cancel
```

(3) Use the direction button (up/down) and move the cursor to the setting channel. The radio button is lit up and recording takes place when the audio signals are sent.

Note: Even though recording is performed within the same time period, much more hard disk capacity is needed for recording with audio signals than recording without audio signals.

3.1.4 PTZ setup (PTZ SETUP)

PTZ selection (PTZ SELECT)

For the selection of the camera, refer to "2.5 Camera Control."

Preset position information (PRESET INFORMATION)

(1) Press the [MENU] button. Move the cursor to "PTZ SETUP" and press the [SET] button.

```
              PTZ SETUP

  PTZ SELECT
  PRESET INFORMATION
```

(2) Move the cursor to "PRESET INFORMATION" on the "PTZ SETUP" dialog box and press the [SET] button.

```
           PRESET INFORMATION

  Camera          1  ▲

  Preset         001

                 Call


                Return
```

Camera No.: 1-8

Default: 1 (Adjusted with the (right/left) direction button)

Preset: 001 - 256

Default: 001 (Move the cursor by using the direction button (right or left), and enter the preset position number by using the numeric buttons.

Call: Move the cursor to "Call" and press the [SET] button. The camera turns to the preset position of the selected number.

Note: For PTZ preset position setting, refer to 2.5.6.

(3) When confirmation is completed, move the cursor to [Return] and press the [SET] button.

3.1.5 Camera setup "CAMERA SETUP"

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears.

```
        WJ-RT208 SETUP MENU

  SYSTEM MANAGEMENT
  SEARCH
  REC&EVENT SETUP
  PTZ SETUP
  CAMERA SETUP
  COMMUNICATION SETUP
  REPORT
  USER INFORMATION
  DATA MANAGEMENT
```

(2) Move the cursor to "CAMERA SETUP" and press the [SET] button.

```
            CAMERA SETUP

  Channel No.      1  ▲

  CH Enable          On

  Mask Area         Set

  Mask Enable       Off

  PTZ Protocol    PANASONIC

  Rec. Reserve     000    Days

  Channel Name   CH1

    All        OK      Cancel
```

Camera No.: 1 - 8

Default: 1

CH Enable: "On/Off"

Default: "On"

Mask Area: Refer to note 4 below.

Mask Enable: "On/Off"

Default: "Off"

PTZ Protocol: "PANASONIC/TYPE1/TYPE2/TYPE3/TYPE4"

Default: "PANASONIC"

Rec. Reserve: 000 - 200

Default: 000

39

Channel Name: Indicates the correlation between the camera title and serial number. Channel name can be changed using the provided software.

Cautions: For the [All] operation and functions, refer to the timer recording explanation.

Notes:
1. "CH Enable" of channel 1 cannot be set at "Off". During playback in channel 1, it is impossible to set up its masking area.
   Mask Enable:
   "On": Used to enable masking area setup. The masked area will not be displayed and recorded (Black screen will be recorded.).
   "Off": The masking function is not effective.
2. During operation in sequence mode, "CH Enable" cannot be set up.
3. When the setup value for "Rec. Reserve" exceeds one day, the screen data for a maximum of "preset number of days + 4 hours" can be reserved.
4. "Mask Area" can be set up with the procedures specified below.
   Move the cursor to "Set" of "Mask Area" and press the [SET] button. The masking area setup screen is then opened.
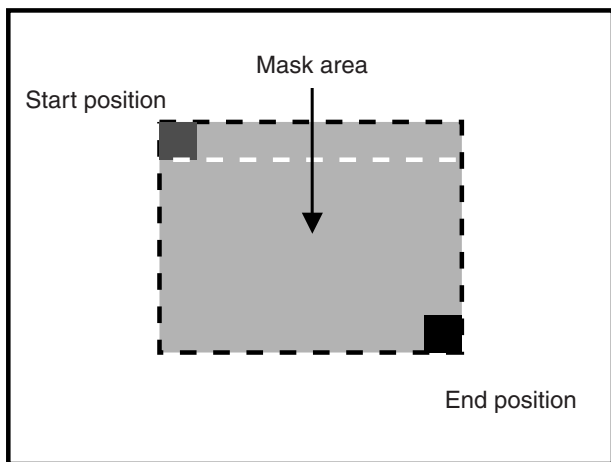
a) The red cursor in the above diagram indicates the starting position and the black cursor indicates the ending position. When the direction button is used, it is possible to move both the red and black cursors simultaneously throughout the area. It is also possible to move the black cursor only to adjust the area size. Determine if you make a control mode changeover by pressing the [SET] button, moving the red and black cursors at the same time, or moving the black cursor only.
b) When Numeral 1 is pressed, the profile of the masking area is displayed. When 2 is pressed, all the area is embedded.

3.1.6 Communication setup (COMMUNICATION SETUP)

Network setup (NETWORK SETUP)

Move the cursor to "COMMUNICATION SETUP" on "WJ-RT208 SETUP MENU" and press the [SET] button.
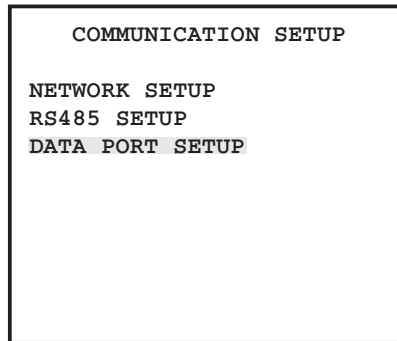
Move the cursor to "NETWORK SETUP" and press the [SET] button.

IP Address: IP address given to this unit
Subnet Mask: Subnet mask for this unit
Gateway: Gateway address for this unit
Server Port: Port number of this unit
Protocol: Communication protocol
Alarm Center IP: IP address of the PC on which the Alarm Center is installed
Alarm Port: Communication port number of the alarm center, 1024 - 9999
Default: [4000]
Alarm Enable: "On" or "Off"
Default: "Off"
Line Speed: Communication speed of the network card is set up to match network communications.

Notes:
1. In regard to initial setting and setup enabled range, refer to "Parameters and initial setup values for the setup menu."
2. It is necessary to restart the unit after changing the settings.

RS485 setup (RS485 SETUP)

Refer to the step (7) in 2.5.

Data port setup (DATA PORT SETUP)

The settings relating to the serial data communication can be configured on "DATA PORT SETUP" of "COMMUNICATION SETUP" on the "WJ-RT208 SETUP MENU".

(1) Press the [MENU] button. The "WJ-RT208 SETUP MENU" will be displayed.

```
        WJ-RT208 SETUP MENU

    SYSTEM MANAGEMENT
    SEARCH
    REC&EVENT SETUP
    PTZ SETUP
    CAMERA SETUP
    COMMUNICATION SETUP
    REPORT
    USER INFORMATION
    DATA MANAGEMENT
```

(2) Move the cursor onto "COMMUNICATION SETUP" and press the [SET] button.
The "COMMUNICATION SETUP" menu will be displayed.

```
        COMMUNICATION SETUP

    NETWORK SETUP
    RS485 SETUP
    DATA PORT SETUP
```

(3) Move the cursor onto "DATA PORT SETUP" and press the [SET] button.
The "DATA PORT SETUP" menu will be displayed.

```
        DATA PORT SETUP

    Unit Address (System)    001

    Baud Rate                9600

    Data Bit                 8

    Parity                   None

    Stop Bit                 1

    Retry Timing             Off

    Alarm Data               1s

    Channel No.              Set

            OK        Cancel
```

(4) Configure the following setup items.

• **"Unit Address (System)"**
A unit address (System) is a unique number assigning to PS·Data devices. The addresses must be unique to identify system devices when connecting multiple devices compatible with PS·Data.
Numbers, "001"-"099", are to be assigned as the unit addresses to the system devices.

• **"Baud Rate"**
Select the communication speed for data transmission with a connected device from the following.
2 400/4 800/9 600/19 200/38 400 bps

• **"Data Bit"**
It is impossible to change the value for this setting.
8 (bit)

• **"Parity"**
Select a method to check a transmission error at communication from the following.
"None": No parity check
"Even": Even parity
"Odd": Odd parity

• **"Stop Bit"**
Select a stop bit from the following.
1 bit/2 bit

• **"Retry Timing"**
Select a retransmission interval for when data reception is not confirmed from the following.
OFF/100 ms/200 ms/400 ms/1 000 ms

• **"Alarm Data"**
Select a method to inform the connected controller of an event occurrence from the following.
"Off": Does not function.
"0s": Informs the controller every time an event is detected.
"1s/5s": Informs the controller when a specified time has passed after detecting an event.

• **"Channel No."**
It is possible to assign a number to each camera channel to operate cameras using the controller compatible with PS·Data.
Do the following to assign numbers to the camera channels.
(1) Move the cursor onto "Channel No." and press the [SET] button.
The "Channel No." menu will be displayed.

41

```
            DATA PORT SETUP
  Camera Port    Channel No.
       1            001
       2            002
       3            003
       4            004
       5            005
       6            006
       7            007
       8            008

      OK             Cancel
```

(2) Assign a camera number (to be operated using the controller) for each camera port using the camera selection buttons.

(3) After completing the camera number assignment, move the cursor onto [OK] and press the [SET] button.

Note:
To associate the camera number with the unit address (unit number) on the system controller, it is necessary to select "Enable" displayed on the LCD on the system controller first. When connecting the system controller with multiple recorders and is it necessary to change the camera number settings, select "Disable" for the set association setting of the selected camera number before changing the camera number settings.

Refer to the operating instructions of the system controller for further information about the association settings between the camera number and the unit address (number).

3.1.7 Report (REPORT)
System log (SYSTEM LOG)

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears.

```
      WJ-RT208 SETUP MENU

  SYSTEM MANAGEMENT
  SEARCH
  REC&EVENT SETUP
  PTZ SETUP
  CAMERA SETUP
  COMMUNICATION SETUP
  REPORT
  USER INFORMATION
  DATA MANAGEMENT
```

(2) Move the cursor to "REPORT" and press the [SET] button.

```
            REPORT

  SYSTEM LOG
  EVENT LOG
  OLDEST DATA INFORMATION
```

(3) Move the cursor to "SYSTEM LOG" and press the [SET] button.
The result of queries into the system diary is displayed.

```
              SYSTEM LOG

  No.      Time & Date        Event  p 01/23

   1    2005-01-24  10:43:22  Modify Network
   2    2005-01-24  09:43:22  [MANAGER] Login
   3    2005-01-24  08:43:22  [L]Modify Time
   4    2005-01-24  07:43:22  Modify Timer Rec.
   5    2005-01-24  06:43:22  Modify VMD Rec.
   6    2005-01-24  05:43:22  Modify Operator Pswd
   7    2005-01-24  04:43:22  Modify Manager Pswd
   8    2005-01-24  03:43:22  Restore Default Set
   9    2005-01-24  02:43:22  Format Disk=1
  10    2005-01-24  01:43:22  [L]Reset System

      Prev          Next          Return
```

Note: When the same operations are performed for three times or more, only the latest and the oldest system logs will be displayed.

(4) Contents of system log descriptions are as follows:
"System Startup"
"Invalid Password"
"[MANAGER] Login"
"[OPERATOR] Login"
"[VIEWER] Login"
"[L] Update Sys Settings"
"[L] Modify Time"
"[L] Reset System"
"Modify Timer Rec."
"Modify VMD Rec."
"Modify Terminal Rec."
"Modify Rec. Reserve"
"Modify Network"
"Modify Manager Pswd"
"Modify Operator Pswd"
"Modify Viewer Pswd"
"Restore Default Set"
"Format Disk=m"
"Repair Directory Diskm"
"Disconnect User=n"
"[R] Control User Login"
"[R] Video User Login"
"[R] Update Sys Settings"
"[R] Modify Time"
"[R] Reset System"

"[R] System Updated"
"Disk Full"
"User Allow Overwrite"
"Full Records"
"Disk Access Error"
"Thermal Error"
"Fan Error"

Event log (EVENT LOG)

(1) Select "REPORT" from "WJ-RT208 SETUP MENU". Move the cursor to "EVENT LOG" of the "REPORT" menu and press the [SET] button.

```
                    EVENT LOG

 No.       Time & Date          Event  p 01/22
┌────────────────────────────────────────────┐
│  1   2005-01-24  10:43:22  Ch=3 VMD alarm    │
│  2   2005-01-24  09:43:22  Cam=5 loss signal │
│  3   2005-01-24  08:43:22  Port=2 terminal alarm │
│  4   2005-01-24  07:43:22  Cam=4 get signal  │
│  5   2005-01-24  06:43:22  Port=1 terminal alarm │
│  6   2005-01-24  05:43:22  Cam=5 loss signal │
│  7   2005-01-24  04:43:22  Port=2 terminal alarm │
│  8   2005-01-24  03:43:22  Port=2 terminal alarm │
│  9   2005-01-24  02:43:22  Cam=5 loss signal │
│ 10   2005-01-24  01:43:22  Ch=3 VMD alarm    │
└────────────────────────────────────────────┘
     ┌─────────┐   ┌─────────┐   ┌─────────┐
     │  Prev   │   │  Next   │   │ Return  │
     └─────────┘   └─────────┘   └─────────┘
```

(2) Contents of event log descriptions are as follows:
"Cam=n loss signal"
"Cam=n get signal"
"Port=n terminal alarm"
"Ch=n VMD alarm"

Note:
"SYSTEM LOG" and "EVENT LOG" are stored in the hard disk with the smallest number. If this disk is replaced, logs cannot be checked any more. If this hard disk is initialized, the logs are also deleted.

Oldest data information (OLDEST DATA INFORMATION)

(1) Select "REPORT" from "WJ-RT208 SETUP MENU". Move the cursor to "OLDEST DATA INFORMATION" of the "REPORT" menu and press the [SET] button.

```
┌──────────────────────────────────┐
│    OLDEST DATA INFORMATION        │
│                                   │
│     2005-01-14   13:14:10         │
│          ┌────────┐               │
│          │   OK   │               │
│          └────────┘               │
└──────────────────────────────────┘
```

Note: In the "OLDEST DATA INFORMATION" menu, the time of the oldest data available on the present hard disk is displayed.

3.1.8 User information (USER INFORMATION)
User level setup (USER LEVEL SETUP)

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears.

```
┌──────────────────────────────────┐
│    WJ-RT208 SETUP MENU            │
│                                   │
│  SYSTEM MANAGEMENT                │
│  SEARCH                           │
│  REC&EVENT SETUP                  │
│  PTZ SETUP                        │
│  CAMERA SETUP                     │
│  COMMUNICATION SETUP              │
│  REPORT                           │
│  USER INFORMATION                 │
│  DATA MANAGEMENT                  │
└──────────────────────────────────┘
```

(2) Move the cursor to "USER INFORMATION" and press the [SET] button.

```
┌──────────────────────────────────┐
│       USER INFORMATION            │
│                                   │
│  USER LEVEL SETUP                 │
│  ONLINE USER INFORMATION          │
│  PASSWORD                         │
│  KEYLOCK                          │
│                                   │
│                                   │
│                                   │
└──────────────────────────────────┘
```

(3) Move the cursor to "USER LEVEL SETUP" and press the [SET] button.

```
┌──────────────────────────────────────┐
│       USER LEVEL SETUP                │
│                                       │
│  Channel No.  ┌─────┐                 │
│               │ 1 ▲ │                 │
│               └─────┘                 │
│  Type         Live View Playback      │
│                                       │
│  Operator    ┌──────┐    ┌──────┐     │
│              │ Yes  │    │ Yes  │     │
│              └──────┘    └──────┘     │
│  Viewer      ┌──────┐    ┌──────┐     │
│              │ Yes  │    │ Yes  │     │
│              └──────┘    └──────┘     │
│  ┌──────┐   ┌──────┐   ┌────────┐     │
│  │ All  │   │  OK  │   │ Cancel │     │
│  └──────┘   └──────┘   └────────┘     │
└──────────────────────────────────────┘
```

Press the direction buttons (right/left) to changeover to the required camera number or update the user level of the operator and viewer.
If the user level of the operator or viewer is set at "No" for a channel, that operator or viewer cannot watch that channel image. However, audio will not be ruled by these settings.

Cautions:
1. User level higher than your own level cannot be modified.
2. In regard to [All] operation and functions, refer to the timer recording explanation.

Online user information (ONLINE USER INFORMA-TION)

(1) Move the cursor to "ONLINE USER INFORMATION" on the "USER INFORMATION" menu, and press the [SET] button.

```
            ONLINE USER INFORMATION

   No.   User Level     Type        IP Address

    1               NO ONLINE USER

    2               NO ONLINE USER

    3               NO ONLINE USER

    4               NO ONLINE USER

    5               NO ONLINE USER
                                        Page 1/4
      Prev           Next            Return
```

(2) Move the cursor to [Prev] or [Next] in order to browse the on-line user list.

For this unit, the remote on-line user can be turned off.
(3) Move the cursor to the user being turned off and press the [SET] button.
The confirmation dialog box will be displayed.

```
     Do you really want to
     disconnect current user ?

          OK         Cancel
```

(4) Move the cursor to [OK] and press the [SET] button.
The on-line user is disconnected.
  Note: Even when a user of "MONITOR" is disconnected, the user will be automatically connected again when "Auto Reconnect" is selected for the user on the Net Client software.

Password (PASSWORD)

(1) Move the cursor to "PASSWORD" on the "USER INFOR-MATION" menu, and press the [SET] button.

```
                    PASSWORD

   Viewer    ******    Confirm   ******

   Operator  ******    Confirm   ******

   Manager   ******    Confirm   ******

         OK                  Cancel
```

(2) Enter a password with numeric keys. User level higher than your own level cannot be modified.

Note: Refer to 1.2 for initial password setting.

Keylock (KEYLOCK)

(1) Move the cursor to "KEYLOCK" on the "USER INFOR-MATION" menu, and press the [SET] button. The confir-mation dialog box will be displayed.

```
                  KEYLOCK
     Do you really want to lock
     keyboard ?

          OK         Cancel
```

Notes:
1. The level for key lock operation stays at the same level for the Viewer. If "Live Viewer" of the channel in the "USER LEVEL SETUP" menu is set at "No", key lock will be made and the screen will not be displayed.
2. In the case of key lock, only the camera selection but-ton (numeric buttons) and the screen split button are available. If other buttons need be pressed, it is neces-sary to enter a password.

(2) Move the cursor to [OK] and press the [SET] button.

3.1.9 Data management (DATA MANAGE-MENT)

Factory default (FACTORY DEFAULT)
Refer to 3. 5.

Backup selection (BACKUP)
Refer to 3. 3.

3.2 Search and Playback

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" is displayed.

```
        WJ-RT208 SETUP MENU


  SYSTEM MANAGEMENT
  SEARCH
  REC&EVENT SETUP
  PTZ SETUP
  CAMERA SETUP
  COMMUNICATION SETUP
  REPORT
  USER INFORMATION
  DATA MANAGEMENT
```

(2) Move the cursor to "SEARCH" and press the [SET] button.
The "SEARCH" dialogbox will be displayed.

```
                 SEARCH

  Channel No.     5

  Start           2004-10-22 11:30:30

  End             2004-10-27 11:30:30

  Event Only     No
       OK                  Cancel
```

(3) Move the cursor to "Channel No.", and enter the desired number.
Caution: If Channel No. is set at "0", data of all channels are checked.
(4) Move the cursor to "Start" and enter a starting time to be checked.
(5) Move the cursor to "End" and enter a ending time to be checked.
(6) Move the cursor to "Event Only", and select "Yes" or "No".
"Yes": Manually recorded data are not retrieved. The event record data only are retrieved.
"No": Retrieval is attempted from all record data.
(7) Move the cursor to [OK] and press the [SET] button.
The "SEARCH RESULT" screen is displayed.

> **Caution:** All record data from the starting time till the ending time are displayed.
> Up to 5 000 record data can be displayed.
> When there are 5 000 records or more for the channel to be played, the latest 5 000 records will be subject to be played.

```
                SEARCH RESULT
  CH  Quality       Start              End

   1 SF     2005-01-24 10:43:22  2005-01-24 10:53:22
   2 FQ     2005-01-24 10:43:22  2005-01-24 10:53:22
   3 GQ     2005-01-24 10:43:22  2005-01-24 10:53:22
   4 NQ     2005-01-24 10:43:22  2005-01-24 10:53:22
   5 EX     2005-01-24 10:43:22  2005-01-24 10:53:22
   6 SF     2005-01-24 10:43:22  2005-01-24 10:53:22
   7 FQ     2005-01-24 10:43:22  2005-01-24 10:53:22
   8 GQ     2005-01-24 10:43:22  2005-01-24 10:53:22

                                 Page 001/001
     Prev            Next            Return
```

(8) Use the direction button (up/down) and select the images to be played.
Move the cursor to [Prev] or [Next] and press the [SET] button in order to browse data.
Move the cursor to [Return] and press the [SET] button. The screen returns to "SEARCH".
(9) Press the [SET] button.
The selected image data are played.
For playback operation, refer to 2.3.2.

> **Caution:** When the record starting time is set at the time preset for checking, and if the time data are contained in part of the recorded data, the recorded data will be played starting at the preset record starting time.

> **Note:** If no operation is carried out, the key lock operation will be carried out automatically. Playback will not stop even when the key lock operation is carried out during playback.
> If you leave this unit for a long time, you should stop playback to maintain security.

3.3 Backup by External HDD

This unit can record a data backup with an external HDD including a 2.5-inch external hard disk. (Usually, an external hard disk can be used.) In order to avoid data loss due to hard disk malfunction or sudden accidents, we recommend recorded data backup with external media.

Notes:
1. When an external HDD is used, initialization is usually unnecessary. The data on the external HDD are deleted during data backup. Prior to starting data backup, therefore, it is necessary to examine if any important data are contained on the external HDD.
2. If the connection cable is pulled out in the middle of data backup, the external HDD may be damaged. The connection cable can be pulled out only if data backup is completed and the appropriate prompt dialog box is displayed.
3. Connect the external hard disk to the COPY1 connector at the back or the COPY2 connector on the front. It is impossible to connect the external hard disk to both connectors at the same time.

45

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears.

```
     WJ-RT208 SETUP MENU


SYSTEM MANAGEMENT
SEARCH
REC&EVENT SETUP
PTZ SETUP
CAMERA SETUP
COMMUNICATION SETUP
REPORT
USER INFORMATION
DATA MANAGEMENT
```

Move the cursor to "DATA MANAGEMENT" and press the [SET] button.
The "DATA MANAGEMENT" menu is displayed.

```
        DATA MANAGEMENT

FACTORY DEFAULT
BACKUP
```

(2) Move the cursor to "BACKUP" and press the [SET] button.
The "SEARCH" menu appears.

```
             SEARCH

Channel No.      0

Start          2004-10-10 11:30:30

End            2004-10-10 11:30:30

Event Only      No

      OK              Cancel
```

(3) Similarly as for "3.2 Playback Check" enter a checked value.
(4) Move the cursor to [OK] and press the [SET] button.
The backup data list is displayed.

```
                 BACKUP LIST

CH  Quality       Start               End

 1  SF      2005-01-24 10:43:22  2005-01-24 10:53:22
 2  FQ      2005-01-24 10:43:22  2005-01-24 10:53:22
 3  GQ      2005-01-24 10:43:22  2005-01-24 10:53:22
 4  NQ      2005-01-24 10:43:22  2005-01-24 10:53:22
 5  EX      2005-01-24 10:43:22  2005-01-24 10:53:22
 6  SF      2005-01-24 10:43:22  2005-01-24 10:53:22
 7  FQ      2005-01-24 10:43:22  2005-01-24 10:53:22
 8  GQ      2005-01-24 10:43:22  2005-01-24 10:53:22

   Total: 14      Size: 12.08GB      Page 001/023
   Prev      Next       Backup       Return
```

Move the cursor to [Prev] or [Next] and press the [SET] button in order to browse data.
Move the cursor to [Return] and press the [SET] button. The screen returns to "SEARCH".

Caution: All record data from the starting time till the ending time are displayed.
Up to 5 000 record data can be displayed.
When there are 5 000 records or more for the channel to be played, the latest 5 000 records will be subject to be played.

Note: All record data are put into data backup at one time. It is impossible to perform data backup only for a single data file.

Move the cursor to "BACKUP" and press the [SET] button.
(5) The "BACKUP" dialog box is displayed and data backup is started.

```
               BACKUP
Total       :0002/0010
[                                    ]

Current     :256/2416 KB
[||||||||                            ]

              Cancel
```

When the [Cancel] button is pressed, data backup operation is cancelled.

Caution: Any operation other than cancelling cannot be performed during data backup.

(6) When data backup is completed, the ending dialog box is displayed.

Notes:
1. The external HDD should be connected to the front or back connector of this unit. If it is connected to both front and back connectors at the same time, normal data backup cannot be done.
2. Confirm that data backup is completed. Then, disconnect the external memory unit.
3. For backup image playback, it is necessary to use the NetClient (USB Client) software on the accessory disc. For the usage method, refer to the Network Operating Instructions.

3.4 Disk Management

It is possible to initialize the hard disk and recover the hard disk index with "SYSTEM MANAGEMENT" – "DISK INFORMATION".

3.4.1 HDD formatting

Stop all recording operations and disconnect all the networks.

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears.

```
      WJ-RT208 SETUP MENU

   SYSTEM MANAGEMENT
   SEARCH
   REC&EVENT SETUP
   PTZ SETUP
   CAMERA SETUP
   COMMUNICATION SETUP
   REPORT
   USER INFORMATION
   DATA MANAGEMENT
```
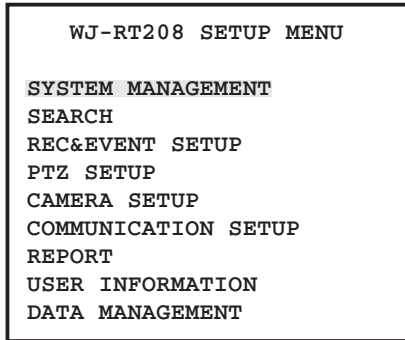
(2) Move the cursor to "SYSTEM MANAGEMENT" and press the [SET] button.
The "SYSTEM MANAGEMENT" menu is displayed.

(3) Move the cursor to "DISK INFORMATION" and press the [SET] button.

```
        SYSTEM MANAGEMENT

   SYSTEM SETUP
   DISK INFORMATION
   REBOOT SYSTEM
   PICTURE ADJUST
   TIME & DATE
   VERSION
```
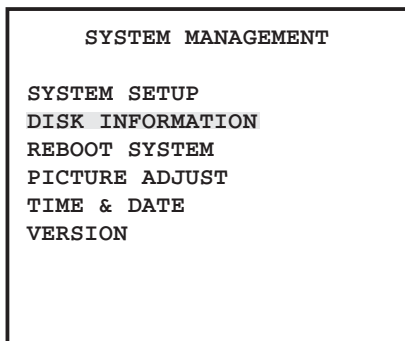
The "DISK INFORMATION" menu appears.

```
            DISK INFORMATION

  No.  Position   Capacity    Used   Hour Meter

   1     0-0    238.474GB  127.067GB   6000h

   2            No disk detected

   3            No disk detected

   4            No disk detected
                                    Page 1/2
      Prev          Next          Return
```

Notes:
- Capacity: Total capacity of the respective hard disk (Unit: GB)
- Used: Disk space already in use (Unit: GB)

- Hour Meter: Hours the hard disk has been used (Unit: hour) 0h – 99 999h (Even the hard disk is used for more than 99 999 hours, the indication will not change from 99 999h.)

Cautions:
1. Possible hard disk errors
   Unformatted disk
   Failure in hard disk identification
   Disk access error
   Fatal errors in hard disk
2. Hard Disk Setup Position

```
  ┌──────────────────────────────┐
  │        ┌──────────┐          │
  │        │          │          │
  │        │    1     │          │
  │        │          │          │
  │        └──────────┘          │
  │  ┌─────┐  ┌─────┐  ┌─────┐   │
  │  │  0  │  │  2  │  │  3  │   │
  │  └─────┘  └─────┘  └─────┘   │
  └──────────────────────────────┘
```
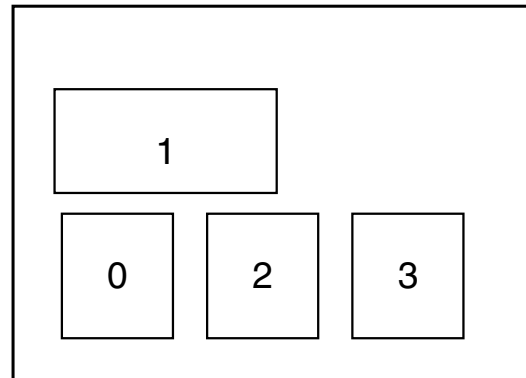
The outlined diagram shown above displays the WJ-RT208 seen from above. The numeral indicates the hard disk number.

In screen display, the hard disk position is indicated by two digits. Example: A-B → 0-1

A: This is the hard disk position number in the diagram above. 0, 1, 2, 3

B: Indicates the distinction between Master HDD (0) and Slave HDD (1).

Regarding 0-1, for example, it denotes the Slave HDD located in Position 0.

Note: If Master and Slave HDD are vertically connected in the same position, both hard disks may become useless if either HDD unit is out of order.

(4) Move the cursor to the initializing hard disk and press the [SET] button.
The confirmation dialog box will be displayed.

```
        DISK FORMAT
   All data will be deleted.
   Will you continue ?

      OK        Cancel
```
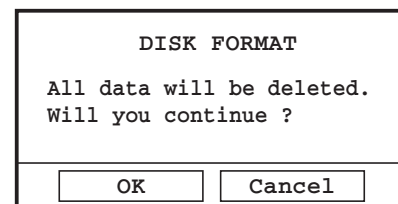
Note: The hard disk cannot be initialized while recording or playback is performed.

(5) When the cursor is moved to [OK] and the [SET] button is pressed, initializing is started.

3.4.2 Recovery of hard disk index

Move the cursor to the hard disk of the recovering index and press the [REC] button.
Recovery of the hard disk index is then started.

3.5 Returning the Configuration to the Default Settings

It is possible to return the configuration to the default settings with "DATA MANAGEMENT" – "FACTORY DEFAULT".

(1) Press the [MENU] button. "WJ-RT208 SETUP MENU" appears.
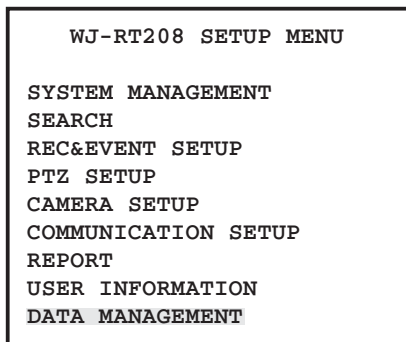
```
     WJ-RT208 SETUP MENU

 SYSTEM MANAGEMENT
 SEARCH
 REC&EVENT SETUP
 PTZ SETUP
 CAMERA SETUP
 COMMUNICATION SETUP
 REPORT
 USER INFORMATION
 DATA MANAGEMENT
```

(2) Move the cursor to "DATA MANAGEMENT" and press the [SET] button.
The "DATA MANAGEMENT" menu is displayed.

```
        DATA MANAGEMENT

 FACTORY DEFAULT
 BACKUP
```
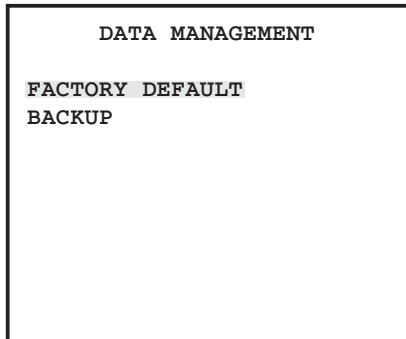
(3) Move the cursor to "FACTORY DEFAULT" and press the [SET] button.
The confirmation dialog box will be displayed.

```
       FACTORY DEFAULT
 Do you really want to restore
 to factory default setting ?

    OK          Cancel
```
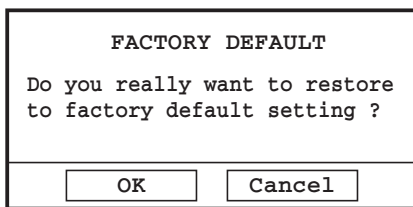
(4) Move the cursor to [OK] and press the [SET] button.
Recovery is started for the default settings configuration.

Caution: Except for the system time, all the setting values are restored to the default settings.

48

System Screen Explanations

All the system screens are shown below.

Ordinary screen (9-split screen)

Hard disk volume prompt

2004-11-04
16:00:00

System time

CH1

CH2

CH3

Mute

Previous channel

CH4

CH5

CH6

Channel name

CH7

CH8
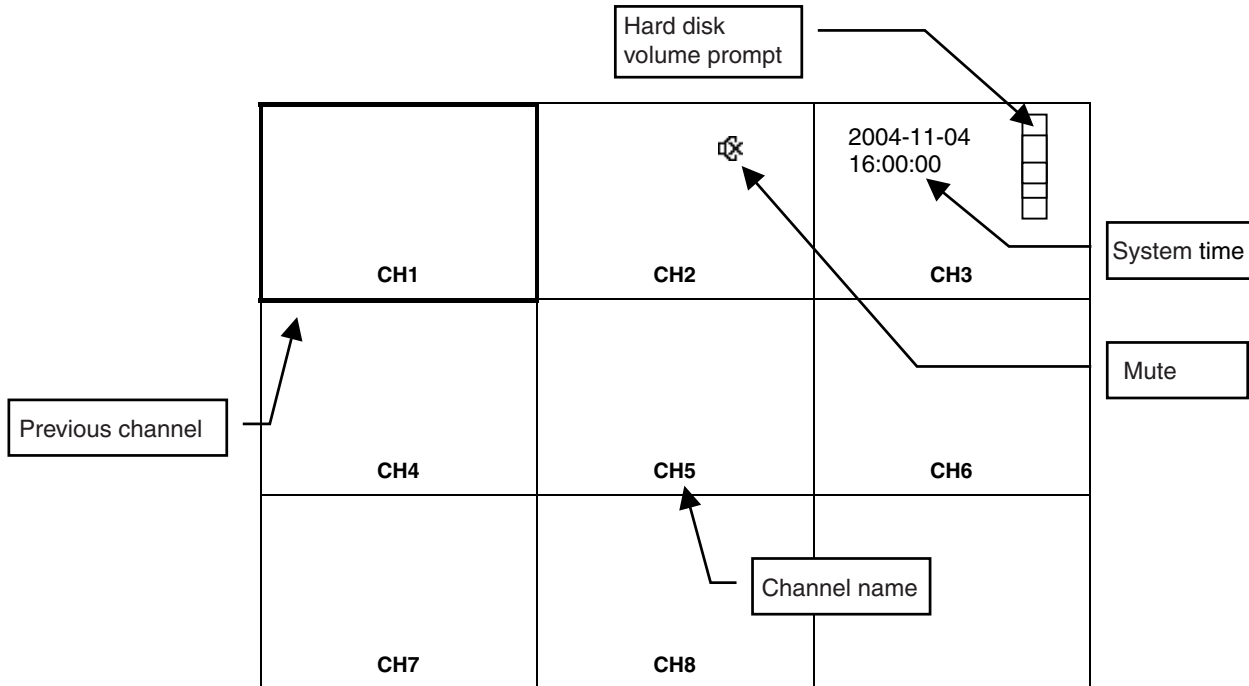
Screen in a certain channel

CAM1 MANUAL NQ PLAY
2004-11-03 15:00:00

Playback status

Playback time

Pan/tilt control

Iris adjustment

VMD recording

Still display

Terminal
recording

Record

PLAYBACK

Playback the
record

Camera menu

Timer recording

Pre-recording

Sequence display

Zoom/focus

Network
Connections
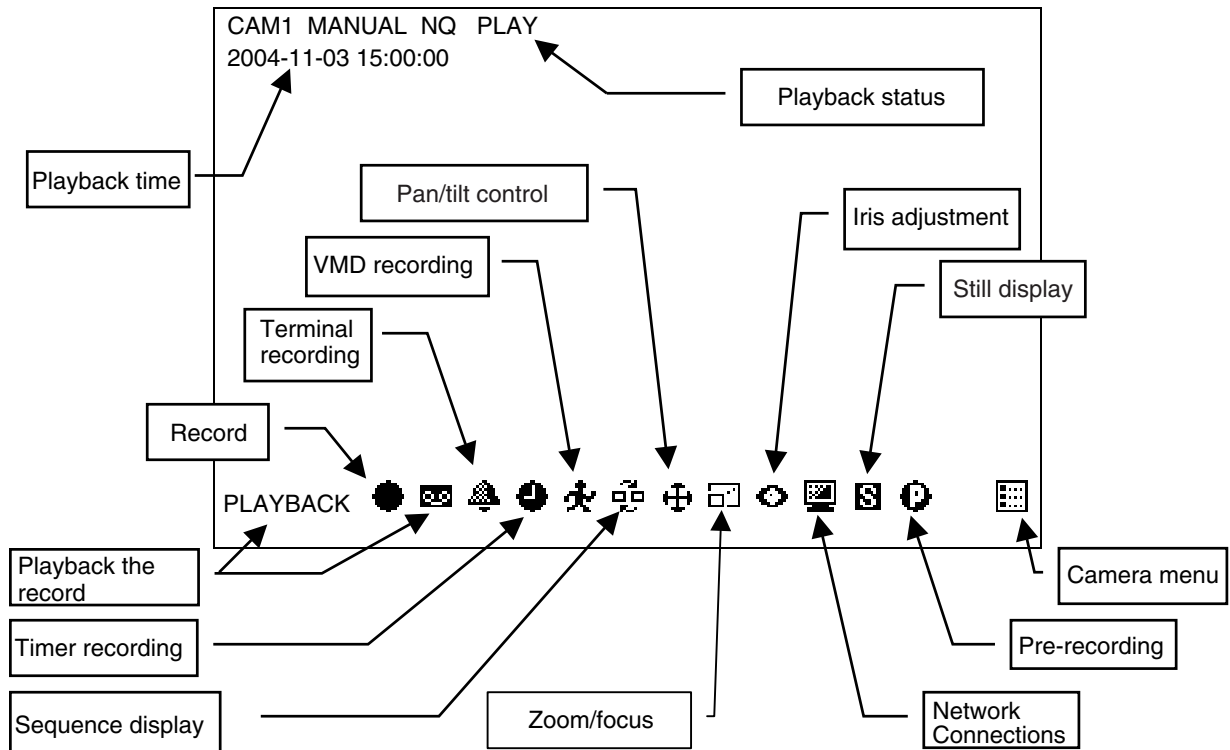
Note: During playback, an icon ▣▣ is displayed and "PLAYBACK" is displayed at the bottom left of the screen.
If there is no video signal input in a channel, "NO SIGNAL" is displayed at the bottom left of the screen.

49

Setup Menu Parameters and Initial Setup Values

1. System Management (SYSTEM MANAGEMENT)

1.1 System Setup (SYSTEM SETUP)

Setting item	Default setting	Available values
"Power On Rec."	"Off"	"Off/On"
"Seq. Dwell"	"05"	"02 - 30"
"Video Format"	"NTSC"	"NTSC (fixed)"
"Overwrite"	"On"	"Off/On"
"Status Display"	"All"	"All/Stat/None/Name"
"Keylock Time"	"600"	"005 - 999"
"Keylock Buzz"	"On"	"Off/On"
"Alarm Buzz"	"Off"	"Off/On"
"Pre Recording"	"Off"	"Off/On"
"Rec. Quality"	"Normal"	"SP Fine/Fine/Good/Normal/Extended"
"I Frame Inter."	"04"	"01 - 15"
"Resolution"	"800 x 600"	"800 x 600/1024 x 768"
"Alarm Spot"	"Off"	"Off/On"
"Stream Type"	"CBR"	"CBR/VBR"
"Alarm Input"	"N.O."	"N.O./N.C."
"Frame Rate"	"Full"	"Full/1/2F/1/4F/1/8F/1/16F"

1.2 Disk Information (DISK INFORMATION)

Possible displayed contents
"No disk detected"
"Disk not format"
"Disk access error"
"Disk fatal error"

1.3 Reboot System (REBOOT SYSTEM)

1.4 CH1 Picture Adjustment (PICTURE ADJUST)

Setting item	Default setting	Available values
"Contrast"	71	00 - 99
"Brightness"	74	00 - 99
"Color"	50	00 - 99
"Saturation"	65	00 - 99

Note: The parameters for this unit can be defined for each channel.

1.5 Time & Date (TIME & DATE)

Setting item	Default setting	Available values
YYYY-MM-DD - HH:MM:SS	–	2000/01/01 00:00:00 - 2100/12/31 23:59:59

1.6 Version Information (VERSION)

Setting item	Default setting	Available values
"Current Version"	–	– (Fix)

2. Recording Search (SEARCH)

Setting item	Default setting	Available values
"Channel No."	0	0 - 8
"Start"	–	–
"End"	–	–
"Event Only"	"No"	"Yes/No"

3. Recording & Event Setup (REC & EVENT)

3.1 Timer Recording (TIMER REC)

Setting item	Default setting	Available values
"Channel"	1	1 - 8
"(Rec. Quality)"	"Normal"	"SP Fine/Fine/Good/Normal/Extended"
"(Frame Rate)"	"Full"	"Full/1/2F/1/4F/1/8F/1/16F"
"(Stream Type)"	"CBR"	"CBR/VBR"
"SUN - SAT, DAILY"	00:00	00:00 - 24:00
	24:00	00:00 - 24:00
	"Off"	"Off/On"
	00:00	00:00 - 24:00
	24:00	00:00 - 24:00
	"Off"	"Off/On"

Note: The parameters for this unit can be defined for each channel.

3.2 Terminal Recording (TERMINAL REC)

Setting item	Default setting	Available values
"Terminal Input"	1	1 - 8
"Alarm Output"	0	0 - 3
"Alarm Time"	030	000 - 999
"Rec. Interval"	060	030 - 999
"PTZ Preset"	000	000 - 256
"Rec. Channel"	1	0 - 8
"Rec. Quality"	"Normal"	"SP Fine/Fine/Good/Normal/Extended"
"(Frame Rate)"	"Full"	"Full/1/2F/1/4F/1/8F/1/16F"
"(Stream Type)"	"CBR"	"CBR/VBR"
"Period1"	00:00	00:00 - 24:00
	24:00	00:00 - 24:00
	"Off"	"Off/On"
"Period2"	00:00	00:00 - 24:00
	24:00	00:00 - 24:00
	"On"	"Off/On"

Note: The parameters for this unit can be defined for each channel.
The underlined parameters will not be copied when the channel copy is performed.

3.3 VMD Setup (VMD REC)

Setting item	Default setting	Available values
"Channel No."	1	1 - 8
"Sensitivity"	10	01 - 99
"Area Setup"	_ *	_
"Alarm Output"	0	0 - 3
"(Alarm Time)"	030	000 - 999
"Rec. Interval"	060	030 - 999
"PTZ Preset"	000	000 - 256
"Rec. Quality"	"Normal"	"SP Fine/Fine/Good/Normal/Extended"
"(Frame Rate)"	"Full"	"Full/1/2F/1/4F/1/8F/1/16F"
"(Stream Type)"	"CBR"	"CBR/VBR"
"Period1"	00:00	00:00 - 24:00
	24:00	00:00 - 24:00
	"Off"	"Off/On"
"Period2"	00:00	00:00 - 24:00
	24:00	00:00 - 24:00
	"Off"	"Off/On"

Notes:
- The parameters for this unit can be defined for each channel.
- The underlined parameters will not be copied when the channel copy is performed.
- * At the default, no area is selected. Up to 140 (14 x 10) areas are available.

3.4 Recording Length (RECORD LENGTH)

Setting item	Default setting	Available values
"Record Length"	015	005 - 240

3.5 Audio Selection (AUDIO SELECT)

Setting item	Default setting	Available values
"Audio1 - 8"	"Audio select"	"Selected/not selected"

4. PTZ Setup (PTZ SETUP)

4.1 PTZ Selection (PTZ SELECT)

Setting item	Default setting	Available values
"Cam1 - 8"	"Not selected"	"Selected/not selected"

4.2 Preset Information (PRESET INFORMATION)

Setting item	Default setting	Available values
"Camera"	1	1 - 8
"Preset"	001	001 - 256

5. Camera Setup (CAMERA SETUP)

Setting item	Default setting	Available values
"Channel No."	1	1 - 8
"CH Enable"	"On"	"Off/On"
"Mask Area"	–	–
"Mask Enable"	"Off"	"Off/On"
"PTZ Protocol"	"PANASONIC"	"PANASONIC/TYPE 1/TYPE 2/TYPE 3/TYPE 4"
"Rec. Reserve"	000	000 - 200
"Channel Name"	"CH1"	"en: 10 letters, em: 5 letters"

Note: The parameters for this unit can be defined for each channel.

6. Communication Setup (COMMUNICATION SETUP)

6.1 Network Setup (NETWORK SETUP)

Setting item	Default setting	Available values
"IP Address"	192.168.000.088	001.000.000.000 - 255.255.255.255
"Subnet Mask"	255.255.255.000	000.000.000.000 - 255.255.255.254
"Gateway"	192.168.000.001	001.000.000.000 - 255.255.255.255
"Server Port"	2000	1024 - 9999
"Protocol"	"TCP"	"TCP/UDP/MCAST"
"Alarm Center IP"	192.168.000.188	001.000.000.000 - 255.255.255.255
"Alarm Port"	4000	1024 - 9999
"Alarm Enable"	"Off"	"Off/On"
"Line Speed"	"Auto Mode"	"Auto Mode/10M Half/10M Full/100M Half/100M Full"

6.2 RS485 Setup (RS485 SETUP)

Setting item	Default setting	Available values
"Baud Rate"	19200	2400/4800/9600/19200/38400
"Data Bit"	8	– (FIX)
"Parity"	"None"	– (FIX)
"Stop Bit"	1	– (FIX)

6.3 Data port setup (DATA PORT SETUP)

Setting item	Default setting	Available values
"Unit Address (System)"	001	001 - 099
"Baud Rate"	9600	2400/4800/9600/19200/38400
"Data Bit"	8	– (FIX)
"Parity"	"None"	"None/Even/Odd"
"Stop Bit"	1	1/2
"Retry Timing"	"Off"	"Off/100ms/200ms/400ms/1000ms"
"Alarm Data"	"1s"	"Off/0s/1s/5s"
"Channel No."	-	-

7. Report (REPORT)

7.1 System Log (SYSTEM LOG)

Possible displayed contents	Possible displayed contents
"System Startup"	"Format Disk=**m**"
"Invalid Password"	"Repair Directory Disk **m**"
"[MANAGER] Login"	"Disconnect User=**n**"
"[OPERATOR] Login"	"[R] Control User Login"
"[VIEWER] Login"	"[R] Video User Login"
"[L] Update Sys Settings"	"[R] Update Sys Settings"
"[L] Modify Time"	"[R] Modify Time"
"[L] Reset System"	"[R] Reset System"
"Modify Timer Rec."	"Disk Full"
"Modify VMD Rec."	"User Allow Overwrite"
"Modify Terminal Rec."	"Full Records"
"Modify Network"	"Disk Access Error"
"Modify Manager Pswd"	"[R] System Updated"
"Modify Operator Pswd"	"Thermal Error"
"Modify Viewer Pswd"	"Fan Error"
"Restore Default Set"	"Modify Rec. Reserve"

Note: n: On-line user number
m: HDD position number

7.2 Event Log (EVENT LOG)

Possible displayed contents
"Ch=n VMD alarm"
"Port=n terminal alarm"
"Cam=n loss signal"
"Cam=n get signal"

Note: n: Channel No. (1 - 8)

7.3 Oldest Data Information (OLDEST DATA INFORMATION)

8. User Information (USER INFORMATION)

8.1 User Level Setup (USER LEVEL SETUP)

Setting item	Default setting	Available values
"Channel No."	1	1 - 8
"Operator - Live Viewer"	"Yes"	"Yes/No"
"Operator - Playback"	"Yes"	"Yes/No"
"Viewer - Live Viewer"	"Yes"	"Yes/No"
"Viewer - Playback"	"Yes"	"Yes/No"

Note: The parameters for this unit can be defined for each channel.

8.2 Online User Information (ONLINE USER INFORMATION)

Setting item	Default setting	Available values
"User Level"	–	"MANAGER/OPERATOR/VIEWER"
"Type"	–	"CONTROL/MONITOR/NETPLAY/FRAME/BACKUP/TALK"

8.3 Password (PASSWORD)

Setting item	Default setting	Available values
"Viewer"	8888	0 - 999999
"Operator"	88888	0 - 999999
"Manager"	888888	0 - 999999

8.4 Keylock (KEYLOCK)

9. Data Management (DATA MANAGEMENT)

9.1 Factory Default (FACTORY DEFAULT)

9.2 Search (BACKUP)
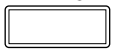
Setting item	Default setting	Available values
"Channel No."	0	0 - 8
"Start"	–	–
"End"	–	–
"Event Only"	"No"	"Yes/No"

Operation using the system controller

The following are descriptions of how to operate the unit using the system controller WV-CU650.
To operate the unit using the system controller WV-CU650, configure the settings required to use a PS·Data compatible system controller in advance.

■ Operation using the WV-CU650

Operation	WJ-RT208	WV-CU650	Note
Open/close the "SETUP MENU"	MENU ⊙	After displaying the "System Setup (301)" submenu of the WV-CU650 F1 — Open the "SETUP MENU" F2 — Close the "SETUP MENU"	At the default setting of the WV-CU650, it is possible to display the "System Setup (301)" submenu by pressing the [F1] button while holding the [SHIFT] button down.
Select an item			
Change the set parameter			
Enter a value	Camera selection buttons 1, 2, … , 9	1, 2, …	
Change the cursor position			
Press a button on the pop-up menu	SET	CAM (SET) or	
Press a button on the pop-up menu	SET	CAM (SET) or	
Return to the previous menu	ESC	MON (ESC)	
Alarm suspension	–	SHIFT ALARM ALM SUSPEND	
Alarm reset	ALARM RESET	ALM RESET ALM ALL RESET	
Manual recording	●REC	REC – REC STOP ●	
Stop recording	■STOP / REC STOP Press for 2 seconds or more	REC – REC STOP ● Press for 2 seconds or more	Available only during recording
Play	►PLAY	PLAY/PAUSE ►/Ⅱ	
Stop playback	■STOP / REC STOP	STOP ■	

Operation	WJ-RT208	WV-CU650	Note
Fast forward/rewind	◄◄REV FWD►►		When the shuttle ring is rotated clockwise: Slow playback, Normal speed playback, >>, >>>>, >>>>>>
Slow playback	Press for 2 seconds or more ►PLAY		When the shuttle ring is rotated counterclockwise: <<, <<<<, <<<<<<
Pause playback	‖ PAUSE	PLAY/PAUSE ►/‖	Available only during playback
Skip to the next frame	Press ►. or ►PLAY	(Only clockwise rotation is effective.)	Available only during pause
Skip to the next/previous record	◄◄ SKIP ►►		Available only during playback
Select a camera	Camera selection buttons 1, 2, … , 8	Camera number → CAM (SET)	
Select a multi-screen		MULTISCREEN	Switches in the following order each time the button is pressed 4-split screen (1-4 CH) → 4-split screen (5-8 CH) → 6-split screen → 9-split screen
Select a camera channel	Press ▲ or ▼.	CH number → MON (ESC)	Available only when displaying on a multi-screen
Select a camera to be displayed on the upper left area when displaying on a 6-split screen	Camera selection buttons 1, 2, … , 8	Camera number → CAM (SET)	Available only when displaying on a 6-split screen
Sequential display ON	SEQUENCE	TOUR SEQ / GROUP SEQ	It is possible to stop the sequential display by pressing the [TOUR SEQ/GROUP SEQ] button while holding the [SHIFT] button down.
Pause the displayed image	STILL	After displaying the "Max Still (305)" submenu of the WV-CU650 F1	

Note:

When the recorder is in the camera control mode (✛ ▱ ◉), some functions may be inoperable when controlling the recorder using the system controller. To use all functions, press the [OSD] button (▱) on the system controller for several times.

57

Troubleshooting

Prior to repairing services, verification should be carried out for the respective items specified below.
Contact a dealer if a problem cannot be solved even after checking and trying the solution, or if a problem is not described below, or when having an installation problem.

Problem		Check item/remedy	Page
Power is not turned on.	▶	Confirm whether the power plug is inserted in an AC wall outlet.	–
	▶	Is the power cord connected to the power outlet of this unit?	–
No camera images are displayed.	▶	Is the camera lens dislodged?	–
	▶	Is the power supply turned ON for the camera and connected devices?	–
	▶	Is the cable connected correctly?	–
	▶	Are the screen setup parameters correct?	Refer to page 33.
	▶	Confirm the user log-in security level.	Refer to page 22.
Images do not fit on the screen.	▶	This is not a fault. It is a resolution problem. Depending on the monitor, images will not fit on the screen.	–
Camera images look dark and pale.	▶	Aren't there dusts or dirt on the camera lens?	–
Parameter cannot be set up with a "SETUP MENU".	▶	Confirm the user level for log-in.	Refer to page 22.
Noise is generated during playback and images are sometimes distorted during playback.	▶	These may be occurred due to the performance of this unit. However, this is not an error.	–
Response is delayed when text is displayed, buttons are pressed, or the VMD function is activated.	▶	While "NetBackup" (data backup function) is being performed using the provided software, these responses may be delayed.	–

Specifications

■ Basic Specifications

General

Power supply	120 V AC, 60 Hz
Power consumption (approx.)	120 W
Ambient operating temperature	+5 °C - +45 °C (41 °F - 113 °F)
Ambient operating humidity	5 - 90 % (without condensation)
Dimensions	430 mm (W) x 88 mm (H) x 470 mm (D)
	[16.9" (W) x 3.5" (H) x 18.5" (D)]
Weight (approx.)	WJ-RT208K: 9.0 kg (19.9 lb) (No hard disk model)
	WJ-RT208: 10.0 kg (22.0 lb) (2 hard disks model)

Input/Output

Video	Video input	1.0 V[P-P]/75 Ω NTSC composite video signal (BNC) x 8
	Video output	1.0 V[P-P]/75 Ω NTSC composite video signal (BNC) x 1
		RGB output (15 pin D-sub) x 1
Audio	Audio input	–10 dB 22 kΩ (BNC) x 8
	Audio output	–10 dB 22 kΩ (BNC) x 1
Alarm	Alarm input	Voltage value alarm input (25-pin, D-sub) x 8
	Alarm output	Switch volume output (contact output of normally ON and normally OFF) (25-pin, D-sub)
Ethernet port		10BASE-T/100BASE-Tx (RJ-45) x 1
Remote interface		RS485 x 1 (25 pin D-sub)
Data interface		RS485 x 1 (RJ-11)
Data backup interface		High speed serial interface (front panel x 1, rear panel x 1, 0.8 Mbps to 1.3 Mbps of transfer rate depending on recorder operating state)
HDD interface		4 IDE interfaces are incorporated. (capable of installing eight hard disks)
Function	Video compression mode	MPEG4 ["CBR" (fixed bit stream)/"VBR" (variable bit stream)]
	Audio compression mode	ADPCM
	Picture quality (compressed level)	Class 5 (independent setting enabled for each line)
Image resolution		Live aspect 704 x 480
		Recording picture playback 352 x 240 (SIF)
	Image display	1-/4-/6-/9-split screen display
Image Recording Rate		Live recording of each line (1-30 frames/sec. for each line, adjustable)
	Simultaneous operation	Field multiscreen monitoring, recording, playback, network monitoring
	Recording Mode	Manual/Timer/Terminal/VMD/Power ON REC mode
	Video Motion Detection	140 items of motion detector area/motion detector sensitivity Class 99 can be independently set up for each line. (Adjustments are possible.)

■ Table of Recording Length

Approximate recording days

Table 1

Recording mode	Image quality	HDD capacity							
		250 GB	500 GB	750 GB	1000 GB	1250 GB	1500 GB	1750 GB	2000 GB
30 frames/sec	Super fine	7	14	21	28	35	43	50	57
	Fine	9	18	27	36	45	54	63	72
	Good	12	25	37	49	62	74	86	99
	Normal	17	34	51	68	86	103	120	137
	Extended	39	78	117	155	194	233	272	311

Caution:
1. Recording conditions: 8CH, Recording time: 10 hours/day, Stream type: "CBR", Audio selection: "Off", VMD: "Off", "I frame Inter.": 4 (default)
2. The recording time may differ from the values in the table above according to the selected picture quality.

Table 2

Recording mode	Image quality	HDD capacity							
		250 GB	500 GB	750 GB	1000 GB	1250 GB	1500 GB	1750 GB	2000 GB
30 frames/sec	Super fine	3	6	9	12	15	18	21	24
	Fine	4	7	11	15	19	22	26	30
	Good	5	10	15	20	26	31	36	41
	Normal	7	14	21	28	36	43	50	57
	Extended	16	32	48	65	81	97	113	130

Caution:
1. Recording conditions: 8CH, Recording time 24 hours/day, Stream type: "CBR", Audio selection: "Off", VMD: "Off", "I frame Inter.": 4 (default)
2. The recording time may differ from the values in the table above according to the selected picture quality.

Standard Accessories

CD-ROM .... 1 pc.
Operating Instructions (This Document) .... 1 pc.

Note: The files specified below are included on the CD-ROM.
   Network Operating Instructions (pdf)
   Net Client (software)

The following are for installation:
Power cord .... 1 pc.
HDD mounting screw
   WJ-RT208K .... 32 pcs.
   WJ-RT208 .... 24 pcs.