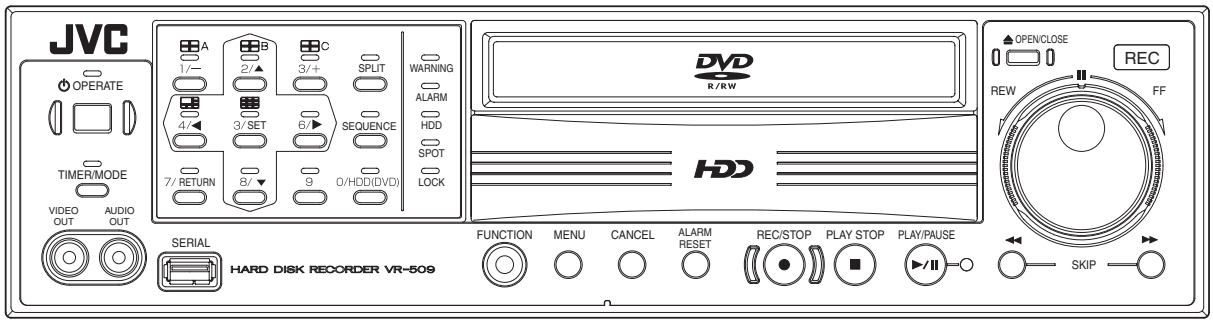
JVC®

DIGITAL VIDEO RECORDER

VR-509E

INSTRUCTIONS



Please read the following before getting started:

Thank you for purchasing this JVC product.

Before operating this unit, please read the instructions carefully to ensure the best possible performance.

Set the “TIME ZONE” before operating this unit.

For the setting method, refer to ‘Setting up Areas’ on page 18.

This instruction manual is made from 100% recycled paper.

LLT0094-001A

SAFETY PRECAUTIONS

Warning Notice
FOR YOUR SAFETY (Australia)

1.Insert this plug only into effectively earthed threepin power outlet.
2.If any doubt exists regarding the earthing, consult a qualified electrician.
3.Extension cord, if used, must be three-core correctly wired.

IMPORTANT (In the United Kingdom)
Mains Supply (AC 230 V)
WARNING - THIS APPARATUS MUST BE EARTHED

The wires in this mains lead are coloured in accordance with the following code;
GREEN-and-YELLOW : EARTH
BLUE : NEUTRAL
BROWN : LIVE
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.
The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked with the letter E or by the safety earth symbol or coloured GREEN or GREEN-AND-YELLOW.
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or which is coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

POWER SYSTEM
Connection to the mains supply

This unit operates on voltage of 220 V to 240 V AC, 50 Hz/60 Hz.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

To prevent electric shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified service personnel.

Note:
The rating plate and the safety caution are on the rear of the unit.

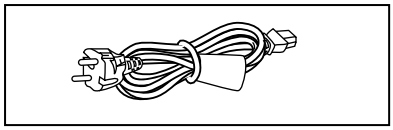
The OPERATE button does not completely shut off mains power from the unit, but switches operating current on and off.

Caution for AC Power Cord

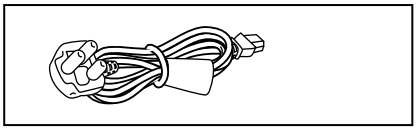
FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

Appropriate AC Power Cord must be used in each local area.

FOR CONTINENTAL EUROPE, ETC.
Not to be used in the U.K.



FOR U.K. ONLY
If the plug supplied is not suitable for your socket outlet, it should be cut off and appropriate one fitted.



WARNING

It should be noted that it may be unlawful to re-record pre-recorded tapes, records, or discs without the consent of the owner of copyright in the sound or video recording, broadcast, or cable programme and in any literary, dramatic, musical or artistic work embodied therein.

CAUTION

RED colour indications on the operation panel are provided but they are not safety related, RED colour indications:
(1) For Recording Button.

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

WARNING

For PLUGGABLE EQUIPMENT, the socket outlet shall be installed near the equipment and shall be easily accessible.

Information for Users on Disposal of Old Equipment

Attention:
This symbol is only valid in the European Union.

[European Union]

This symbol indicates that the electrical and electronic equipment should not be disposed as general household waste at its end-of-life. Instead, the product should be handed over to the applicable collection point for the recycling of electrical and electronic equipment for proper treatment, recovery and recycling in accordance with your national legislation.

By disposing of this product correctly, you will help to conserve natural resources and will help prevent potential negative effects on the environment and human health which could otherwise be caused by inappropriate waste handling of this product. For more information about collection point and recycling of this product, please contact your local municipal office, your household waste disposal service or the shop where you purchased the product.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

(Business users)

If you wish to dispose of this product, please visit our web page www.jvc-europe.com to obtain information about the take-back of the product.

[Other Countries outside the European Union]

If you wish to dispose of this product, please do so in accordance with applicable national legislation or other rules in your country for the treatment of old electrical and electronic equipment.

Erklärung zum Rauschen (für die Bundesrepublik Deutschland):
Maschinenlärminformations-Verordunung 3. GPSGV, 06.01.2004: Der höchste Schalldruckpegel beträgt 70 dB(A) oder weniger gemäß EN ISO 7779
JVC Professional Europe Ltd.Frankfult, Germany
Grüner Weg 10,61169 Friedberg/hessen, Germany
Tel. : +49 (06031) 6050

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* Continued on the next page

Changing VR-509 Settings Using a PC

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Getting Started

Main Features

- **Built-in hard disk drive with a high capacity of 320 GB**
- **Simultaneous recording of 100 images / sec in 9 channels**
  Recording up to 100 images/second.
- **Simultaneous Playback mode**
  Playback, jog/shuttle playback and skip play are possible during recording.
- **Direct search on the screen**
  Searches quickly for the date/time and alarm position to invoke.
- **Recovery Recording during power outage**
  Upon recovery from a power outage that occurred during recording, VR-509 will resume recording in the mode prior to the failure.
- **Timer Recording**
  Daily/Weekly timer recording up to 8 programs.
- **Alarm Recording**
  Switches automatically to the Alarm Recording mode as set in the menu when alarm signals are received during recording.
- **Supports 9-channel asynchronous camera inputs**
  Simultaneous recording/playback of images in 9 asynchronous cameras.
- **Network-compatible**
  Recorded images can be viewed on LAN-connected computers. Titles and timer programs can also be set using computers.
- **Motion Detect**
  Automatically detects image motion within the specified area and starts alarm recording.
- **Transmission of alarm e-mails**
  E-mails can be sent out to any computers during alarm input.
- **DVD Export Function**
  Enables recording images to be exported to DVDs.

How to Read this Manual

- **In the subsequent sections of this manual, this equipment shall be referred to as VR-509.**
- **The names of buttons used during operation are enclosed in [ ].**
  Example: MENU button → [MENU]

* All product names stated in this manual are trademarks or registered trademarks of their respective companies. Marks such as ™, ® and © are omitted in this manual.

Setting/Canceling the Operation Lock

The VR-509 is equipped with a secret operation lock to prevent the power from being switched off accidentally and from illegal recording operations.

Setting the Operation Lock

1. Sets the Operation Lock. (See page 48)

- Sets up the operation lock parameters and the cancellation method.

* Operations cannot be locked or cancelled when the setup menus are displayed, or during playback.

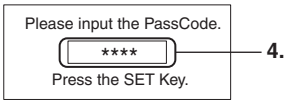
2. Press down on the [FUNCTION] key, and then press [SET].

- Operations will be locked.
  The LOCK LED will be illuminated when in the Operation Lock mode.

Canceling the Operation Lock

3. Press down on the [FUNCTION] key, and then press [CANCEL].

- When [BASIC] has been selected as the cancellation method:
  → Operations will be cancelled.
- When [PASSCODE] has been selected as the cancellation method:
  → The pass code entry screen will be displayed.



* When the pass code is being entered, asterisk (*) will be displayed instead of numerals.

4. Enter the pass code with the use of the ten-key pad, and then press [SET].

- Operations will be cancelled.

* If the [CANCEL] key is pressed, the entry screen will be cancelled and the entire process must be restarted from the beginning.

* Operations cannot be locked or cancelled when the setup menus are displayed, or during playback.
(Page 30 PASSCODE ERROR REC)
(Page 54 Pass Code Setup)

It is recommended that the descriptions on activating and canceling the operation lock are cut from the page and stored in a safe location for precautionary purposes.

PRECAUTIONS

Hard Disk Drive

The distance between the head and disk that read and write data on the hard disk drive (hereinafter known as the HDD) is a miniscule 0.02µm. Vibrations and physical shocks to the HDD may therefore result in the head coming into contact with the disk, producing dents and scratches to its surface. This will consequently prevent data from being read, and will result in disk crashes if use is continued. It is therefore necessary to handle the recorder with great care.

- **Installation and Changing the Location of Installation**
  - Do not move the recorder or commence the installation process when the power is turned on or immediately after the power has been switched off (for approximately one minute) under any circumstances. (The HDD will continue to rotate due to inertia for a few moments after the power has been switched off, and vibrations or physical shocks will result in damage.)
  - Wrap the recorder in protecting packing to prevent physical shocks.
- **Handling**
  - Handle this equipment with care. Do not subject it to physical shock.
  - Do not unplug the power cord during recording or playback, or when the HDD is being accessed.
  - The hard-disk is a consumable item. Replacement is recommended after 10000 hours of use (if use in a 25°C environment). For information on maintenance planning and costs, consult your nearest JVC dealer.
- **If a power failure occurs during formatting of hard disk, disconnection, or when configuring or disabling mirroring, operation of the equipment may be disabled even if it is connected to the UPS.**
- **Please note that we will not provide compensation for any failure during recording or playback due to defects in this equipment or the hard disk drive.**
- **Please note that recorded images will be erased when replacing hard disks. Note that there are cases where recorded images may be erased when firmware is upgraded.**

PRECAUTIONS (continued)

- **Place of storage and use**

  Please avoid storing or using this DVR in the following places:
  - Extremely hot or cold places beyond the allowable temperature for operation (5°C - 40°C).
  - Humid or dry places beyond the allowable humidity range for operation (30 % - 80 % RH).
  - Dusty or sandy places.
  - Places exposed to oil, smoke or steam, such as the kitchen vicinity.
  - Vibrating or unstable places.
  - Places prone to condensation.
  - Places that generates strong magnetic fields, e.g., transformer or motor.
  - Places near devices that generate electric waves, e.g., transceiver or mobile phone.
  - Places that generate radiation, X-rays or corrosive gases.
- **Handling the unit**
  - Please do not place heavy objects on the DVR, like a monitor or TV. Also, do not stack the VR-509E units on top of each other.
  - Please do not block the ventilation openings.
  - Avoid violent shocks to the unit. Do not drop the unit.
- **Maintaining the unit (Please turn off the power before performing maintenance work.)**

  Please wipe the unit with a soft cloth. Do not wipe it with thinner or benzene lest the surface melts or becomes dull. For stubborn stains, wipe first with a water-diluted neutral detergent and then wipe dry.
- **Please use the supplied power cord. Using a different type or damaged cord may cause fire or electric shock.**
- **To save energy, be sure to turn off the system when not in use.**
- Do not use the power cord supplied with this equipment on other devices.
- Do not stack up the equipment to prevent temperature within from rising.
- This product utilizes the open source software. Refer to the instruction on page 81 to display the precise information.
- Do not insert foreign object into this unit as this may cause malfunction or electric shock.
- A longer time may be required to search through data stored in this equipment if the volume is too huge (approximately 10,000 or more.). This is not a defect.
- TV broadcast or other video (audio) recordings are for personal use only. Unauthorized use of these materials is strictly prohibited.
- If the feet on the base of the unit are to be removed, make sure that screws with a length of 8mm or less are used when reattaching them.
- The width of the borders on split screens (dark portion) may vary according to the type of input signal. This is a characteristic of this equipment and is not a defect.
- Take the necessary precautions to prevent the recorder from toppling over when it is stood up vertically.
- Make sure that all static electricity has been discharged before touching the input and output terminals during installation and other procedures.
- Malfunctions can occur owing to static electricity, so avoid touching the rear panel during operations.
- The DVD drive unit is an expendable part. Although the service life of the DVD drive unit differs depending on the usage environment of the customer, replacement every 500 or so exports (approximately 1,000 hours) as a guide is recommended.

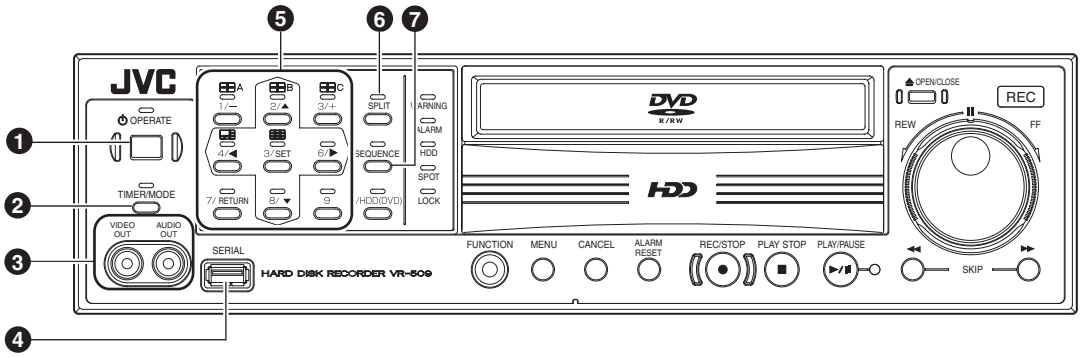
Copyrights

- The recording, dubbing, or playing of software containing a copyright protection signal is not possible on this DVD recorder.
- The usage of audio or video discs created using this DVD recorder either for financial gain or in broadcasting for widespread viewing may result in the legally-enforceable rights of the copyright holder being infringed.
- Unless the permission of the copyright holder has been obtained, audio or video discs created using this DVD recorder are to be used for personal enjoyment only.

Compensation for Damaged Content

- JVC accepts no responsibility whatsoever for damages incurred as a result of an inability to play or record audio and video content in the rare event that this DVD recorder, a DVD-R, or a DVD-RW fails to operate correctly.
- It is recommended that discs containing important content be backed up at regular intervals (i.e., on a yearly basis). Although digital signals do not deteriorate, storage environments can have an effect on a disc's aging characteristics, and this may result in an inability to play or record.
- If a disc should break, there will be no way to recover data from it.
- Proper playback of discs recorded using this DVD recorder on all devices is not guaranteed.

Part Names and Functions (Front Panel)



❶ [OPERATE] Button and Operate LED

Switches the main power on or off. The LED is illuminated when the OPERATE button is set to ON. (Page 16)

❷ [TIMER/MODE] Button

When the [TIMER/MODE (REC PATTERN)] setting on the [REC DETAIL] screen is set, the following is performed.

When the [TIMER/MODE (REC PATTERN)] setting is set at “PROGRAM TIMER”

Switches the timer ON. Press once again to switch the timer OFF. The LED is illuminated when the timer is set to ON. (Page 28)

When the [TIMER/MODE (REC PATTERN)] setting is set to other than “PROGRAM TIMER”

Changes the operation by switching between “STANDARD” ⇔ “REC PATTERN 1 to 9”. The LED is illuminated when in the “REC PATTERN 1 to 9” modes. (Page 28)

* The [TIMER/MODE] button cannot be used when the menu is being displayed.

❸ VIDEO OUT / AUDIO OUT Terminals

Outputs live images and live sound when in the live image display mode.

Outputs recorded images and sound during playback. However, sound will not be output in the following cases:

- When playing back still images, when running searches other than X1, and when playing back frame-by-frame.
- When playing back recordings with the [NORMAL AUDIO REC]/[ALARM AUDIO REC] setting on the [DETAIL REC] screen set at OFF.
- When a menu or search menu is displayed during playback.

❹ SERIAL Port

Used to connect the communication control terminals on flash memories (sold separately,) additional hard disk drives (sold separately,) and UPS (sold separately.)

❺ Keypad and Camera Input LED

- **[1] to [9]**

  Selects the camera input when viewing live images and when playing back recorded images. The LED that corresponds to the selected camera input is illuminated. And also these buttons are used as numeric keys.

- **[▲/▼/◀/▶]**

  Moves the cursor on the menus and playback menus. Changes the on-screen display position when live images (single screen) are displayed. (Page 46)

- **[–/+]**

  Changes the values set on the menus.

- **[SET]**

  Moves onto the next screen and sets the selected values on the menus.

  Executes hard disk scanning, formatting and other functions.

- **[RETURN]**

  Returns to the previous screen on the menus.

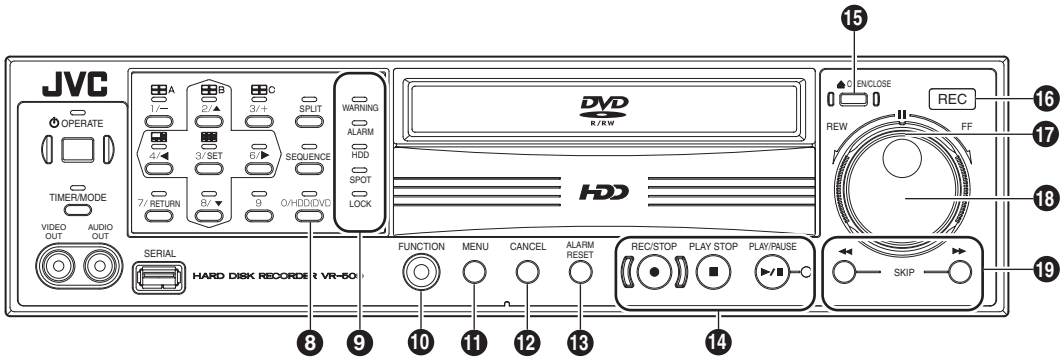
❻ [SPLIT] Button and LED

Switches live images and recorded images between the split screen and the single screen displays. The LED is illuminated when the screens are split.

❼ [SEQUENCE] Button and LED

Press this button to display live images in the single screen auto change mode or 4 division screen auto change mode. The LED is illuminated when in the AUTO CHANGE mode.

Part Names and Functions (Front Panel) (continued)



⑧ [HDD(DVD)/0]

HDD ⇔ DVD Button and LED

Press this button to switch operations between DVD and HDD. The LED is illuminated when in DVD operations.

- **[0] Button**

  Sets the value to 0.

⑨ Status LEDs

- **WARNING LED**

  Illuminated when a warning is in effect.

- **ALARM LED**

  Illuminated during ALARM REC. The LED will flash in red when ALARM REC has been completed.

- **HDD LED**

  Illuminated during built-in HDD access.

- **SPOT LED**

  Illuminated during SPOT operations.

- **LOCK LED**

  Illuminated during OPERATION LOCK.

⑩ [FUNCTION] Button

Press and hold this button followed by pressing the [PLAY STOP] button to adjust the seconds of the clock.

⑪ [MENU] Button

Displays the menu screen, and returns to the normal screen from the menu screen. (Page 17)

⑫ [CANCEL] Button

- Cancels the program timer setting and the record reservations. (Page 38, 39)
- Cancels the warning light and silences the warning buzzer.

⑬ [ALARM RESET] Button

Extinguishes the alarm and warning LEDs and silences the buzzer when an alarm or warning is in effect.

The alarm LED is extinguished.

⑭ Operations Buttons

- **[REC/STOP] Button**

  Starts and ends recording.

  Press for at least two consecutive seconds to stop recording. (Page 29)

- **[PLAY STOP] Button**

  Stops playback and still image playback. When recording and playing back simultaneously, playback is stopped and normal recording is activated.

- **[PLAY/PAUSE] Buttons and LEDs**

  Displays the playback menu (EVENT SEARCH screen) during live image display and recording.

  Pauses when pressed during playback.

  Resumes playback when pressed in the PAUSE mode. (Page 40)

⑮ [OPEN/CLOSE] DVD Open/Close Button

Opens and closes the DVD tray.

⑯ REC LED

Illuminated during recording. (Page 29)

⑰ Shuttle Dial

Changes the playback speed during playback and PAUSE mode. (Page 43)

⑱ Jog Dial

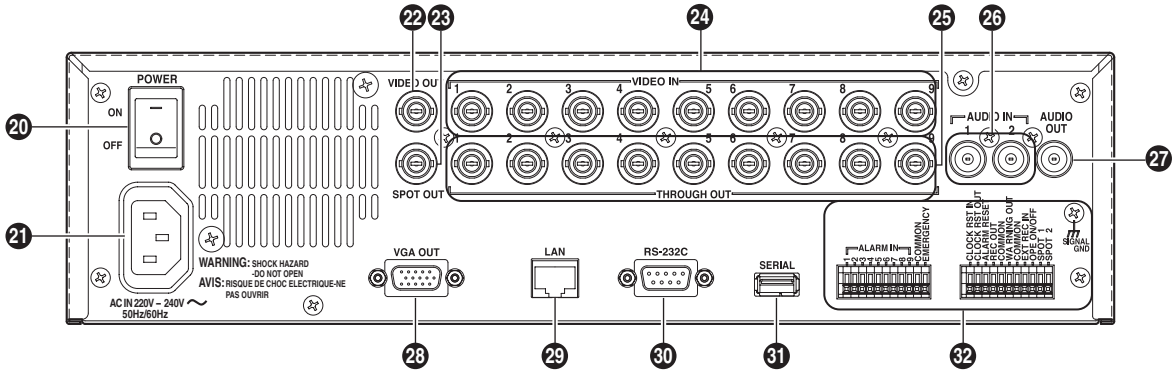
Plays back a single frame in the normal or reverse direction during playback and PAUSE mode. (Page 43)

⑲ [SKIP] Search Button

Jumps to the oldest record image or the latest record image of the hard disk when pressed in the playback menu mode.

Starts SKIP JUMP when pressed in the playback mode. (Page 44)

Part Names and Functions (Rear Panel)



20 Power Switch

Switches the power on or off. The OPERATE ON mode is automatically activated when the power is switched on. (Page 16)

* Make sure the system has been set in the OPERATE OFF mode before switching off the power supply.

21 [AC IN(220V - 240Vto)] Power Input Terminal

Connect using the power cable supplied to an AC 220 - 240 V outlet. (Page 16)

22 [VIDEO OUT] Terminal (BNC)

This function is the same as the [VIDEO OUT] terminal on the front panel.

23 [SPOT OUT] Terminal (BNC)

Outputs live images screens. Also enables different contents from the [VIDEO OUT] to be output. (Page 26)

24 [VIDEO IN] Camera Image Signal Input (BNC)

Connect this to the video output of the video camera (sold separately.)

25 [THRU OUT] Camera Image Output Terminal (BNC)

Output camera image signals that support the various [VIDEO IN] terminals. Also enables monitor televisions to be connected (automatic terminals.)

26 [AUDIO IN] Terminals 1 and 2 (RCA)

Connect this to the audio output terminal of the device from which audio signals are to be recorded.

27 [AUDIO OUT] Terminal (RCA)

This function is the same as the [AUDIO OUT] terminal on the front panel.

28 [VGA OUT] VGA Output Terminal (D-SUB 15PIN)

Outputs live images, playback images and the menu screens. Outputs the same contents as [VIDEO OUT]. (Page 24)

29 [LAN] Connection Interface (100 Base-T)

For connection to the Intranet and other networks using a LAN cable. (Page 65)

30 [RS-232C] Remote Terminal (D-sub 9PIN)

Enables the VR-509 to be controlled from an external source when connected to a personal computer or other device.

* See page 114 for details on the RS-232C interface.

31 [SERIAL] Serial Terminal (USB A-TYPE Female)

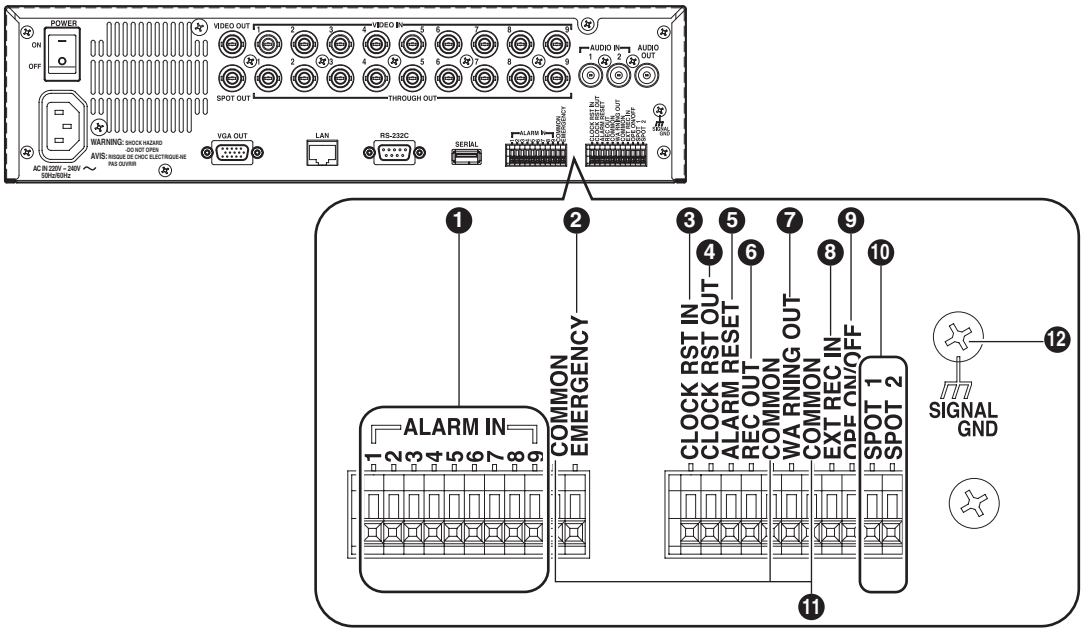
This port has the same function as the SERIAL port on the front panel.

32 Signal Input/Output Terminal

For operating VR-509 using external alarm signals or signals received from external devices, or for operating external devices by outputting signals. (Page 13)

* Diameter of applicable cables: AWG 22 to 28.

Part Names and Functions (Signal I/O Terminals)



❶ [ALARM IN 1 to 9] Terminals 1 - 9

ALARM REC is activated when signals are input to these terminals. (Page 33)

❷ [EMERGENCY] Terminals

EMERGENCY REC is activated when signals are input to these terminals. (Page 33)

❸ [CLOCK RST IN] Terminal

The terminal for resetting the time. The VR-509 clock is reset when signals are input. (Page 19)

❹ [CLOCK RST OUT] Terminal

The clock reset signal is output in accordance with the following timing:

- When the VR-509 internal clock is 00:00 or 12:00.

❺ [ALARM RESET] Terminal

Recording is stopped when this signal is input in the ALARM REC mode.

❻ [REC OUT] Terminal

Outputs the recording status of the VR-509. (Page 29)

❼ [WARNING OUT] Terminal

Outputs a signal when an operation abnormality or other error occurs on the hard disk. (Page 96)

❽ [EXT REC IN] Terminal

Activates recording with an external signal. (Page 29)

❾ [OPE ON/OFF] Terminal

Switches between OPE ON or OFF when the signal is input. (Page 16)

❿ [SPOT 1· 2] Terminal

The input signal selects the image to be output with SPOT OUTPUT. (Page 26)

⓫ [COMMON] Terminal

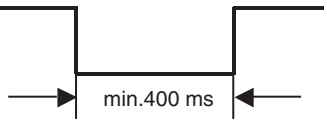
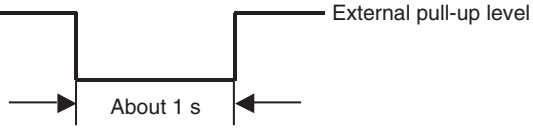
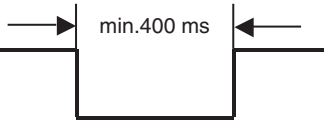
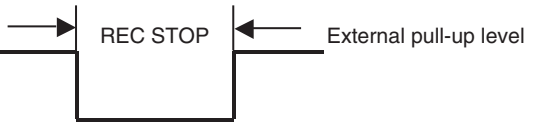
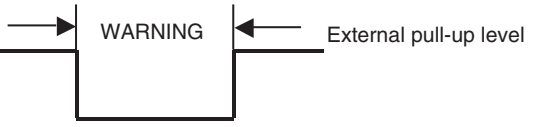
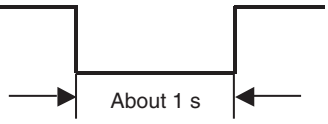
The common grounding terminal. Connected to the signal grounding terminal on the device connected.

⓬ [SIGNAL GND] Terminal

The common grounding terminal. Connected to the signal grounding terminal on the device connected.
(This can be used when there are insufficient common grounding terminals.)

* Do not use this terminal for protective earthing.

Part Names and Functions (Signal I/O Terminals) (continued)

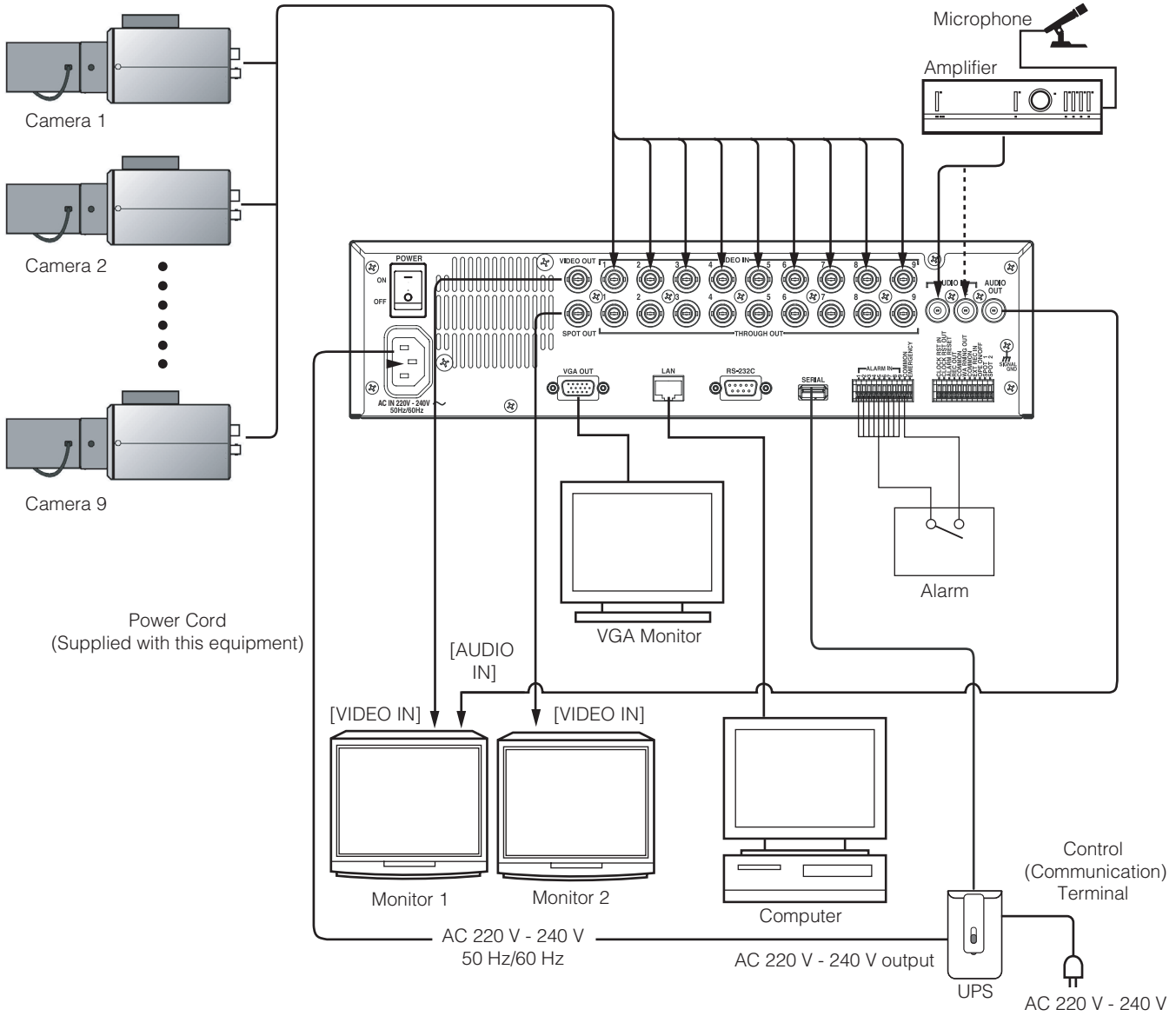
Terminal	Signal Level	Remarks
[ALARM IN] Alarm Input **[EMERGENCY]** Emergency Input **[EXT REC IN]** External Record Input	 * Set the output impedance to 10kΩ or less	Make Contact Input
[CLOCK RST IN] Clock Reset Input	 * Set the output impedance to 10kΩ or less	Make Contact Input
[CLOCK RST OUT] Clock Reset Output		Open collector (DC15V, 10mA or less)
[ALARM RESET] Alarm Reset Input	 * Set the output impedance to 10kΩ or less	Make Contact Input
[REC OUT] Record Status Output		Open collector (DC15V, 10mA or less)
[WARNING OUT] Warning Output		Open collector (DC15V, 10mA or less)
[OPE ON/OFF] Operate ON/OFF	 Switches to OFF when [OPERATE] is set at ON. Switches to ON when [OPERATE] is set at OFF.	Make Contact Input
[SPOT 1 · 2] Spot Output Selection	The SPOT output more is selected in accordance with a combined input of [SPOT 1·2] Make/Open. (Page 26)	Make Contact Input

System Connection (When connecting 9 Cameras)

Connection with up to 9 cameras is possible with VR-509's switcher.

<Example>

- Perform recording/playback by connecting to 9 cameras.
- Checking recorded images at Monitor.
- Execution of alarm recording upon detecting alarm signals.



Precautions:

- When TV video image signals other than those input by cameras are input, there are cases where live image display and REC playback will not operate normally.
- A message stating "No VIDEO IN * * Input (E-03)" will be displayed on the on-screen when a problem occurs with image signal input. (The number of the camera is displayed in * *). If recording is continued in this state, there is a possibility that accurate recording will not be possible not only with the affected camera, but also with normally operating cameras. In this case, either invalidate the input recording for which the problem occurred, or resolve the cause of the problem immediately. (See INTRODUCTION SET - 1 on page 20.)
- Make sure that the power supply to all devices is turned off before establishing the connections.
- Make sure that the input terminals to which no cameras are connected are set to "DISCONNECT" on the menu. See INTRODUCTION SET - 1 on page 20.)
- When a BNC connector is connected to THRU OUT, the built-in 75Ω end terminal will become OPEN. Connect the last device to the end terminal at 75Ω.
- When connecting other equipment, make sure the relevant instruction manuals are read thoroughly beforehand.
- See the section on Connecting to a PC on page 65 for details on establishing connections with personal computers.

Turning On/Off the Power

Switching the Power On

1. **Connect the Power Cable.**
   - Connect using the power cable supplied to an AC 220 V - 240 V 50Hz/60Hz outlet.

2. **Switch on the power switch on the rear panel.**
   - The main power is turned on to initiate a system check.
   - The OPERATE LED will blink.
   - The OPERATE LED will then be steadily illuminated, indicating that the OPERATE ON mode has been activated. Operations are possible when the REC/STOP mark appears on the on-screen menu.

CAUTION

Do not disconnect the power cable when the system check is being run under any circumstances. Failure to observe this may result in malfunctions.

Switching the Power Off

1. **Press the [OPERATE] button for at least two consecutive seconds to move across to the OPERATE OFF mode.**
   - The OPERATE LED will be extinguished.
2. **Switch off the power switch on the rear panel.**

MEMO

It is recommended that a UPS (Uninterruptible Power Supply) is used in consideration of power failures, etc.
(See System Connection on page 15)
(See Connecting a UPS on page 64)

Switching between OPERATE ON/OFF with the button on the front panel

It is possible to switch between the operational mode (OPERATE ON) and the stand-by mode (OPERATE OFF).

OPERATE ON

■ **Press the [OPERATE]** (when in the OPERATE OFF mode.) **button.**
- The OPERATE LED will blink.
- The OPERATE LED will then be steadily illuminated, indicating that the OPERATE ON mode has been activated. Operations are possible when the date and time appears on the on-screen menu.

* The OPERATE ON mode will be started up automatically when the power switch on the rear panel is switched on.

OPERATE OFF

■ **Press the [OPERATE] button for at least two seconds** (when in the OPERATE ON mode.)
- The OPERATE LED will blink.
- A message stating “Please wait...” will be displayed.
- The OPERATE OFF mode will then be activated, and the OPERATE LED will be extinguished.

* Activate the OPERATE OFF mode before switching off the power.

Switching between OPERATE ON/OFF with the signal I/O terminal

OPERATE ON

■ **Set the OPERATE ON/OFF terminal to Low (0V)** (when in the OPERATE OFF mode.)
- A system check will be started.
- The OPERATE ON mode will then be activated. Operations are possible when the date and time appear on the on-screen menu.

OPERATE OFF

■ **Set the OPERATE ON/OFF terminal to Low (0V)** (when in the OPERATE ON mode.)
- A message stating “Please wait...” will be displayed.
- The OPERATE OFF mode will then be activated, and the OPERATE LED will be extinguished.

* Activate the OPERATE OFF mode before switching off the power.

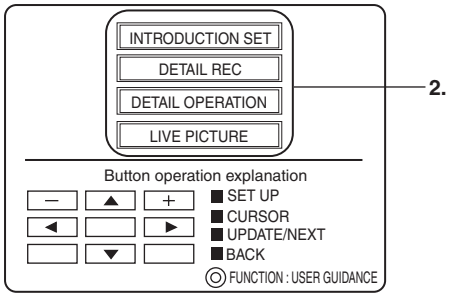
MENU Screen Operations

Displaying the MENU Screen

1. Press the [MENU] button.

- The MENU screen will be displayed.

* Press the [MENU] once again to close the MENU screen.



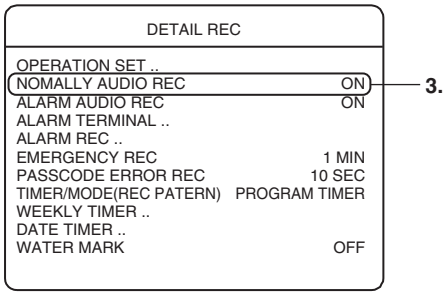
* Recording in the motion detection mode is not possible when operations are being carried out on the menu.

Proceeding to Other MENU Screens

2. Select your desired item with [▲/▼], and then press the [SET] button.

- The setup screen will be displayed.

* Press the [RETURN] to return to the previous screen.



* The above example is the “DETAIL REC” screen.

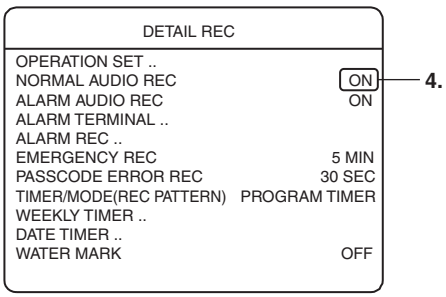
3. Select your desired item with [▲/▼]

- It is possible to change the value settings that are displayed on the right-hand side of the menu selections. → Proceed to 4.
- Menu selections that do not show values on the right-hand side advance onto different MENU screens when selected. Repeat procedure 2. until your desired screen is displayed.

Changing Value Setting

4. Change the value settings with [–/+].

- Press [–/+] to change the values displayed on the screen.

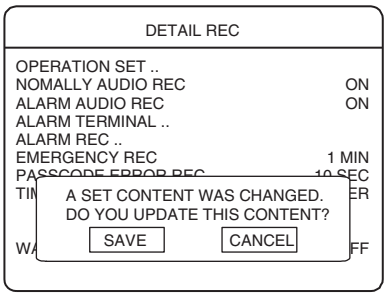


* The above example is the “DETAIL REC” screen.

Displaying the Confirmation Window

5. Press the [SET] button.

- The confirmation screen will be displayed.



* The above example is the “DETAIL REC” screen.

Saving the Setting

6. Select “SAVE” with [◀/▶], and then press the [SET] button.

- The settings will be saved accordingly.

* Select “CANCEL” with [◀/▶] and then press the [SET] button to close the confirmation screen. The settings will not be saved in this event.

Displaying User Guidance on the Menu Screen

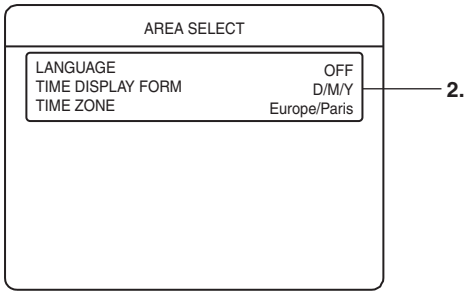
■ Press the [FUNCTION] button to display the user guidance in the menu screen display mode.

Closing the Menu

■ Press the [RETURN] button or the [MENU] button for at least two consecutive seconds to close the menu screen.

Setting up Areas

1. **Press the [MENU] button.**
   - Opens the menus in accordance with the instructions provided in MENU Screen Operations (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “MAINTENANCE” → “AREA SELECT”.



2. **Select your desired item with [▲/▼], and then press [–/+] to change the value settings.**

Selections Available

LANGUAGE

ENGLISH, GERMAN, FRENCH, ITALIAN, SPANISH

Selects the language required for MENU display.

TIME DISPLAY FORM

D/M/Y, Y/M/D, M/D/Y:

Selects the sequence in which the year, month and day are to be displayed.
(D = Day, M = Month, Y = Year)

TIME ZONE

Selects the area closest to your own address.

3. **Press the [SET] button.**
   - The confirmation screen will be displayed.

4. **Select “SAVE” with [◀/▶], and then press the [SET] button.**

Setting the Date/Time

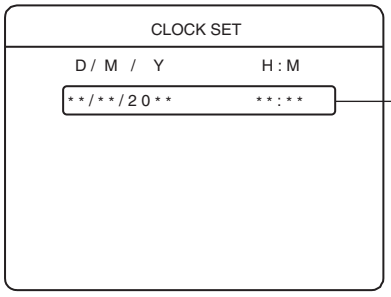
1. Press the [MENU] button.

- Opens the menus in accordance with the instructions provided in MENU Screen Operations (page 17) in the sequence of "MENU" → "DETAIL OPERATION" → "CLOCK SET".

* The time cannot be set when the VR-509E is recording, during DVD exporting, or when operating in the timer mode.

* Additionally, the time cannot be set when synchronization with the web browser NTP server has been activated. (See page 78)

* Take care when changing the date and time settings if recording data is stored on the hard disk. If the dates and times are duplicated or set earlier, there is a chance that the playback, skip, jump, search and other operations will not be performed normally.



2. Select your desired item with [◀/▶], and then press [–/+] to change the value settings.

- Set the current date and time in "D", "M", "Y", "H" and "M".

3. Press the [SET] button.

- The date and time will now be set. The clock will start operating at the set time with the second value at 00.

Adjusting the "seconds" Display with Button Operations

■ The "seconds" display is adjusted by pressing [PLAY STOP] while pressing down on [FUNCTION]. However, this will not be reset during recording.

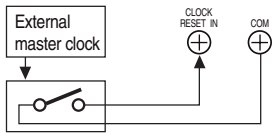
- When the "seconds" value is 29 or less, the "minutes" value remains unchanged, and the "seconds" value is reset to 00.
- When the "seconds" value is 30 or more, the "minutes" value is increased by one, and the "seconds" value is reset to 00.

Adjusting the "seconds" Display with the Signal I/O Terminal

■ **Clock Reset signal input terminal**

The recorder's clock will be reset when the relevant signal is input. The method of resetting the clock is the same as explained above in "Adjusting the "seconds" display with button operations."

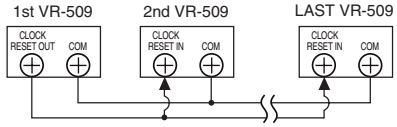
- It is possible to align the time with the master clock and the clocks on other equipment by receiving signals.



■ **Clock Reset signal output terminal**

The clock reset signal is output in accordance with the following timing:

- When the recorder's internal clock reaches 00:00 or 12:00.
- It is possible to align the clock with two or more VR-509E units in calibrations of seconds.



MEMO

- When the [CLOCK RESET OUT/IN] terminal is connected, the time for two or more VR-509E units will be synchronized twice a day at 12:00 noon and midnight.
- Make sure the power supply to the relevant units has been switched off before establishing the connection.

Adjusting the Clock with the NTP Server

It is possible to adjust the clock by connecting to the NTP server. See the section on [Adjusting the Clock with the NTP Server] on page 78 for more details.

* The internal clock is accurate to within about 60 seconds per month. (If used in a 25°C environment) For greater accuracy, access the NTP server.

* See "Using the NTP Server Function" on page 107.

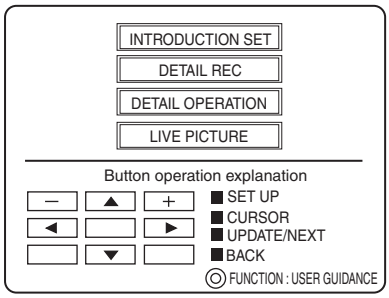
CAUTION

When aligning the clock during recording with the clock reset input or with the NTP server, there is a chance that the recording time will be duplicated if the clock has advanced past the actual time.
The search and audio playback functions will not operate normally in this event.

* It is recommended that the clock is adjusted to the correct time once per month to obtain accurate times.

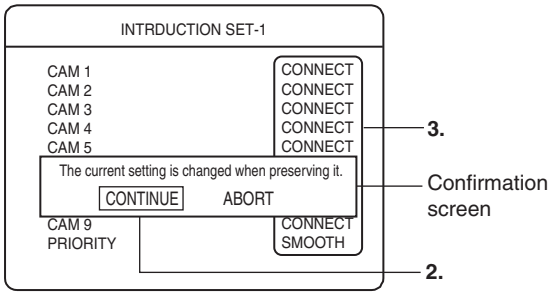
Installation Settings

1. Press the [MENU] button.



- Opens the menus in accordance with the instructions provided in MENU Screen Operations (page 17) in the sequence of "MENU" → "INTRODUCTION SET".
- The "INTRODUCTION SET - 1" screen will be displayed.

* The settings cannot be amended during recording.



2. Select [Continue] on the confirmation screen with the use of the [◀/▶] keys, and then press the [SET] button.

- The confirmation screen will close.

* Select [ABORT] and press the [SET] button to return to the top menu.

INTRODUCTION SET - 1

3. Select your desired item with [▲/▼], and then press [–/+] to change the value settings.

Settings

CAMERA1 to 9

CONNECT, DISCONNECT:
Sets the camera input that is to be used for recording at "CONNECT", and all other cameras at "DISCONNECT".

PRIORITY

SMOOTH: Sets and records with a total recorded frame count of 100 images per second, and a picture size of 352 x 288 pixels.

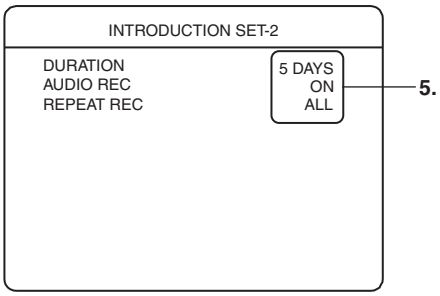
HIGH-QUALITY:
Sets and records with a total recorded frame count of 50 images per second, and a picture size of 720 x 288 pixels.

CAUTION

When the setting has been made for a specific number of cameras, it is only possible to amend [INTRODUCTION SET-1]. In order to amend the subsequent cameras, the [OPERATION SET] data (the F, RATE, QLY, and M.DET settings for NORMAL/REC/ALARM REC) that use [STANDARD] or [REC PATTERN 1 to 9] must be reset. (See "Setting the Operation Set" on page 31)

4. Press the [SET] button.

- The "INTRODUCTION SET - 2" screen will be displayed.



INTRODUCTION SET - 2

5. Select your desired item with [▲/▼], and then press [–/+] to change the value settings.

Settings

DURATION

1DAY, 3DAY, 5DAY, 1WEEK, 2WEEK, 3WEEK, 1MONTH, 2MONTH, 3MONTH:
Sets the period for which the recorded images are to be stored on the hard disc based on the preset recorded image mode and the number of cameras connected.

* This storage period only acts as a yardstick, as the actual period of storing images may differ depending on amendments to the frame rate, resolution and other settings in [INTRODUCTION SET-3] (refer to the section on recording time on page 110 for further details on the storage period for recorded images.)

AUDIO REC

ON, OFF: Sets whether to record sound audio when in the NORMAL REC and ALARM REC modes.

REPEAT REC

Sets the action when the remaining capacity in the hard disk becomes empty.

OFF: Stops recording.

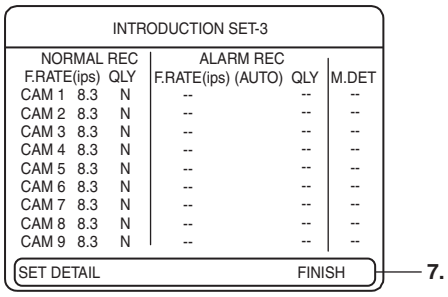
ALARM LOCK: Continues recording over old recordings. However, recordings made in the ALARM REC mode will not be overwritten.

ALL: Continues recording over old recordings.

Installation Settings (continued)

6. Press the [SET] button.

- The recording settings for the standard mode set on the “INTRODUCTION SET - 1” and “INTRODUCTION SET - 2” screens will be automatically set, and the “INTRODUCTION SET - 3” screen will be displayed.



INTRODUCTION SET - 3

7. Select your desired item with [▲/▼/◀/▶], and then press the [SET] button.

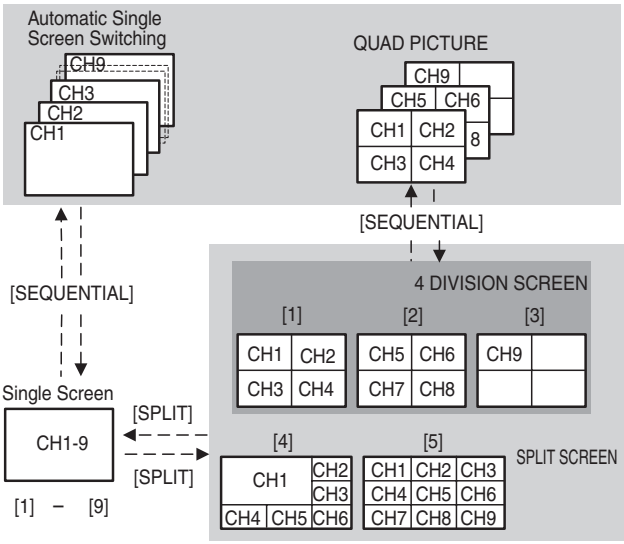
- Select “SET DETAIL” to change the recording settings for the standard mode. (See page 31)
- Select “FINISH” to end the INTRODUCTION SET procedure.

* All existing settings will be updated when these settings are saved after amendment.

Switching between Display Screens

The VR-509 enables images to be viewed on single screens, split screens, and sequential screens.

* It is not possible to change the sequential display when the playback screen is being displayed.



Single Screen

- The SPLIT display LED and the SEQUENCE display LED are both extinguished.

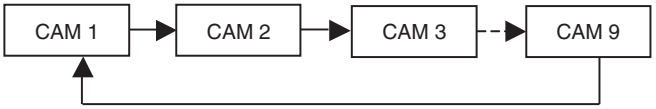
■ **Press buttons [1] to [9] to switch to the required camera input.**

■ **Press the [SPLIT] button to divide the screen into 9 split screens.**

■ **Press the [SEQUENCE] button to activate the automatic single screen.**

Automatic Single Screen

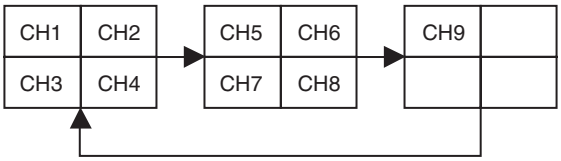
- The SPLIT display LED will be extinguished and the SEQUENCE display LED will be illuminated.



■ **Press the [SEQUENCE] button to display the single screen.**

QUAD PICTURE

- The SPLIT display LED and the SEQUENCE display LED will be both illuminated.



■ **Press the [SEQUENCE] button to display the 4 DIVISION screen.**

SPLIT Screen

- The SPLIT display LED will be illuminated, and the SEQUENCE display LED will be extinguished.

1. **Press [1] to display the 4 DIV PATTERN A screen.**

CAM 1	CAM 2
CAM 3	CAM 4

2. **Press [2] to display the 4 DIV PATTERN B screen.**

CAM 5	CAM 6
CAM 7	CAM 8

3. **Press [3] to display the 4 DIV PATTERN C screen.**

CAM 9	

4. **Press [4] to display the 6 DIV PATTERN screen.**

CAM 1		CAM 2
		CAM 3
CAM 4	CAM 5	CAM 6

5. **Press [5] to display the 9 DIV PATTERN screen.**

CAM 1	CAM 2	CAM 3
CAM 4	CAM 5	CAM 6
CAM 7	CAM 8	CAM 9

* The screen layout for the split screens are set on the “LIVE PICTURE” screen. (Page 23)

* The position of the border will differ slightly with live images and playback images.

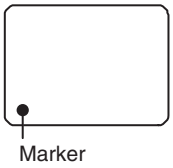
■ **Press the [SPLIT] button to display the single screen.**

■ **Press the [SEQUENCE] button to activate QUAD PICTURE. (Possible only when the 4 DIV screen is being displayed.)**

* Sequential displays are not possible from 6 DIV and 9 DIV displays.

MEMO

A marker that indicates the operational status of the VR-509 is displayed at the bottom left-hand side of the screen when the [live] screen is being displayed. (The position of the display cannot be changed.)



Marker color	Status of the VR-900E
Blue	Not recording
Red	Normal recording
Yellow	Alarm recording
White	Video loss

Changing the Layout of the Split Screens

1. Press the [MENU] button.

- Opens the menus in accordance with the instructions provided in MENU Screen Operations (page 17) in the sequence of “MENU” → “LIVE PICTURE”.

- The layout pattern that is set is displayed at the center of the screen.
- First of all, the 4 DIV PATTERN A screen will be displayed.

* The layout cannot be changed when in the playback mode.

2. Press [◀/▶] to select the division layout required.

- Changes sequentially in the order of 4 DIV PATTERN A → 4 DIV PATTERN B → 4 DIV PATTERN C → 6 DIV PATTERN → 9 DIV PATTERN → 4 DIV PATTERN A when [▶] is pressed.

3. Press the [SET] button.

- The sub-screen will be displayed within the blue border at the top left-hand side of the screen.

* The above is an example of QUAD PICTURE.

4. Press any of the [1] to [9] buttons.

- The camera input that corresponds to the number pressed will be displayed as a sub-screen inside the blue border.
- The blue border moves to the next sub-screen.

* The above is an example of QUAD PICTURE.

- Press the [0] button to select the black screen.
- Press the [SEQUENCE] button to return the blue border to the previous sub-screen and display the screen as it was prior to amendment.

5. Press the [SPLIT] button.

- The split-screen selection screen will be displayed.

■ Repeat procedures 2 to 5 to change the 6 DIV, 9 DIV or any other split-screen display layouts.

6. Press the [RETURN] button.

- A confirmation screen will be displayed.

* The above is an example of QUAD PICTURE.

7. Select “SAVE” with [◀/▶], and then press the [SET] button.

- Changes the layout of the split screen.

* Press [CANCEL] to return to the split-screen selection screen.

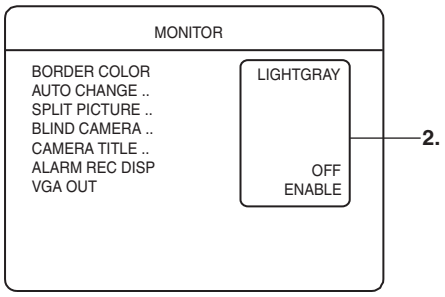
CAUTION

It is not possible to set 4 DIV A, 4 DIV B and 4 DIV C at the same location when setting up the layout for 4 DIV split screens.

Setting up monitor output

1. Press the [MENU] button.

- The [MENU] → [DETAIL OPERATION] → [MONITOR] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].

Settings

BORDER COLOR

Sets the brightness of the border lines for split screen displays.

BLACK/DARK GRAY/GRAY/LIGHT GRAY

* The brightness of the border lines for spot output will also change at the same time.

ALARM REC DISP

Sets the camera input to display when an alarm is detected.

OFF: Does not change the display

FIXED: Displays the camera input started with the most recent alarm recording. When alarm recording is started for multiple camera inputs simultaneously, each of these are displayed for a period of one second, and then the camera input with the small number will be displayed.

SEQUENTIAL:

Displays all of the camera inputs sequentially for a period of one second each during alarm recording.

VGA OUT

DISABLE: Does not output images from VGA OUT.

ENABLE: Outputs images from VGA OUT.

3. Press the [SET] button.

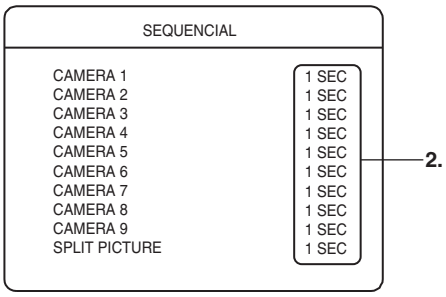
- The confirmation screen will be displayed.

4. Select [SAVE] with the [◀/▶] keys, and then press [SET].

SEQUENTIAL

1. Press the [MENU] button.

- The [MENU] → [DETAIL OPERATION] → [MONITOR] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].

Settings

CAMERA 1 to 9

Sets the time at which each screen is to be switched.

1 SEC, 2 SECS, 3 SECS, 5 SECS, 10 SECS:

Sequential display is carried out in accordance with the time set.

OFF: Sequential display not performed.

SPLIT PICTURE

1 SEC, 2 SECS, 3 SECS, 5 SECS, 10 SECS:

Sequential display is carried out in accordance with the time set.

3. Press the [SET] button.

- The confirmation screen will be displayed.

4. Select [SAVE] with the [◀/▶] keys, and then press [SET].

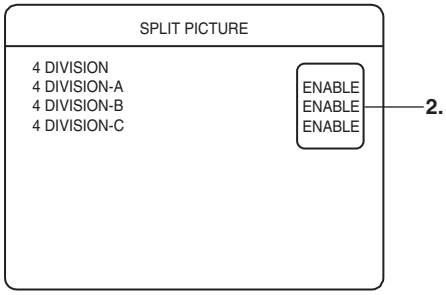
* Depending on the monitor being used, there are cases where images will be distorted for a short period of time when switching between screens when display is being carried out in the QUAD PICTURE sequential mode.

SPLIT PICTURE

Sets whether or not to display each screen with automatic switching when in the split picture mode.

1. Press the [MENU] button.

- The [MENU] → [DETAIL OPERATION] → [MONITOR] → [SPLIT SCREEN] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].

Settings

4 DIVISION A

DISABLE: Skipped.

ENABLED: Displayed.

4 DIVISION B

DISABLE: Skipped.

ENABLED: Displayed.

4 DIVISION C

DISABLE: Skipped.

ENABLED: Displayed.

3. Press the [SET] button.

- The confirmation screen will be displayed.

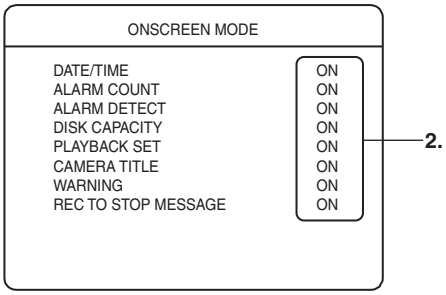
4. Select [SAVE] with the [◀/▶] keys, and then press [SET].

ONSCREEN MODE

Sets whether or not each of the settings are to be displayed during the ONSCREEN mode.

1. Press the [MENU] button.

- The [MENU] → [DETAIL OPERATION] → [DISPLAY/ OPERATIONS] → [ONSCREEN MODE] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].

Settings

- DATE/TIME: Displays the date and time.
- ALARM COUNT:
  Displays the alarm number (displayed as AL-**.) The most recently recorded alarm number will be displayed for live images. The alarm number for the recording being played back will be displayed when playing pack ALARM REC images.
- ALARM DETECT:
  I-AL-I will be displayed in red when an alarm is triggered.
- DISK CAPACITY:
  Displays the remaining disk capacity when the [REPEAT REC] parameter has been set at OFF (displayed as **%).
  The remaining disk capacity will not be displayed when the [REPEAT REC] parameter is set at “AL” or “ALARM LOCK”.
- PLAYBACK SET:
  Displays the playback mode (▶ or ▶▶, etc.,) and the operation status (blue circle, etc.)
- CAMERA TITLE:
  Displays the camera title that corresponds with the camera that is currently set.
  * The camera title will not be displayed for camera playback images that have been deleted after recording.
- WARNING:
  The on-screen warning and LED warning displays when a warning is triggered. (Example: MAINTENANCE PROCEEDING.)
- REC TO STOP MESSAGE:
  The “The record stopped” on-screen display and LED warning display.

Values

ON: Displayed.

OFF: Not displayed.

3. Press the [SET] button.

- The confirmation screen will be displayed.

4. Select [SAVE] with the [◀/▶] keys, and then press [SET].

* DISK CAPACITY display:

Viewing Live Images with SPOT Output

It is possible to view live images with the SPOT output function. The following two methods for changing the display contents for SPOT output are available:

- Changing SPOT output manually.
- Changing SPOT output with terminal input on the rear panel.

Changing SPOT Output Manually

Press and hold the [SEQUENCE] button, and then press the [SPLIT] button.

- The SPOT LED will be illuminated, and the SPOT OUT SELECT mode will be activated.
- Switch between the contents that are to be displayed for SPOT output using the same operations for monitor output with the use of the [1] to [9], [SEQUENCE] and [SPLIT] buttons.

Returning to the Monitor Output Selection Mode

Press and hold the [SEQUENCE] button, and then press the [SPLIT] button.

- The SPOT LED will be extinguished, and the MONITOR OUT SELECT mode will be activated.

Changing SPOT Output with Terminal Input on the Rear Panel

Make up the [SPOT1] and [SPOT2] terminals on the rear panel for 400 ms or more.

- The setup screen will change to SPOT output when the SPOT1 and SPOT2 terminals are input.

SPOT1	SPOT2	Changing screen
MAKE	OPEN	Displaying the next screen
OPEN	MAKE	Displaying the previous screen
OPEN	OPEN	No change

■ Displaying the next screen
When in the single screen mode: Switched alternately in the sequence 1 → 2 → 3 → ... → 9 → 1 →
When in the 4 DIVISION mode: Switched alternately in the sequence 4-A → 4-B → 4-C → 4-A ...
When in the 6 DIVISION and 9 DIVISION modes: Input is disabled.

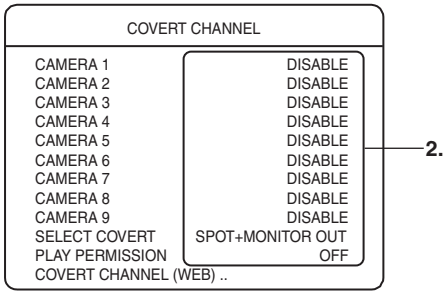
■ Displaying the previous screen
Switches the screens in the opposite sequence to that of “Displaying the next screen.”

■ Amending the layout
Switched alternately in the sequence SINGLE SCREEN → 4 DIVISION → 6 DIVISION → 9 DIVISION → SINGLE SCREEN

COVERT CHANNEL

Sets whether or not the screen is to be displayed in black without the camera inputs being displayed.

1. **Press the [MENU] button.**
   - The [MENU] → [DETAIL OPERATION] → [MONITOR] → [COVERT CHANNEL] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. **Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].**

Settings

CAMERA 1 to 9

ENABLE, DISABLE

SELECT COVERT

Selects the image output terminal for which the blind setting is to be enabled.

OFF: Disables the blind setting.

SPOT OUT, MONITOR OUT, SPOT + MONITOR OUT:
Enables the settings for selected output terminal.

PLAYBACK PERMISSION

Sets whether or not to permit the playback of inputs for which the COVERT CHANNEL setting has been enabled.

OFF, ON

3. **Press the [SET] button.**
   - The confirmation screen will be displayed.

4. **Select [SAVE] with the [◀/▶] keys, and then press [SET].**

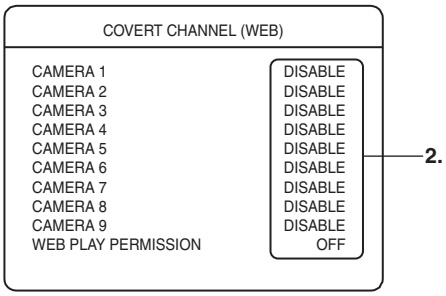
* Images will be recorded even when the COVERT CHANNEL settings are activated.

COVERT CHANNEL (WEB)

Sets whether or not the screen is to be displayed in black without the camera inputs being displayed when watching live images on a personal computer.

(Page 69 “Viewing Live Images Using a PC”
Page 73 “Viewing Playback Image Using a PC”)

1. **Press the [MENU] button.**
   - The [MENU] → [DETAIL OPERATION] → [MONITOR] → [COVERT CHANNEL] → [COVERT CHANNEL (WEB)] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. **Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].**

Settings

CAMERA 1 to 9

ENABLE, DISABLE

WEB PLAY PERMISSION

Sets whether or not to permit recorded images to be played back on a personal computer.

OFF, ON

3. **Press the [SET] button.**
   - The confirmation screen will be displayed.

4. **Select [SAVE] with the [◀/▶] keys, and then press [SET].**

* Images will be recorded even when the COVERT CHANNEL (WEB) settings are activated.

Recording Camera Images

Types of Recording

Normal Recording

The normal recording mode is operated as follows in accordance with the [TIMER/MODE (REC PATTERN)] setting made on the [DETAIL REC] screen (See page 30), and the ON/OFF setting for the [TIMER/MODE].

Table #1: Normal Recording Mode

	TIMER/MODE (REC PATTERN)	
	PROGRAM TIMER	**REC PATTERN 1 to 9**
TIMER/MODE OFF (LED extinguished)	Standard Mode	Standard Mode
TIMER/MODE ON (LED illuminated)	Timer Recording	REC PATTERN Mode

- **Standard Mode**
  - Performs recording with the Standard Mode.
  - Recording is started and stopped with the [REC/STOP] buttons. (See page 29)
  - Recording is started and stopped with the [EXT REC IN] terminal. (See page 29)

- **REC PATTERN Mode**
  - Performs recording with the mode settings established with [TIME/MODE (REC PATTERN)].
  - Recording is started and stopped with the [REC/STOP] buttons. (See page 29)
  - Recording is started and stopped with the [EXT REC IN] terminal. (See page 29)

Timer Recording

- Performs recording with the settings specified for WEEKLY TIMER and DATE TIMER.
  - WEEKLY TIMER settings. (See page 38)
  - DATE TIMER settings. (See page 39)
- Operations are not possible with the [REC/STOP] buttons or the [EXT REC IN] terminal.

Alarm Recording

Alarm recording is started when signals are input or motion is detected in the pause mode, and during normal recording and timer recording.

The following three types of alarm recording are available:

- **Emergency Recording**
  - Recording is started when a signal is input to the [EMERGENCY] terminal. (See page 33)
- **Alarm Recording (Signal input terminal)**
  - Recording is started when a signal is input to the [ALARM IN] terminal. (See page 33)
- **Alarm Recording (Motion Detection)**
  - Recording is started when motion is detected on the image. (See page 33)

Recording Priority

A sequence of priority exists for recording. Recording for a high-priority setting will be started midway through recording for low-priority settings.

1. Emergency recording
2. Passcode error recording
3. Alarm recording (signal input terminal, motion detection)
4. Date timer recording
5. Weekly timer recording
6. Normal recording

Making Normal Recordings

STANDARD MODE

1. **Set up the DETAIL REC parameters. (See page 30)**
2. **Set the normal recording parameters with [STANDARD MODE]. (See page 31)**
3. **Check to confirm that the LED for TIMER/MODE is extinguished.**

■ **Press the [REC/STOP] button.**
- Recording will be started.

■ **Press the [REC] button for approximately two consecutive seconds.**
- Recording will be stopped.

REC PATTERN 1 to 9

1. **Set up the DETAIL REC parameters. (See page 30)**

   The desired REC PATTERN mode can be set with the [TIMER/MODE (REC PATTERN)] setting on the [DETAIL REC] screen (select from REC PATTERN 1 to 9.)
2. **Set the normal recording parameters with [REC PATTERN 1 to 9]. (See page 31)**
3. **Press [TIMER/MODE].**
   - The TIMER/MODE LED will be illuminated.

■ **Press the [REC/STOP] button.**
- Recording will be started in accordance with each normal mode setting.

■ **Press the [REC] button for approximately two consecutive seconds.**
- Recording will be stopped.

MEMO
- The contents from the start to the end of recording are saved on the hard disk as a single event.
- The [REC] indicator on the front panel will be illuminated during recording if the [REC INDICATOR] setting on the [OPERATION] screen is set at [ON].
- It is possible to set the operations that are to be performed when the hard disk runs out of space with the [REPEAT REC] setting on the [OPERATION] screen. When the [REPEAT REC] setting is set at [ALARM LOCK] or [ALL], recordings will be written over the oldest recordings to enable operations to continue. (See “Operation Setup” on page 32)

Making Normal Recording with the EXT REC I/O Terminals

Enables the start and stop operations when recording to be controlled by signals input to the [EXT REC IN] terminal on the rear panel, instead of the [REC/STOP] button.

1. **Set the [EXT REC IN] setting to [TRIGGER] or [MANUAL]. (See page 49)**

■ **When the [EXT REC IN] is set at [TRIGGER]**
- Normal recording is started when the [EXT REC IN] terminal is set to [MAKE].
- Press the [REC/STOP] button for approximately two consecutive seconds to stop recording.

■ **When the [EXT REC IN] is set at [MANUAL]**
- Normal recording is started when the [EXT REC IN] terminal is set to [MAKE].
- Recording is stopped when the [EXT REC IN] terminal is set to [OPEN].

Recording Status Notification

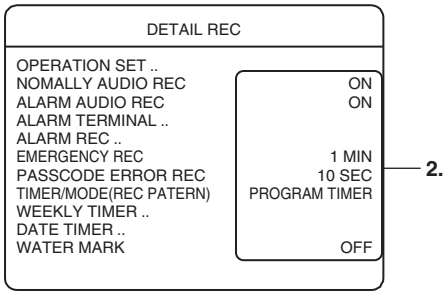
The status of the recording can be examined during recording with the use of the LED lamps and the signals output from the [REC OUT] terminal.

- Setting the operations for the recordings LEDs. (See page 32)
- Setting the [REC OUT] terminal. (See page 49)

Setting up the DETAIL REC

1. Press the [MENU] button.

- Opens the menus in accordance with the instructions provided in MENU Screen Operations (page 17) in the sequence of “MENU” → “DETAIL REC”.



2. Select your desired item with [▲/▼], and then change the setting with [–/+].

Settings

NOMALLY AUDIO REC

OFF: No audio signals recorded.

ON: Audio signals recorded.

* Audio sound will not be recorded when the frame rate per second is set at 0.08 or 0.2. (See page 31) (Page 45 “AUDIO OUT”)

ALARM AUDIO REC

OFF: No audio signals recorded.

ON: Audio signals recorded.

* Audio sound will not be recorded when the frame rate per second is set at 0.08 or 0.2. (See page 31) (Page 45 “AUDIO OUT”)

EMERGENCY REC

Sets the recording time when the EMERGENCY REC terminal is input.

OFF: Not record.

30SEC, 1MIN, 5MIN, 10MIN, 20MIN:
records in the set duration.

CONTINUE: Continue recording by the user performs the recording stop operation.

MANUAL: Continues recording while the signal is being input.

MEMO

The recording frame rate will be the total number of frames divided equally into the value entered for emergency recording when emergency recording (passcode error recording) is in operation (Total frame count: See page 31).

PASSCODE ERROR REC

Sets whether recording is to be carried out or not when an illegal passcode has been detected. Recording will be started with the same settings as [EMERGENCY] recording. However, it is not possible to forcibly stop recording by pressing the [CANCEL] button.

OFF: Recording not started when the wrong passcode is entered.

10 SEC, 20 SEC, 30 SEC:
Starts recording only to the period of time set when the wrong passcode is entered.

(Page 54 “Pass Code Setup”)

TIMER/MODE (REC PATTERN)

PROGRAM TIMER:
Records according to weekly program timer or daily program timer.

REC PATTERN 1-9:
Records according to the respective operation setting.

WATER MASK

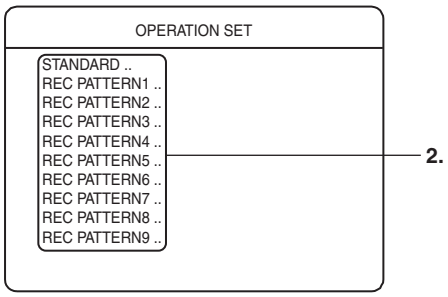
OFF: The WATER MASK function is deactivated.

ON: The WATER MASK function is activated.

Setting the Operation Set

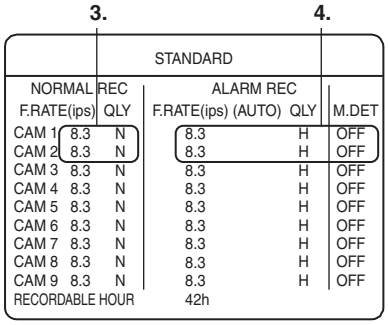
1. Press the [MENU] button.

- Opens the menus in accordance with the instructions provided in MENU Screen Operations (page 17) in the sequence of "MENU" → "DETAIL OPERATION" → "OPERATION SET".



2. Select your desired mode with [▲/▼], and then press the [SET] button.

- The "REC PATTERN SET" screen will be displayed.
- The amount of time that recording is possible in accordance with the set parameters will be displayed on the bottom line.
  The amount of time recording is possible with the remaining hard disk capacity will be displayed when the [REPEAT REC] parameter is set at [OFF]. The amount of time recording is possible with the total capacity of the hard disk will be displayed when the [REPEAT REC] parameter is set at [ALL] or [ALARM LOCK].



* The above is an example of STANDARD.

3. Select "NORMAL REC" with [▲/▼/◀/▶], and then select the frame count and resolution with [–/+].

Settings

F.RATE

0.08, 0.2, 0.4, 0.8, 1.7, 2.5, 5, 8.3, 12.5, 25:
Sets the number of frames (images) to be recorded per second.
---: Does not record.

QTY

H (High): High resolution recording
N (Normal): Normal resolution recording
B (Basic): Basic resolution recording
L (Long): Long-term resolution recording

4. Select "ALARM REC" with [▲/▼/◀/▶], and then select "QTY" "F.RATE" or "M.DET" with [–/+].

Settings

F.RATE

0.8, 1.7, 2.5, 5, 8.3, 12.5, 25:
Sets the number of frames (images) to be recorded per second.
---: Does not record
(AUTO): Records with the highest frame count possible when there are no effects from other inputs.
Highest frame count: The maximum frame count that can be used for recording divided equally.
A guide to the estimated recordable frame rate is displayed on the right-hand side of the [AUTO] display when all alarm recordings have been started.

QTY

H (High): High resolution recording
N (Normal): Normal resolution recording
B (Basic): Basic resolution recording
L (Long): Long-term resolution recording

M.DET

Sets the M.DET sensitivity.
OFF: Disables the M.DET mode.
NORM: Detects the M.DET sensitivity in normal mode.
USER: Detects the M.DET sensitivity in free mode.
DOOR H, DOOR L, HALL H, HALL L, CHECK H, CHECK L, ATM H, ATM L, LOBBY H, LOBBY L, GATE H, GATE L, PARK H, PARK L, DARK H, DARK L, ELEVATR, COUNTER:
Detects the M.DET sensitivity in set mode.

* See page 35 for more details.

5. Press the [SET] button.

- A confirmation screen will be displayed.

6. Select "SAVE" with [◀/▶], and then press the [SET] button.

Restrictions on the Settings for Frame Rate

- It is necessary to ensure that the total number of frames shown below in (1) to (3) are set so that they do not exceed 100 (or 50). The total number of frames are 100 when the [PRIORITY] setting on the [INTRODUCTION SET-1] screen (See page 20) is set at [SMOOTH], and 50 when it is set at [HIGH RESOLUTION].

  (1) Total number of frames during normal operations.

  (2) Total number of frames during alarm recording.

  (3) Total number of frames of either each camera, normal operations or alarm operations, whichever is the largest.

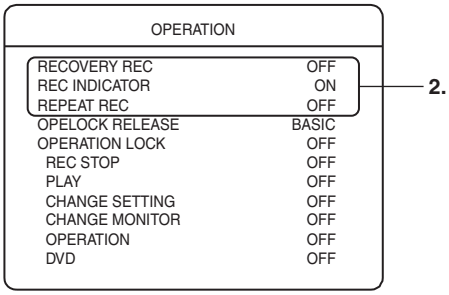
Setting the Operation Set (continued)

Procedure for Changing the Number of Cameras

1. **Take a note of all the [OPERATION SET] data settings (F.RATE, QLY and M.DET on NORMAL REC/ALARM REC) when [STANDARD] or [REC PATTERN 1 to 9] is in use.**
2. **Amend the setting for the number of operation cameras with [INTRODUCTION SET] as explained on page 20.**
3. **When the [INTRODUCTION SET] parameters have been amended with procedure #2, reset the [OPERATION SET] data settings that were listed in procedure #1.**

Operation Setup (RECOVERY REC, REC INDICATOR, REPEAT REC)

1. **Press the [MENU] button.**
   - The [MENU] → [DETAIL OPERATION] → [OPERATION SET] → [OPERATION] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. **Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].**

Settings

RECOVERY REC

Sets whether or not to perform recovery recording after a power failure.

OFF: Remains at OFF.
COMPULSION REC: Normal recording is started.
PRIOR STATE: Recording is started in accordance with the same settings prior to the power failure only when recording was being carried out before the power failure occurred.

REC INDICATOR

Sets whether or not to illuminate the recording indicator during recording.

OFF: Not illuminated.
ON: Illuminated.

REPEAT REC

Sets the operations to be carried out when the hard disk runs out of space.

OFF: Recording is stopped.
ALARM LOCK: Recording is continued while overwriting old recordings. However, the alarm log (including emergency and passcode error recording) will not be overwritten.
ALL: Recording is continued while overwriting all old logs.

* Details on REPEAT REC are provided on page 104.

3. **Press the [SET] button.**
   - The confirmation screen will be displayed.

4. **Select "SAVE" with [◀/▶], and then press the [SET].**

ALARM Recording

Alarm recording is started when signals are input and when motion is detected in the STOP mode, and during normal recording and timer recording.

Emergency Recording

1. **Connect the [EMERGENCY] terminal to the alarm device.**
2. **Setting the [DETAIL REC] screen. (Page 30)**

   Set the [EMERGENCY REC] setting to anything other than “OFF”.
3. **Setting for the alarm terminal. (Page 33)**

   Select the camera that is to be used for emergency recording with the [EMERGENCY REC] setting.
4. **Setting for the alarm recording. (Page 34)**

   Set the emergency recording time with the [DURATION] setting.

■ Recording is started when a signal is input to the [EMERGENCY] terminal.

Alarm Recording (Signal Input Terminal)

1. **Connect the [ALARM IN] terminal to the alarm device.**
2. **Setting the [DETAIL REC] screen. (Page 30)**

   Set whether alarm audio recording is to be activated or not with the [ALARM AUDIO REC] setting.
3. **Setting for the Operation Set. (Page 31)**

   Set the [F.RATE (ips)] setting for [ALARM REC] to anything other than “---”.
4. **Setting for the alarm terminal (Page 33)**

   Select the camera that is to be activated for the alarm input terminal.
5. **Setting for the alarm recording (Page 34)**

   Set whether the alarm recording time and pre-alarm recording are to be activated or not.

■ Recording is started when a signal is input to the [ALARM IN] terminal.

Alarm Recording (Motion Detection)

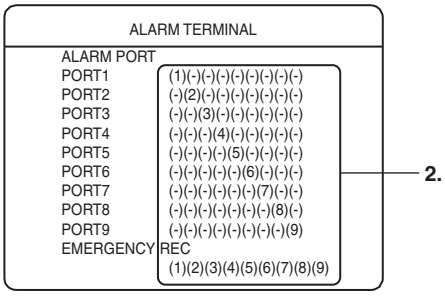
1. **Setting the [DETAIL REC] screen. (Page 30)**

   Set whether alarm audio recording is to be activated or not with the [ALARM AUDIO REC] setting.
2. **Setting for the Operation Set. (Page 31)**
   - Set the [F.RATE (ips)] setting for [ALARM REC] to anything other than “---”.
   - Set the [M.DET] setting to anything other than “OFF”.
3. **Setting for the alarm recording. (Page 34)**
   - Set whether the alarm recording time and pre-alarm recording are to be activated or not.
   - Set the motion detection level.
4. **Setting for the motion detection area. (Page 35)**

■ Recording is started when motions is detected in the input image.

Setting up the ALARM TERMINAL

1. **Press the [MENU] button.**
   - The [MENU] → [REC DETAIL] → [ALARM TERMINAL] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



   - The screen will display a matrix that shows the alarm input terminals on the vertical axis and the camera input on the horizontal axis.
   - If a camera input number is displayed on the right-hand side of the port number when a signal is input to each of the alarm terminals it is enabled, and if [-] is displayed it is disabled.

   * The corresponding camera input can also be set up for the emergency recording terminal in the same way.

2. **Select your desired item with the [▲/▼/◀/▶] keys, and then change the value of the setting with [–/+].**

Settings

ALARM PORT ↔ Corresponding Camera

(1), (2), (3), (4), (5), (6), (7), (8), (9):
Recording is started when a signal is input to the terminal.

[–]: Recording is not started even when signals are input to the terminal.

3. **Press the [SET] button.**
   - The confirmation screen will be displayed.

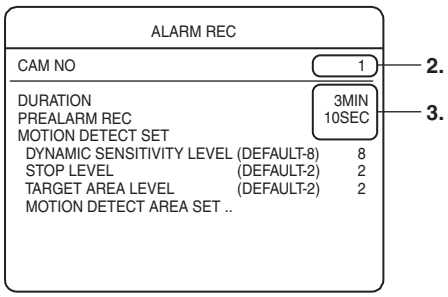
4. **Select [SAVE] with the [◀/▶] keys, and then press [SET].**

MEMO

- The [ALARM] indicator on the front panel will be illuminated during alarm recording and emergency recording. This will then blink when recording has finished.
- A buzzer will sound during alarm and emergency recording if the [ALARM] setting on the [BUZZER] screen is set at “ON”. (See page 49)
- Alarm recording and emergency recording will not be carried out when the setup menu is being displayed.
- The recording frame rate will be the total number of frames divided equally into the value entered for emergency recording when emergency recording (passcode error recording) is in operation (Total frame count: See page 31).

Setting ALARM Recording

1. **Press the [MENU] button.**
   - The [MENU] → [REC DETAIL] → [ALARM REC] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. **Select the camera input that is to be set up with [◀/▶].**

3. **Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].**

Settings

DURATION

10 SEC, 15 SEC, 30 SEC, 1 MIN, 3MIN, 5MIN:
Alarm recording is performed only for the period of time set.

MANUAL: Recording is continued during the period a signal is being input.

PREALARM REC

OFF: Pre-alarm recording is not performed.

10 SEC, 30 SEC, 60 SEC:
Pre-recording is performed only for the period of time set.

4. **Press the [SET] button.**
   - The confirmation screen will be displayed.

5. **Select [SAVE] with the [◀/▶] keys, and then press [SET].**

* Pre-alarm recording is only performed for alarm detection when ALARM REC has been set and recording is not being carried out at that time.
Details on pre-alarm recording are provided on page 105.

* Alarm recording that includes motion detection will not be carried out when the setup menu is open.

Ending ALARM Recording

Alarm recording is stopped when [ALARM RESET] is pressed and when a signal is input to the [ALARM RESET] terminal during alarm recording (signal input terminal, motion detection.)

Canceling the Alarm with the Button on the Front Panel

■ **Press [ALARM RESET] during alarm recording.**
- Alarm recording will be stopped.

Canceling the Alarm with the Signal Input Terminal

■ **Input a signal to the [ALARM RESET] terminal during alarm recording.**
- Alarm recording will be stopped.

* Set the frame rate for [ALARM REC] at anything other than [--] for [INTRODUCTION SET-3] or [OPERATION SET] when alarm recording is to be carried out.
(Page 21, 31)

* There are cases where the search time during playback will require additional time if the number of alarms is increased. It is recommended that the formatting process is carried out when the number of alarms exceeds 100,000.

Using the Motion Detection Function

There are two methods of performing motion detection: 1) with a pre-determined set of parameters, and 2) by freely setting detection sensitivity. It is also possible to set the area for which detection is to be carried out on the screen.

* Motion detection is not possible when operations are being carried out on the menu.

Motion Detection with Pre-Determined Sensitivity

Select either [STANDARD] or the scene name as the [MOTION DETECTION] setting on the [OPERATION SET] screen to perform motion detection with a pre-determined set of parameters. The parameters for the scene name are shown in the table below.

Table #1: Parameters for Each Scene

Scene	Detailed Settings		
	Dynamic Sensitivity Level	Stop Level	Target Area Level
Normal	8	2	2
User	[1 to 10] 8: default*	[1 to 3] 2: default*	[1 to 10] 2: default*
Entrance High	9	1	1
Entrance Low	8	3	2
Passage High	9	1	1
Passage Low	8	3	2
Register High	9	1	1
Register Low	8	3	2
ATM High	8	1	1
ATM Low	7	3	3
Lobby High	10	1	1
Lobby Low	9	3	2
Aisles High	10	1	1
Aisles Low	9	3	3
Car Park High	10	1	1
Car Park Low	9	3	3
Low Lighting High	10	1	1
Low Lighting Low	10	3	2
Elevator	9	2	1
Counter	7	2	2

* Default: The value set when the unit is shipped from the factory.
This can be selected from [DYNAMIC SENSITIVITY LEVEL], [STOP LEVEL] and [TARGET AREA LEVEL] on the [ALARM REC] setup screen (Page 34).

Dynamic Sensitivity Level:

The level value for detection. The higher the value, the higher the sensitivity (1 to 10).

Stop Level:

The offset value for the level of operation sensitivity. The larger the value, the more difficult to discontinue alarm detection (1 to 3).

Target Area Level:

The value for the size of the subject to be detected. The higher the value, the more difficult it is to detect small motions (1 to 10).

The relationship between the target area level and the detection area count is shown in the table below.

Table #2: Target Area Level and Detection Area Count

Target Area Level	1	2	3	4	5
Detection Area Count	1	2	4	6	8
Target Area Level	6	7	8	9	10
Detection Area Count	10	15	20	25	30

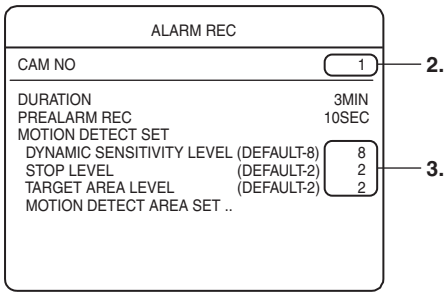
MEMO

- The Target Area Level is the setting for determining movement in areas more than the number of detection areas count in Table #2.
- The setting for the Target Area Level cannot exceed the parameter setting for [MOTION DETECT AREA SET] on page 37. Select the relevant Target Area Level for the number of detection areas in Table #2.
- The number of alarms will increase when motion detection has been set to be carried out frequently. Note that this may result in alarm searches requiring additional time during playback.
- There are cases where motion detection will be mistakenly triggered owing to flickering fluorescent lights when the camera is connected. In this event, set the camera settings to flickerless.

Motion Detection with Freely Determined Sensitivity Levels

When the [Motion Detection] value on the [OPERATION SET] screen is set at [USER], it is possible to set the sensitivity for [DYNAMIC SENSITIVITY LEVEL], [TARGET AREA LEVEL] and [STOP LEVEL]. These settings have no effect if anything other than [USER] has been specified.

1. **Press the [MENU] button.**
   - The [MENU] → [REC DETAIL] → [ALARM REC] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. **Select the camera input that is to be set up with [◀/▶].**

3. **Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].**

Settings

DYNAMIC SENSITIVITY LEVEL

The level value for detection. The higher the value, the higher the sensitivity .

Setting Range:

1 (low sensitivity) to 10 (high sensitivity)

TARGET AREA LEVEL

The level value for the size of the subject to be detected. The higher the value, the more difficult it is to detect small motions.

Setting Range:

1 (small) to 10 (large)

STOP LEVEL

The offset value for the level of operation sensitivity. The larger the value, the more difficult to discontinue alarm detection.

Setting Range:

1 to 3

4. **Press the [SET] button.**
   - The confirmation screen will be displayed.

5. **Select [SAVE] with the [◀/▶] keys, and then press [SET].**

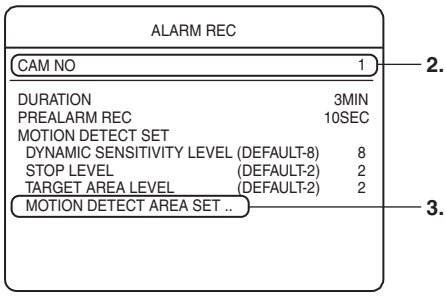
Manual Setup

Use the manual settings if the desired level of detection is not attained with STANDARD or OTHER SCENE. These three parameter values should be determined after referring to [Table #1: Parameters for Each Scene] and [Table #2: Target Area Level and Detection Area Count] on page 35.

Setting up the MOTION DETECT AREA SET

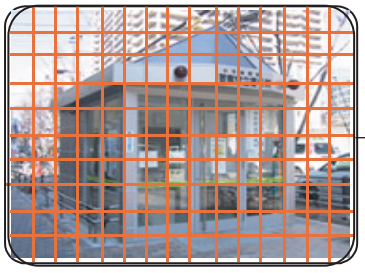
Sets up the area for motion detection. This setting is applicable for when both [USER] and any other parameter has been selected for the sensitivity level.

1. **Press the [MENU] button.**
   - The [MENU] → [REC DETAIL] → [ALARM REC] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. **Select the camera input that is to be set up with [◀/▶].**

3. **Select [MOTION DETECT AREA SET] with the [▲/▼] keys, and then press [SET].**
   - The [MOTION DETECT AREA SET] screen will be displayed. The screen will be divided by 16 x 12 to make a total of 192 areas. Each of these areas can then be enabled or disabled.



The current enabled area will be displayed in blue.
* The cursor is located at the top left-hand area when shipped from the factory.

4. **Select the desired area with the [▲/▼/◀/▶] keys, and then switch between Enabled/Disabled with [–/+].**
   - Press [+] to enable the area and display it in blue. Press [–] to disable the area.
   - Press [+] while holding down the [FUNCTION] key to enable all areas. Press [–] while holding down the [FUNCTION] key to disable all areas.

5. **Press the [SET] button.**
   - A confirmation screen will be displayed if the motion detection area has been changed with procedure #4. In this event, proceed to procedure #6.
   - A motion detection check screen will be displayed if the motion detection areas have not been amended. (See Motion Detection Check Mode on page 37)

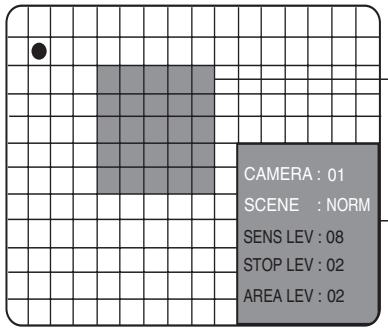
6. **Select [SAVE] on confirmation screen with the [◀/▶] keys, and then press the [SET] button.**
   - This completes the motion detection area registration procedure.

■ Press the [RETURN] button to return to the previous screen.

Motion Detection Check Mode

The Motion Detection Check screen will be displayed when [SET] is pressed on the [MOTION DETECT AREA SET] screen.

Motion Detection Check screen



■ Press the [–/+] keys to select the motion detection mode scene.

1. **Press the [SET] button to check motion detection.**

   The color of the circle at the top left-hand side of the check screen is set in accordance with the following conditions:
   Red: Motion detection enabled
   Gray: Motion detection disabled

2. **Press the [RETURN] button to return to the [Motion Detection Check] screen.**
   * If motion detection fails, press the [–/+] keys on the [Motion Detection Check] screen, amend the scene for the motion detection mode, and then perform the check once again.

■ Press the [RETURN] button to return to the previous screen.

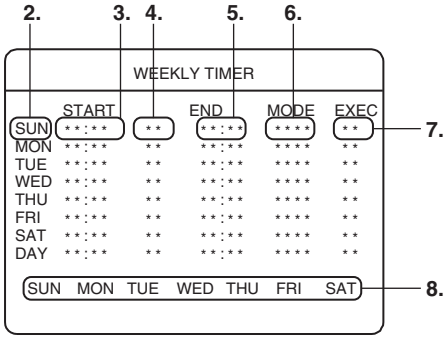
* Check to ensure that a setting that allows motion detection to be carried out is set for the [Motion Detection Set (Scene and Level Set)] parameters.
(See M.DET on page 31)
(See Motion Detection with Freely Determined Sensitivity Levels on page 36)

CAUTION

Motion detection is not possible if the number of motion detection areas is less than the Detection Area Count set for the Target Area Level in Table #2 of page 35.

WEEKLY TIMER

1. **Press the [MENU] button.**
   - Opens the menus in accordance with the instructions provided in MENU Screen Operations (page 17) in the sequence of “MENU” → “DETAIL REC” → “WEEKLY TIMER”.



2. **Set the starting day.**
3. **Set the starting time.**
4. **Set the ending day.**
5. **Set the ending time.**
6. **Select the “MODE”.**
7. **Select “EXEC”.**
8. **Set the day of recording.**

   (By setting “DAY” for the starting day, it is possible to select RECORD/NOT RECORD for every day of the week.)

* Press the [CANCEL] button to delete the settings.

Buttons Used for Procedures 2. to 8.

[▲/▼/◀/▶]: Selecting an item.
[–/+]: Changing the value settings.

Settings

“START” Day

SUN, MON, TUE, WED, THU, FRI, SAT:
Sets the day on which recording is to start.
DAY: When recording daily. You can set the recording day of the week in combination with the [Recording Day], such as Mon through Fri., etc.

“START” Time

00:00 to 23:59: Sets the time at which recording is to start.

“END” Day

SUN, MON, TUE, WED, THU, FRI, SAT:
Sets the day on which recording is to end.

“END” Time

00:00 to 23:59: Sets the time at which recording is to end.

MODE

STANDARD, REC PATTERN 1 to REC PATTERN 9:
Selects the appropriate setting from among multiple recording settings. (See OPERATION SET on page 31)

EXEC

OFF: Timer not executed.
ON: Executes once, and then changes to “OFF”.
WEEK: Executes the timer every week.

* When the starting day has been set to “DAY” note that only “ON” and “OFF” can be selected for this parameter. When “ON” has been selected, the time will be executed on a constant basis.

Recording Day

Sets the day of the week to be recorded when “DAY” has been selected for the starting day.
- The desired day of the week, “MON”, etc. will be recorded.
- Activates recording on “MON” or any other day displayed.
- [–] is displayed for days on which recording is not activated.

9. **Press the [SET] button.**
   - A confirmation screen will be displayed.

10. **Select [SAVE] with [◀/▶], and then press the [SET] button.**
    * If an incorrect parameter is set, a message will be displayed on screen and it will be impossible to move the cursor up or down or escape from the screen.
    In this event, either press the [CANCEL] key and reset the parameter, or re-enter the correct parameter.

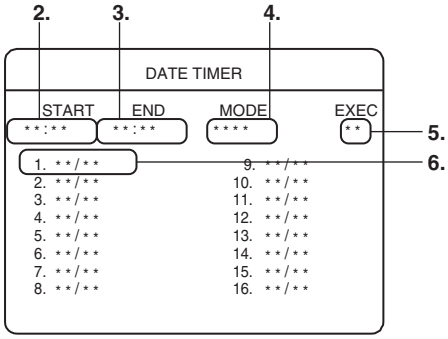
See page 39 for details on the operations required for timer recording and for the timer standby mode.

MEMO

- When the weekly timer and the date specification timer have both been set for operation, the priority is given to the date specification timer. (See page 28)
- When the program timer has been set to start up at the same time, the priority is given to the setting higher up the list.
- When multiple program timers have been set, the priority is given to the first time to start, and this setting is stored until time recording has finished.
  However, if two or more program timers have been registered after recoding has finished, the priority is given to the setting higher up the list, regardless of the starting time.

DATE TIMER

1. **Press the [MENU] button.**
   - Opens the menus in accordance with the instructions provided in MENU Screen Operations (page 17) in the sequence of "MENU" → "DETAIL REC" → "DATE TIMER".



2. **Set the starting time.**
3. **Set the ending time.**
4. **Set the "MODE".**
5. **Set "EXEC".**
6. **Set the day of recording.**

The Buttons Used for Procedures 2. to 6.

[▲/▼/◀/▶]: Selecting an item.
[–/+]: Changing the value settings.

Settings

"START" Time

00:00 to 23:59: Sets the time at which recording is to start.

"END" Time

00:00 to 23:59: Sets the time at which recording is to end.

MODE

STANDARD, REC PATTERN 1 to REC PATTERN 9:
Selects the appropriate setting from among multiple recording settings. (See OPERATION SET on page 31)

EXEC

OFF: Timer not executed.
ON: Executes the timer every year.

Recording Day

JAN 1 to DEC 31: Sets the date of recording.

7. **Press the [SET] button.**
   - A confirmation screen will be displayed.
8. **Select [SAVE] with [◀/▶], and then press the [SET] button.**
   * If an incorrect parameter is set, a message will be displayed on screen and it will be impossible to move the cursor up or down or escape from the screen.
   In this event, either press the [CANCEL] key and reset the parameter, or re-enter the correct parameter.

Activating the Timer Recording Mode

1. **Set the [TIMER/MODE (REC PATTERN) setting on the [DETAIL REC] screen to "PROGRAM TIMER". (See page 30)**
2. **Press the [TIMER/MODE] button on the front panel to illuminate the TIMER/MODE LED.**
   - The system will enter the timer standby mode.
   - Performs recording with the setting specified for WEEKLY TIMER or DATE TIMER.

■ The following operations are not possible when in the timer standby mode:
- Operations OFF.
- Operations OFF with the signal I/O terminals.
- Recording with the [REC/STOP/ button or the [EXT REC IN] terminal.
- Timer program amendments.

If the above operations are required, press the [TIMER/MODE] button to cancel the timer standby mode (the TIMER/MODE LED will be extinguished.)

MEMO

When the WEEKLY TIMER or DATE TIMER are in use, stop recording temporarily and then activate the timer standby mode.
The STOP mode cannot be activated when moving from the recording status into the timer standby mode directly.
There are cases where recording is continued, depending on the [OPERATION SET] settings.

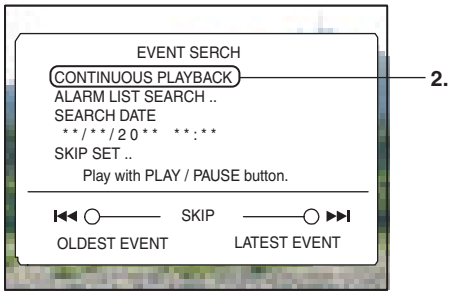
Playing Back Recorded Images

Playing Back Images

Plays back recorded images. This is activated by running a search according to the date of the image to be played back using “SEARCH DATE” (See page 43) or in accordance with the time when alarm signals are received using the “ALARM LIST SEARCH” feature. (See page 42)

1. Press the [PLAY/PAUSE] button.

- The “EVENT SEARCH” screen will be displayed.



2. Select [CONTINUOUS PLAYBACK] with [▲/▼], and then press the [SET] button.

- Playback will be started.

Pausing during Playback

3. Press the [PLAY/PAUSE] button.

- Playback will be paused.
- Press the [PLAY/PAUSE] button again to resume playback.

Ending Playback

4. Press the [PLAY STOP] button.

- The screen will return to the “EVENT SEARCH” screen.

5. Press the [PLAY STOP] button once again.

- The “EVENT SEARCH” screen will close.

Playing Back during Recording (Simultaneous Playback Mode)

It is possible to view recorded images when in the Recording mode.

This will not affect the images being recorded.

1. Press the [PLAY/PAUSE] button during recording.

- Images can be played back with the normal operations even when recording is in progress.

■ The following modes of playback are possible when in the Simultaneous Playback mode:

- Normal playback
- Search Date (Page 43 “Searching for Images According to Date/Time”)
- Jog/Shuttle Playback (Page 43 “Adjusting Playback Speed”)
- Skip Playback (Page 44 “Skipping Recorded Images”)

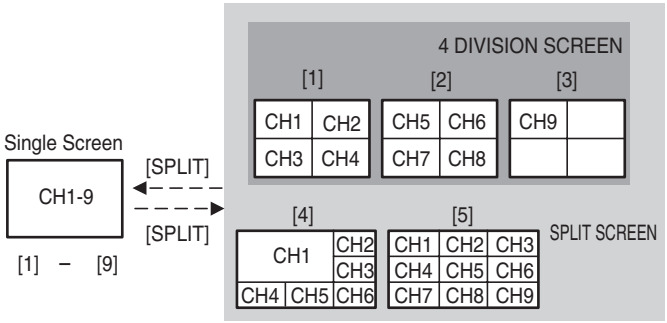
CAUTION

- There are cases where playback images are displayed after a delay when playback is activated at the same time as recording, but this has no adverse effects on the recording.
- In order to ensure that the hard disk is kept in its optimal status, the VR-509E will periodically enter the maintenance mode automatically. When maintenance is in progress there are cases where the audio sound may break up or the images be displayed after a delay during playback. In this event, wait until the [MAINTENANCE PROCEEDING] message has disappeared before restarting playback.
- There are cases where images recorded close to the times of power failures will not playback normally.
- The VR-509E uses a special recording method that may result in a loss of synchronization between the images and the audio sound, depending on the setup conditions.

Switching between Playback Screens

The VR-509 is equipped with features to playback images on single screens and split screens.

* Sequential display is not possible during playback.



Single Screen

- The SPLIT display LED and the SEQUENCE display LED are both extinguished.

CAMERA 1

■ **Press buttons [1] to [9] to switch to the required camera input.**

■ **Press the [SPLIT] button to divide the screen into 9 split screens.**

SPLIT Screen

- The SPLIT display LED will be illuminated, and the SEQUENCE display LED will be extinguished.

1. Press [1] to display the 4 DIV PATTERN A screen.

CAM 1	CAM 2
CAM 3	CAM 4

2. Press [2] to display the 4 DIV PATTERN B screen.

CAM 5	CAM 6
CAM 7	CAM 8

3. Press [3] to display the 4 DIV PATTERN C screen.

CAM 9	

4. Press [5] to display the 9 DIV PATTERN screen.

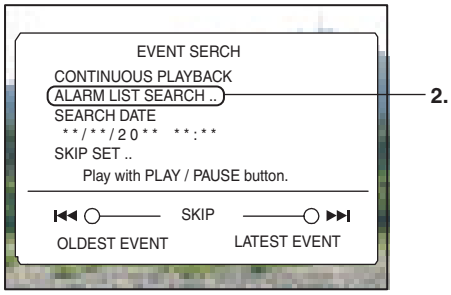
CAM 1	CAM 2	CAM 3
CAM 4	CAM 5	CAM 6
CAM 7	CAM 8	CAM 9

* The screen layout for the split screens are set on the “LIVE PICTURE” screen. (Page 23)
* The position the border will differ slightly with live images and playback images.
* The six-screen display cannot be activated even if the [4] button is pressed when the split-screen mode is in use. The nine-screen display will be activated in this case.

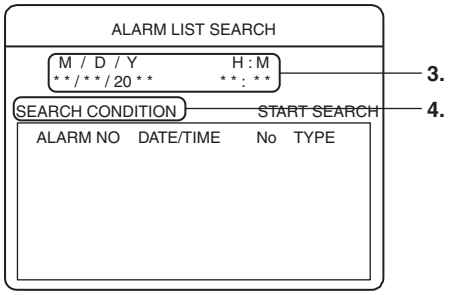
■ **Press the [SPLIT] button to display the single screen.**

Searching with the Alarm List

1. **Press the [PLAY/PAUSE] button.**
   - The “EVENT SEARCH” screen will be displayed.

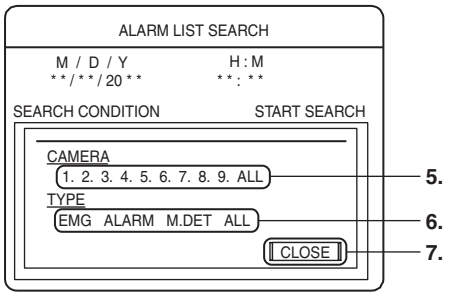


2. **Select [ALARM LIST SEARCH] with [▲/▼], and then press the [SET] button.**
   - The “ALARM LIST SEARCH” screen will be displayed.



3. **Select the year, month, day, hour and minutes with [◀/▶], and then change the values with [–/+].**
   - Proceed to 4. to change the search conditions.
   - Proceed to 8. if the search conditions are acceptable.

4. **Select [SEARCH CONDITIONS] with [▲/▼/◀/▶], and then press the [SET] button.**
   - The sub-window for entering the search conditions will be displayed.



5. **Select the camera input number to be retrieved with [◀/▶], and then press the [SET] button.**
   - A mark will be set beside the selected camera input number.

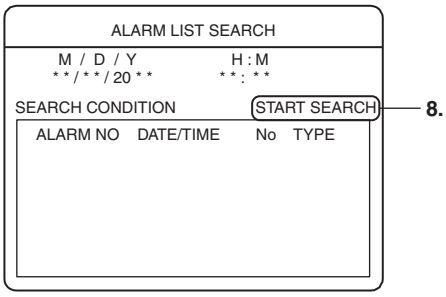
6. **Select the alarm type to be retrieved with [▲/▼/◀/▶], and then press the [SET] button.**
   - A mark will be set beside the selected alarm type.

TYPE

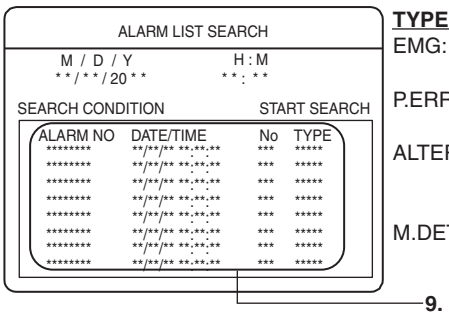
EMG: Emergency recording, Passcode error recording.
ALARM: Alarm recording with the signal input terminal.
M.DET: Alarm recording with motion detection.
ALL: Emergency recording, passcode error recording and all alarm recordings.

* The search will be run for all alarm types when the [TYPE] parameter has not been specified.

7. **Select [CLOSE] with [▲/▼], and then press the [SET] button.**
   - The search condition entry sub-window will be closed.



8. **Select [START SEARCH] with [▲/▼/◀/▶], and then press the [SET] button.**
   - A list of search results will be displayed.



TYPE

EMG: Emergency recording
P.ERROR: Passcode error recording
ALTERM: Alarm recording with the signal input terminal.
M.DET: Alarm recording with motion detection.

9. **Select the date of the recorded image to be played back with [▲/▼], and then press the [SET] button.**
   - The alarm image selected will be played back.

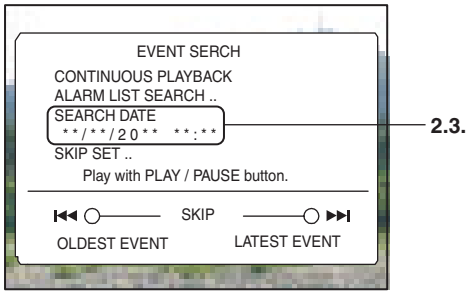
* Press the [–] key to jump to the oldest of 100 items of data. If the number of items remaining is less than 100, the oldest list will be displayed in the center. Press the [+] key to jump to the most recent of 100 items of data. If the number of items remaining is less than 100, the most recent list will be displayed in the center.

* The cameras that are enabled for the [COVERT CHANNEL] setting will not appear in any search results. In this event, either make sure that the [SELECT COVERT] setting does not include [MONITOR OUT], or set [PLAY PERMISSION] to [ON] and run the search once again. (See page 27)

* It will jump to the position for starting pre-alarm recording when pre-alarm recording exists. (See page 105 “Prealarm Recording”)

Searching for Images According to Date/ Time

1. **Press the [PLAY/PAUSE] button.**
   - The “EVENT SEARCH” screen will be displayed.



2. **Select [SEARCH DATE] with the [▲/▼] keys.**

3. **Select the year, month, day, hour and minutes with [◀/▶], and then change the values with [–/+].**

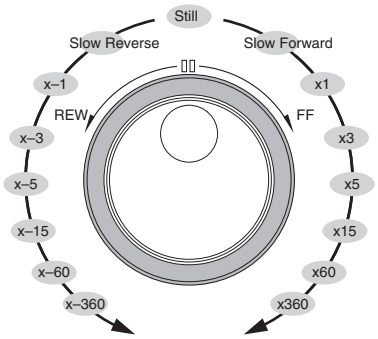
4. **Press the [PLAY/PAUSE] button.**
   - Playback will start from the search date and time.
   - Playback will start from the nearest date and time in the event that no images have been recorded on the specified date.

Adjusting Playback Speed (Jog/Shuttle Playback)

Playback speed can be adjusted by turning the jog/shuttle dial. This feature is very useful when searching for a specific screen for viewing.

Rotating the Shuttle Dial

- Rotate the shuttle dial during playback to change the mode to fast forward, fast rewind and slow playback.



* The playback speed indications when performing fast-forward and rewind operations by rotating the shuttle dial are merely guidelines. The speed will differ depending on conditions, such as the playback mode (split-screen, single-screen) and the recording mode (alarm recording, recording frame count,) etc.

* A guide to the slow reverse operations with the shuttle dial is listed below:
   - High-quality recording (25-frame recording) on a single-screen display: Slow playback at 12.5 frames.
   - Other modes on single-screen displays: All frames played back slowly.
   - Multi-screen displays: Slow playback at 5 frames.

Rotating the Jog Dial

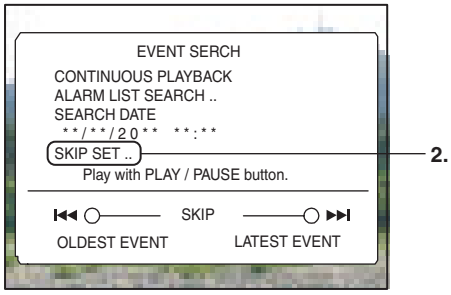
- Rotate the jog shuttle during playback, a single frame will be played back.
- Rotate the dial clockwise to playback a single frame in the normal direction.
- Rotate the dial counter-clockwise to playback a single frame in the reverse direction.
- Release the dial to pause.
  However, there are cases where the images will continue moving even after jog dial rotation has been halted when single-frame playback is continued in the normal or reverse modes.

Ending Jog/Shuttle Dial Playback

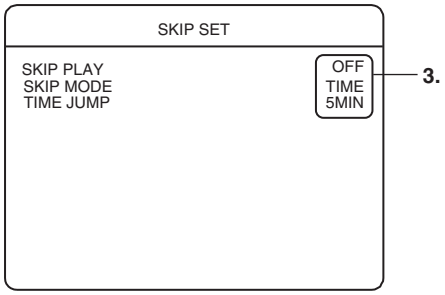
- Press the [PLAY/PAUSE] button to return to (normal speed) playback.
- Press the [PLAY STOP] button to return to the Event Search screen.

Skipping Recorded Images

1. **Press the [PLAY/PAUSE] button.**
   - The “EVENT SEARCH” screen will be displayed.



2. **Select [SKIP SET] with [▲/▼], and then press the [SET] button.**
   - The [SKIP SET] screen will be displayed.



* Skip playback is the repeated operation of Search → Playback → Search → Playback.

3. **Select your desired item with [▲/▼], and then change the setting with the [–/+] keys.**

Settings

SKIP PLAY

OFF: Disables the SKIP PLAY function.
1 SEC, 5 SEC, 10 SEC:
Playback is only carried out for the number of seconds set with this parameter, and the skip operations will be repeated in accordance with the conditions set for the [SKIP MODE].

SKIP MODE

TIME: Jumps for the duration specified with [TIME JUMP].
EVENT: Jumps to the record starting point (both NORMAL REC and ALARM REC.)
ALARM: Jumps to the ALARM REC starting point.
Jumps to the position for starting pre-alarm recording when pre-alarm recording exists.
(Page 105 “Prealarm Recording”)

TIME JUMP

1 MIN, 5 MIN, 10 MIN, 30 MIN, 1 HOUR, 4 HOURS, 1 DAY, 1 WEEK:
The duration of each jump when “TIME” has been specified for the SKIP MODE.

MEMO

See the section on [Skip Jump] on page 106 for details on skip operations.

4. **Press the [SET] button.**
   - A confirmation screen will be displayed.

5. **Select [SAVE] with [◀/▶], and then press the [SET] button.**

6. **Press [RETURN] to return to the [EVENT SEARCH] screen.**

7. **Select [CONTINUOUS PLAYBACK] to activate the playback mode.**

8. **Press the [SKIP] button during playback to jump to the previous or next image.**
   * If the [SKIP] button is pressed while the [EVENT SEARCH] screen is displayed, the display will jump to the oldest or the latest image.
   * Depending on the monitor being used, there are cases where images will be distorted for a short period of time when switching between screens when display is being carried out in the split-screen mode.

Enlarging Images (Image Zoom)

Images can be viewed in an enlarged mode.
Only single-screen displays can be enlarged.
* Enlarged displays are not possible when live images are being displayed.

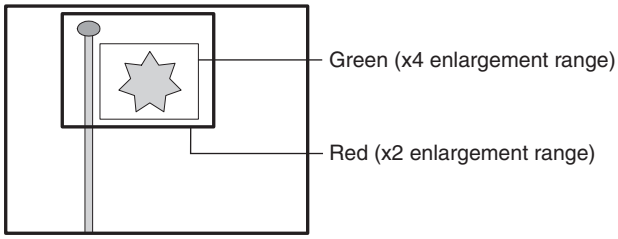
1. Start playback (See page 40 "Playing Back Images")

2. Press buttons [1] to [9] to select the camera input that is to be enlarged.

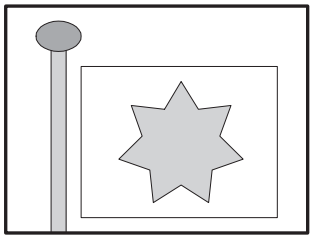
3. Press the [PLAY/PAUSE] button.
- Playback will be paused.
* It is possible to enlarge images during playback.

Double-Size Enlargement

4. Press the [1] to [9] buttons (the button pressed in 2.) for approximately two consecutive seconds.
- The range of enlargement will be displayed on the screen.

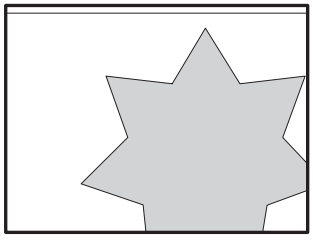


5. Move the range of enlargement with [▲/▼/◀/▶], and then press the [SET] button.
- The selected area will be displayed at double the size.
- Adjust the area being displayed with [▲/▼/◀/▶] if necessary.



Four-Fold Enlargement

6. Press the [+] button.
- The area will be displayed at four times the normal size.
- Adjust the area being displayed with [▲/▼/◀/▶] if necessary.
- Press the [–] button to return to the double-size display.



Ending the Enlarged Display

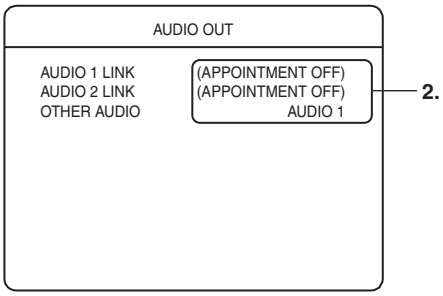
7. Press the [RETURN].

* If the [EVENT SEARCH] screen or the setup menu is displayed, the image zoom function will be ended and the image will return to its normal recorded size.

AUDIO OUT

Sets whether to link the AUDIO 1 or 2 to a specified input or not. Or sets the input audio that was not specified for the AUDIO 1 link or AUDIO 2 link.

1. Press the [MENU] button.
- Opens the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of "MENU" → "DETAIL OPERATION" → "MONITOR" → "AUDIO OUT".



2. Select your desired item with [▲/▼], and change the setting value with [–/+].

Settings

AUDIO 1LINK

● (APPOINTMENT OFF):The link is not specified.
CAMERA 1-9: AUDIO 1 output.
* Audio sound will be output when the single screen is displayed.

AUDIO 2LINK

● (APPOINTMENT OFF):The link is not specified.
CAMERA 1-9: AUDIO 2 output.
* Audio sound will be output when the single screen is displayed.

OTHER AUDIO

OFF: AUDIO not output.
AUDIO1: AUDIO 1 is output.
AUDIO2: AUDIO 2 is output.

3. Press the [SET] button.
- A confirmation screen will be displayed.

4. Select [SAVE] with [◀/▶], and then press [SET].

* Audio sound will not be output when the frame rate per second is set at 0.08 or 0.2. (See F.RATE on page 31)
* There are cases where the audio sound may break up when parts that contain many alarms are played back, and during multi-screen playback.

Changing the Onscreen Display Position

As can be seen in the illustrations below, the VR-509's DATE/TIME, camera title and other elements can be displayed on the monitor screen. It is also possible to change their position on the screen.

■ Set the display mode to live images on a single screen.

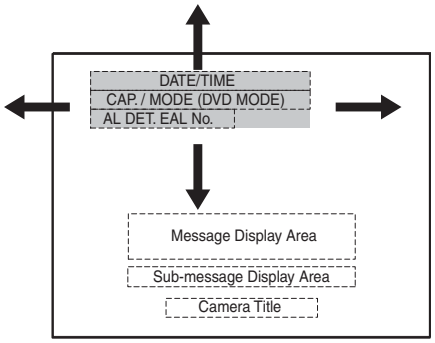
* The position of the display can only be changed when the single screen is displayed in the live image mode.

* It is possible to change the display position for each camera. Amend the positions for all cameras if necessary.

1. Press and hold the [FUNCTION] button and then press the [MENU] button.

- The onscreen display position adjustment mode will be activated.
- The "Date/time", "Disk capacity" and "Alarm" areas will be highlighted against a blue background.

DATE/TIME



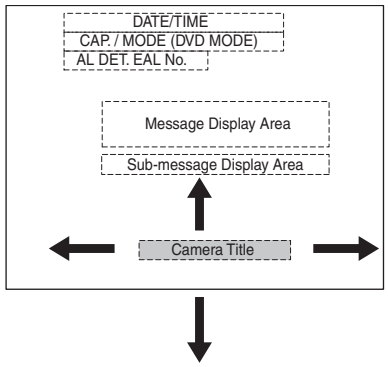
2. Press [▲/▼/◀/▶].

- The "Date/time", "Disk capacity" and "Alarm" areas will all move together.
- Do not move this sub-screen over the Message Display Area.
  Warnings and other messages will be overlaid and difficult to read.

3. Selects the camera for the live display.
Press the [1] to [9] button while pressing down on the [FUNCTION] button.

- The live images for the selected camera will be displayed.
- The "Title" area will be highlighted against a blue background, and the display position adjustment mode will be activated.

TITLE



4. Press [▲/▼/◀/▶].

- Move the "Title" position to any preferred location.
- Do not move this sub-screen over the Message Display Area.
  Warnings and other messages will be overlaid and difficult to read.

* Press the [CANCEL] button to return it to its original location.

5. Press the [MENU] button to display DATE/TIME position.

6. Press the [MENU] button in the state of "DATE/TIME" display position.

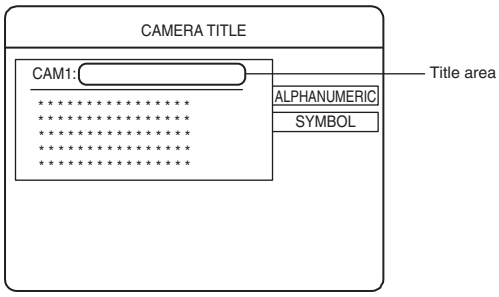
- The onscreen display position will be set in the system and the screen will return to the normal display.

MEMO

The size of the characters on the camera title for QUAD screen displays are the same as for single-screen displays. The display positions are also relative to the single-screen displays.

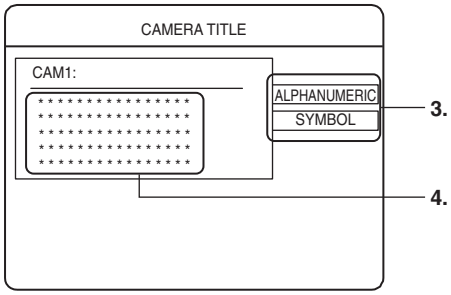
Setting Camera Title

1. **Press the [MENU] button.**
   - Opens the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “MONITOR” → “CAMERA TITLE”.



2. **Press the [SEQUENCE] button to select the camera input that is to be set.**
   - The camera input selection will change whenever the [SEQUENCE] button is pressed.

3. **Press the [SPLIT] button to select your desired type of characters for the input.**
   - The character types will change whenever the [SPLIT] button is pressed.



4. **Select the characters with [▲/▼/◀/▶], and then press the [SET] button.**
   - One character (word) will be entered into the camera title.

5. **Repeat procedures 3. to 4. until all camera titles have been entered.**
   * Press the [–] or [+] keys to move the cursor on the title area backwards and forwards.

Maximum characters: 20

   * Note that the on-screen display will overlay the operation status marker when the maximum character count is used. In this event, set the [PLAYBACK SET] setting on the [ONSCREEN MODE] screen to “OFF”. (See page 25)

Deleting Characters

- To delete a character from the title, align the cursor with the relevant character and press the [CANCEL] button.

6. **Press the [SEQUENCE] button after the camera title has been entered.**
   - The confirmation screen will be displayed.

7. **Select [SAVE] and press the [SET] button to save the title.**
   - Proceed onto entering the next camera title.
   * Press the [CANCEL] button to return the title to its original status.

8. **Press the [RETURN] button to return to the previous menu.**

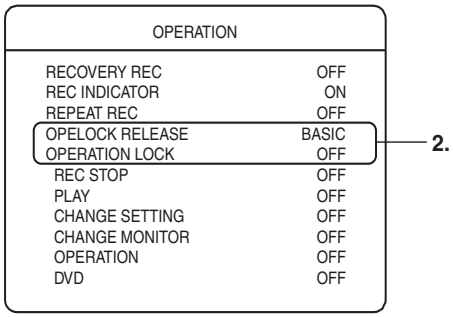
CAUTION

- If a connected camera is reset to “DISCONNECT”, the camera title for that camera will no longer be displayed. The camera title will also not be displayed when images recorded previously are played back.
- When the camera title is amended midway through operations, the amended camera title will be displayed when images recorded prior to the amendment are played back.

Setting OPERATION LOCK

1. Press the [MENU] button.

- Opens the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “ONSCREEN/OPERATION” → “OPERATION”.



2. Select your desired item with [▲/▼], and then change the setting with [–/+].

Settings

OPE LOCK RELEASE

BASIC: Cancels the lock with button operation.
PASSCODE: Passcode input required to cancel lock. (Page 54 “Pass Code Setup”)

* Only “BASIC” can be set when nothing has been specified for the passcode. “PASSCODE” cannot be specified.

OPERATION LOCK

OFF: Disables the “OPERATION LOCK”.
REC STOP: Some of the button operations are prohibited. (See table 4)
ALL: All of the button operations are prohibited. (See table 4)
USER: User can set the button operation to be prohibited optionally. (See table 5)

Operation type
REC STOP, PLAY, CHANGE SETTING, CHANGE MONITOR, OPERATION, DVD

Options
ON, OFF

3. Press the [SET] button.

- A confirmation screen will be displayed.

4. Select [SAVE] with [◀/▶], and then press the [SET] button.

* Menu setup is possible even when the operation lock has been activated when the [CHANGE SETTING] parameter on the [USER] settings has been set at “OFF”. However, the parameters related to the operation lock cannot be amended. Amendments to the operation lock settings can only be made after the operation lock has been cancelled.

Table 4: Buttons to be prohibited (REC STOP, ALL)

Front Button	REC STOP	ALL
[REC] [ALARM RESET]	OFF	OFF
[STOP] [PLAY/PAUSE] [SHUTTLE DIAL] [JOG DIAL] [SKIP]	ON	OFF
[MENU]	OFF	OFF
[FUNCTION]	ON	OFF
[KEYPAD 1-9] [SPLIT] [SEQUENCE]	ON	OFF
[OPERATE] [TIMER/MODE]	OFF	OFF
[CANCEL]	ON	OFF
[HDD(DVD)/0] [OPEN/CLOSE]	OFF	OFF

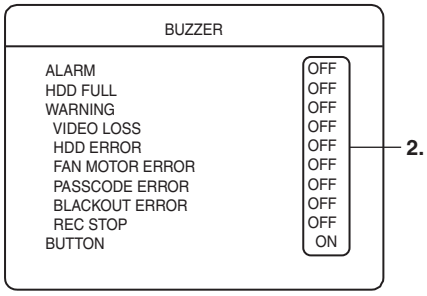
Table 5: Buttons to be prohibited (USER)

Front Button	Type
[REC] [ALARM RESET]	REC STOP
[STOP] [PLAY/PAUSE] [SHUTTLE DIAL] [JOG DIAL] [SKIP]	PLAY
[MENU] [FUNCTION]	CHANGE SETTING
[KEYPAD 1-9] [SPLIT] [SEQUENCE]	CHANGE MONITOR
[OPERATE] [TIMER/MODE] [CANCEL]	OPERATION
[HDD(DVD)/0] [OPEN/CLOSE]	DVD

* The Operation Type for the operation lock cannot be changed between ON/OFF when the operation lock has been set at [ENABLE] with the [USER] setting.

Buzzer Setup

1. **Press the [MENU] button.**
   - The [MENU] → [DETAIL OPERATION] → [Display/Operation] → [BUZZER] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. **Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].**

Settings

ALARM

OFF, ON

HDD FULL

OFF, ON

WARNING

OFF: The buzzer will not sound.
ALL: The buzzer will sound whenever any type of warning is issued.
USER: Selects whether or not to set the buzzer for sounding depending on the warning type.
Warning Types
VIDEO LOSS, HDD ERROR, FAN MOTOR ERROR, PASSCODE ERROR, BLACKOUT ERROR, REC STOP
Selection:
OFF, ON
* The buzzer will not sound even when the warning buzzer parameter has been set at “ON” if the [WARNING] setting on the [ONSCREEN MODE] menu has been set at “OFF”.
* The buzzer will not sound even when the REC STOP buzzer parameter has been set at “ON” if the [REC TO STOP MESSAGE] setting on the [ONSCREEN MODE] menu has been set at “OFF”.

Button Beeps

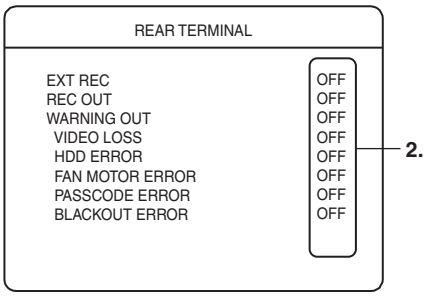
OFF, ON

3. **Press the [SET] button.**
   - The confirmation screen will be displayed.

4. **Select [SAVE] with the [◀/▶] keys, and then press [SET].**

REAR TERMINAL

1. **Press the [MENU] button.**
   - The [MENU] → [DETAIL OPERATION] → [Display/Operation] → [REAR TERMINAL] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. **Select your desired item with the [▲/▼] keys, and then change the value of the setting with [–/+].**

Settings

EXT REC

See page 29.

REC OUT

OFF: Signals not output.
ALL: Signals output during recording.
ALARM REC: Signals only output during alarm recording.
STOP REC: Signals output when recording stopped.

WARNING OUT

OFF: Signals not output.
ALL: Signals output when warnings are issued.
USER: Selects whether or not to output signals depending on the warning type.
Warning Types
VIDEO LOSS, HDD ERROR, FAN MOTOR ERROR, PASSCODE ERROR, BLACKOUT ERROR
Selection:
OFF, ON

3. **Press the [SET] button.**
   - The confirmation screen will be displayed.

4. **Select [SAVE] with the [◀/▶] keys, and then press [SET].**

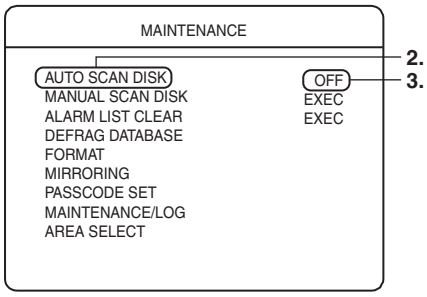
Hard Disk Maintenance

When a power failure occurs while in the Recording mode or Alarm Record Standby mode, or when a failure occurs in the recorded data on the hard disk, recording/playback may not function properly. To repair the hard disk, two types of scan disk functions are available on the VR-509:

AUTO SCAN DISK

Scans the hard disk automatically when the power is switched on.

1. **Press the [MENU] button.**
   - Opens the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “MAINTENANCE”.

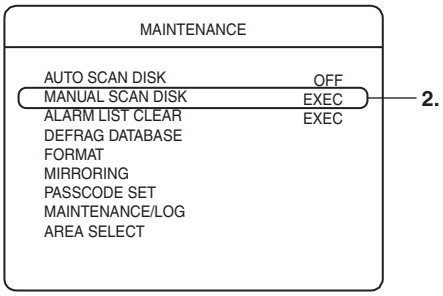


2. **Select [AUTO SCAN DISK] with [▲/▼].**
3. **Select [ON] with [–/+].**
4. **Press the [SET] button.**
   - A confirmation screen will be displayed.
5. **Select [SAVE] with [◀/▶], and then press the [SET] button.**

MANUAL SCAN DISK

Performs manual scanning of the hard disk. Perform Manual Scan Disk regularly when the “AUTO SCAN DISK” item in the menu is set to “OFF” or when the power to the equipment remains on for extensive periods of time. (About once a month)

1. **Press the [MENU] button.**
   - Opens the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “MAINTENANCE”.



2. **Select [MANUAL SCAN DISC] with [▲/▼], and then press the [SET] button.**
   - The SCAN DISC function will be executed.

- Press the [CANCEL] button to abort the scandisk process.
- This has no effect if the scandisk process is in progress.
- There are cases where the time required for ending the process is extended if the size of the recorded event is large or there are a large number of events (several hours.)
- Recording, playback and search functions cannot be used when the scandisk procedure is running.

CAUTION

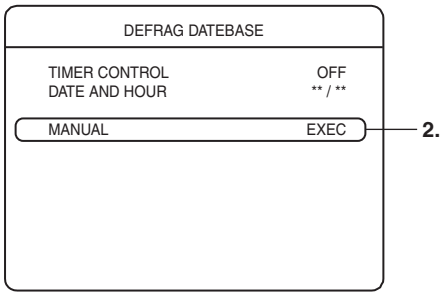
The manual scandisk process cannot be executed when in the following operation modes:

- During recording.
- During the playback of recorded images.
- When the timer is ON.
- During DVD export.
- When a malfunction occurs with the hard disk.

DEFRAG DATABASE

When alarm recording is performed repeatedly with Repeat Recording set to “ALL” or “ALARM LOCK”, data in the hard disk may become fragmented. Continued use of such data may cause files to split up and be recorded into free space, thereby giving rise to fragmentation or decay of data, which subsequently slows down the speed dramatically during hard disk searches. This is where the “DEFRAG DATABASE” feature comes into play in the maintenance of the hard disk.

1. **Press the [MENU] button.**
   - Opens the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “MAINTENANCE” → “DEFRAG DATABASE”.



2. **Select [MANUAL] with [▲/▼], and then press the [SET] button.**
   - The DEFRAG DATABASE confirmation screen will be displayed.
3. **Select [YES] and press the [SET] button.**
   - The DEFRAG DATABASE function will be executed.

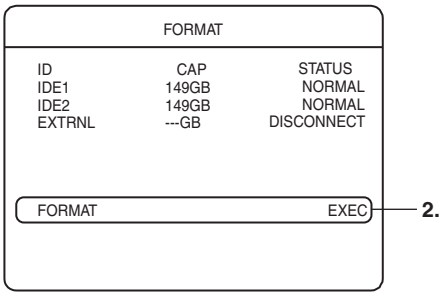
CAUTION

- If the time for automatic execution is reached during recording, the recording procedure will be aborted and the database will be defragged. When the defragging process is complete, recording will be restarted automatically.
- The defrag procedure should be run when searches take excessive amounts of time.
- When the date and time of automatic execution arrives during alarm recording, the recording process will be ended and the defrag process executed. Alarm recording will not be restarted when the defrag process has ended (although it can receive new alarms.)
- The manual defrag process cannot be executed when in the following operation modes:
  - During recording.
  - During the playback of recorded images.
  - When the timer is ON.
  - During DVD export.

Initializing the Hard Disk (“FORMAT”)

Recording may fail if there is insufficient space on the hard disk. When there is insufficient hard disk space, create a backup data and format the disk to create space for the recorded data. You are also recommended to “FORMAT” (Initialize) the hard disk on a regular basis to avoid data fragmentation.

1. **Press the [MENU] button.**
   - Opens the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “MAINTENANCE” → “FORMAT”.



EXTRNL: Indicates external hard disks.
(Only one can be connected.)

2. **Select [FORMAT] with [▲/▼], and then press the [SET] button.**
   - The FORMAT confirmation screen will be displayed.
3. **Select [YES] and press the [SET] button.**
   - The FORMAT function will be executed. When the formatting process has been completed, the “FORMAT SUCCEEDED” screen will be displayed. Operations will then automatically return to normal.

Precautions When Initializing the Hard Disk

- As the hard disk capacity displayed on the screen is calculated as 1GB = $(1024)^3$ bytes, a lower capacity than actually exists will be displayed.
- All recorded events will be erased when the formatting procedure is executed. Make sure that all important events are backed up accordingly.

CAUTION

The hard disk cannot be initialized when in the following operation modes:

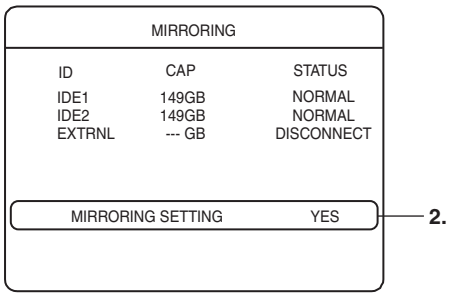
- During recording.
- During the playback of recorded images.
- When the timer is ON.
- During DVD export.
- When a malfunction occurs with the hard disk.

Setting up the Hard Disk for Mirroring

Mirroring refers to recording the same data in the 2 built-in hard disks. In this way, recorded data can be secured even if data on one of the hard disks is damaged.
(See on page 53 for the notes on “Setting up MIRRORING”)

Setting up MIRRORING

1. **Press the [MENU] button.**
   - Opens the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “MAINTENANCE” → “MIRRORING”.



2. **Check if [YES] is selected in the [MIRRORING SETTING], and then press the [SET] button.**
   - The “MIRRORING SET” confirmation screen will be displayed.

3. **Press the [SET] button once again.**
   - The set up procedure requires approximately 90 minutes for completion.

   Do not turn off the power during MIRRORING.

   - The “MIRRORING SETTING SUCCEEDED” screen will be displayed when the set up procedure has been completed. Operations will then automatically return to normal.

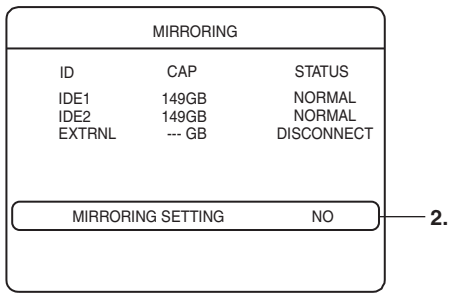
CAUTION

The mirroring settings cannot be executed when in the following operation modes:

- During recording.
- During the playback of recorded images.
- When the timer is ON.
- During DVD export.
- When a malfunction occurs with the hard disk.

Canceling MIRRORING

1. **Press the [MENU] button.**
   - Opens the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “MAINTENANCE” → “MIRRORING”.



   - The MIRRORING SETTING screen will be displayed.

2. **Check if [NO] is selected in the “MIRRORING SETTING”, and then press the [SET] button.**
   - The “MIRRORING CANCELLATION” confirmation screen will be displayed.

3. **Press the [SET] button once again.**
   - The MIRRORING SETTING will be cancelled, and the MIRRORING mode will be disabled.

   Do not turn off the power during cancelling MIRRORING.

   - The “MIRRORING CANCELLATION SUCCEEDED” screen will be displayed when the procedure has been completed. Operations will then automatically return to normal.

Setting up the Hard Disk for Mirroring (continued)

Precautions When Setting up Mirroring

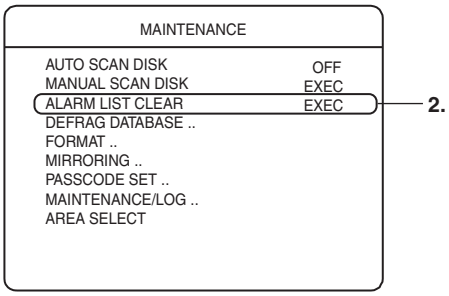
- The capacity of the hard disk will be reduced by approximately half when mirroring is set up. It is therefore necessary to take care when setting recording times.
- Mirroring can only be set up for the built-in hard disk, and is not possible on additional disks.
- Setting the system for mirroring is not a guarantee that data will not be damaged.
- All events logged on the built-in hard disk and additional hard disks will be deleted when mirroring is set up. It is therefore necessary to take back-ups of all important events beforehand.
- Depending on the recording settings and the operational status, there is a possibility that playback speed will be reduced and that the sound will not be synchronized with the images when setting up the system for mirroring. This is not a malfunction.
- If a power failure occurs which the mirroring settings enabled, the re-creation process will be carried out once again in the background. The safety of the recorded data cannot be guaranteed while the recreation process is being performed.
- Depending on the condition of the hard disk, there is a possibility that the mirroring settings will fail. In this event, cancel the mirroring settings, and then begin the setup process once again.
- Recording and playback is not possible when the mirroring settings are being processed.
- As the hard disk capacity displayed on the screen is calculated as 1GB = $(1024)^3$ bytes, a lower capacity than actually exists will be displayed.
- If a defect occurs on one of the hard disks, the function for exporting data onto DVDs will not operate.
- The objective of mirroring is to protect recorded data in the event that the VR-509 hard disk malfunctions. Note that there are cases where operations cannot be continued even when mirroring has been set up depending on the type of hard disk malfunction.

Deleting Alarm Lists

It is possible to delete only the alarm lists without disturbing the alarm recorded images.

1. Press the [MENU] button.

- The [MENU] → [DETAIL OPERATION] → [MAINTENANCE] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. Select [ALARM LIST CLEAR] with the [▲/▼] keys, and then press [SET].

- The confirmation screen will be displayed.

3. Select [YES] and press the [SET] button.

- The alarm list will be deleted.

* Select the [NO] button to close the confirmation screen.

* Image data will be handled as normal recording events.

* Press the [CANCEL] button to abort the deletion process.

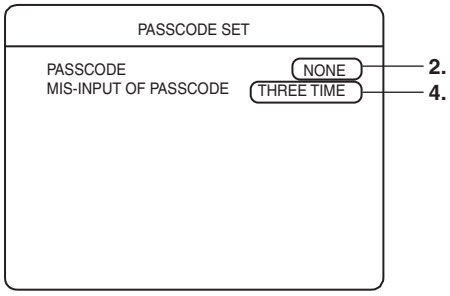
CAUTION

The alarm list cannot be cleared when in the following operation modes:

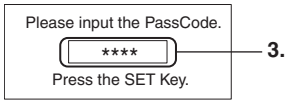
- During recording.
- During the playback of recorded images.
- When the timer is ON.
- During DVD export.
- When a malfunction occurs with the hard disk.

Pass Code Setup

1. **Press the [MENU] button.**
   - The [MENU] → [DETAIL OPERATION] → [MAINTENANCE] → [PASSCODE SET] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. **Select [PASSCODE] with the [▲/▼] keys, and then press [SET].**
   - The pass code confirmation/amendment screen will be displayed.



Settings

PASSCODE

NONE: Displayed when no pass code has been set.
SET: Displayed when a pass code has been set.

3. **Enter the pass code with the use of the ten-key pad, and then press [SET].**
   - The pass code will be set or amended.
   * Enter the four characters of the passcode.

4. **Select [MIS-INPUT OF PASSCODE] with the [▲/▼] keys, and then amend the value of the setting with [–/+].**

Settings

MIS-INPUT OF PASSCODE

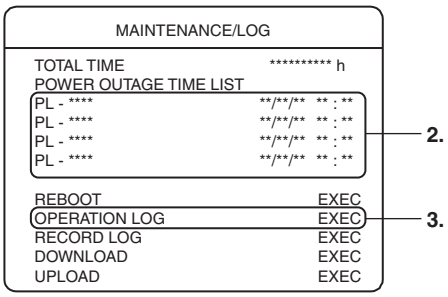
OFF: A warning will not be issued even when mis-input occurs.
ONCE, TWICE, THREE TIMES:
A warning is issued after mis-input occurs (consecutively) for the number of times set.

5. **Press the [SET] button.**
   - The confirmation screen will be displayed.

6. **Select [SAVE] with the [◀/▶] keys, and then press [SET].**

Displaying the Power Outage Time List and Log

1. **Press the [MENU] button.**
   - The [MENU] → [DETAIL OPERATION] → [MAINTENANCE] → [MAINTENANCE/LOG] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.
   - The TOTAL TIME and POWER OUTAGE TIME LIST will be displayed.
   - The oldest log and the most recent three logs will be displayed for the POWER OUTAGE TIME LIST.



Deleting the Power Outage List

2. **Select the desired list with the [▲/▼] keys, and then press [CANCEL].**
   - The selected list will be deleted.

Displaying the Operation Log and Recording Log

3. **Select your desired item with the [▲/▼] keys, and then press [SET].**

Settings

OPERATION LOG

Displays the operation log.

RECORD LOG

Displays the recording log.

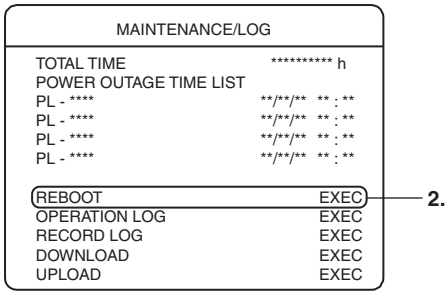
CAUTION

There are cases where images recorded close to the times of power failures will not playback normally.

Rebooting the System

1. Press the [MENU] button.

- The [MENU] → [DETAIL OPERATION] → [MAINTENANCE] → [MAINTENANCE/LOG] screens will be displayed in this sequence in accordance with the [MENU Screen Operations] explained on page 17.



2. Select [REBOOT] with the [▲/▼] keys, and then press [SET].

- The confirmation screen will be displayed.

* [REBOOT] cannot be executed during timer recording.

3. Press the [SET] button once again.

- The system will be rebooted.

Hard Disk Recovery Feature

- The VR-509 is equipped with a function to notify the user of abnormalities on the hard disk when it is automatically rebooted.
- The automatic shut-off process will be executed if the system fails to recognize the hard disk or malfunctions occur three times during automatic rebooting.
- When there is a failure on the hard disk, it will restart and recovery automatically. The [E-01] error code will be displayed on the monitor screen after the automatic rebooting procedure has been carried out.
- Normal operations will be resumed when the automatic rebooting procedure has restored the malfunction. In this event, a message stating “SYSTEM REBOOTED TO CHECK HARD DISK” will be displayed on the monitor screen.
- Recording is not possible when the rebooting procedure is in progress.
- Automatic recovery is impossible in the event of fatal malfunctions that prevent the rebooting procedure from running.

Using DVD

DVD for Recording & Playback

The following shows the discs that can be recorded to and played using VR-509, in addition to the corresponding display marks or logos.

DVD-R 	12 cm: 4.7 GB General Version 2.0 (video mode)
DVD-RW 	12 cm: 4.7 GB Version 1.1 or later (video mode)

* Certain characteristics and properties of DVD-Rs and DVD-RWs can render them unsuitable for recording or playback.

Recommended manufacturers

DVD-R : JVC 4x, 8x
DVD-RW : JVC 2x, 4x

DVD-R & DVD-RW Details

DVD-R: Only discs that conform with DVD-R Standard 2.0 (video mode) can be used.

DVD-RW: Discs of Version 1.1 or later can be used. Although Version 1.1 of the DVD-RW Standards allows the selection of either video mode or VR mode for recording, this DVD recorder performs recording in video mode only.

* Version 1.0 of the DVD-RW Standards does not support video-mode recording, and for this reason, the corresponding discs cannot be used.

In terms of recording characteristics, DVD-R and DVD-RW (video mode) differs as follows.

■ **DVD-R**

Each disc can be recorded only one. Accordingly, these discs are recommended for use in archiving or long-term storage.

■ **DVD-RW (video mode)**

After viewing a disc, all data can be erased and it can be used to record new content.

The VR-509 Export Format

- DVD-R/RW discs that have been created in the Self-Playing format with the VR-509 can only be played back on the VR-509.
- DVD-R/RW discs created in the DVD-Video format with the VR-509 can be played back on any DVD player that supports DVD-R/RW discs, although playback performance is not guaranteed.
  They cannot be played back on the VR-509.
  Consult with your nearest JVC dealer for details on suitable DVD players.
  (See Export Format on page 57)

* DVD video discs available on the open market cannot be played back.

Inserting & Removing DVD

Inserting a DVD

1. Press the [OPEN/CLOSE] button.

- The disc tray will open automatically.

2. Place the disc on the disc tray.

- Ensure that the disc is inserted correctly into the tray's recess with the printed side facing upward.

3. Press the [OPEN/CLOSE] button.

- The disc tray will close automatically and "LOAD" will be shown on the monitor.

Removing a DVD

1. Press the [OPEN/CLOSE] button.

- The disc tray will open automatically.

2. Remove the disc from the disc tray.

Be sure to wait until the disc tray has opened fully before removing the disc.

3. Press the [OPEN/CLOSE] button.

- The disc tray will close automatically.

Precautions regarding the disc tray

- The disc tray will not open even when the [OPEN/CLOSE] button is pressed when a DVD is being created.
- Do not push the disc tray as it is opening or closing.
- Do not place objects other than discs on the disc tray.
- Do not press down on the disc tray.

Exporting Data on DVD

The VR-509 is equipped with a function to enable the images stored on the hard disk to be exported to DVDs.

* It is possible to export images to a DVD when recording onto the hard disk.

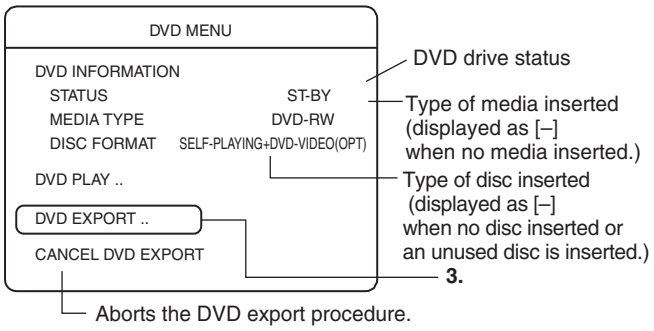
1. Press the [HDD(DVD)] button.

- The display LED will be illuminated, and the DVD operation mode will be activated.

* It is not possible to switch across to the DVD operation mode during HDD playback.

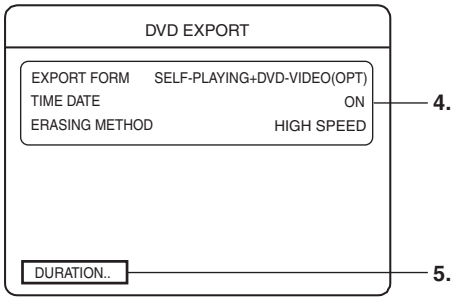
2. Press the [MENU] button.

- The “DVD” screen will be displayed.



3. Select [DVD EXPORT] with [▲/▼], and then press the [SET] button.

- The “DVD EXPORT” screen will be displayed.



4. Select your desired item with [▲/▼], and then change the setting with [–/+].

Settings

EXPORT FORM

Self Playing + DVD-Video (OPT) format (gap fill-in):
The copy is made in both the self-playing format and the DVD-Video (gap fill-in) formats.

Self Playing + DVD Video (NO OPT) format:
The copy is made in both the self-playing format and the DVD-Video formats.

DVD-Video (OPT) format (gap fill-in):
The copy is made in the DVD-Video (gap fill-in) format. This can be played back on DVD players. It is designed so that gaps between images caused by a low number of frames per second are filled in, and it is played back at a speed of x1. This format cannot be played back on the VR-509.

DVD-Video (NO OPT) format:
The copy is made in the DVD-Video format. This can be played back on DVD players. Gaps between images caused by a low number of frames per second are played back in the fast-forward mode. This format cannot be played back on the VR-509.

Only Self Playing:
The copy is made in a format that can only be played back on the VR-509.

* To output linked audio sound in the DVD-Video format, either set the [GAP FILL-IN (OPT)] parameter, or specify “25” for the frame rate.
If the frame rate is set at 0.08 or 0.2, audio sound will not be output even if the [GAP FILL-IN] parameter is set up.

TIME/DATE

Sets whether the date/time stamp is to be recorded on images or not when writing is being carried out in the DVD-Video format.

DELETE METHOD

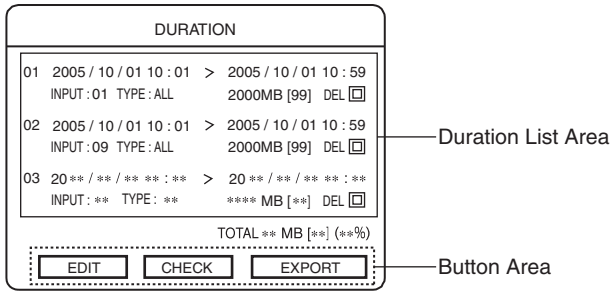
When data is being exported to a DVD-RW disc, all previous data on the disc will be deleted. This function specifies the method of deletion.

ALL: Deletes all data. This will require between thirty minutes and one hour for a 4x disc.

HIGH SPEED: Deletes the data at high speed (approximately two minutes.)
However, the data will not be completely erased.

5. Select [DURATION] with [▲/▼] keys, and then press the [SET] button.

- The [DURATION] setup screen will be displayed.



■ **Duration List Area**

The DURATION setting enables lists for a maximum of 99 periods to be set up. Lists for three periods are displayed on each screen. When the parameters for one period list have been completed, press the [▼] key to continue with the setup of the next list. The list number in the DURATION LIST AREA will also be increased accordingly.

■ **Button Area**

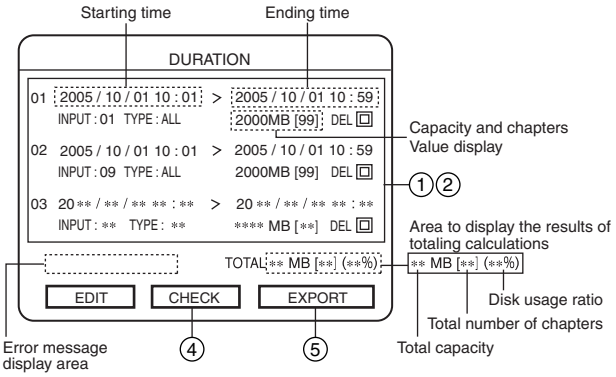
[EDIT]: Used to amend the period list settings.

[CHECK]: Used to calculate the capacity of the set lists. The number of chapters is also displayed.

[EXPORT]: Used to export the data to a DVD.

Exporting Data on DVD (continued)

6. Setting up the [DURATION] setup screen.



① **Select the required period list with the [▲/▼/◀/▶] keys, and then amend the value with the [–/+] keys.**

Starting Time: Specifies the starting date and time (yy/mm/dd hh:mm) of the image data to be exported

Ending Time: Specifies the ending date and time (yy/mm/dd hh:mm) of the image data to be exported

[INPUT] : Specifies the number of the camera that is to be exported.

[TYPE]: Specifies the type of recorded image data that is to be exported.

- ALL ..... All images.
- ALARM ..... Alarm recorded images taken with alarm input.
- M.DET ..... Alarm recorded images taken with the motion detection function.
- EMG ..... Emergency recorded images and PASSCODE ERROR recorded images.

Capacity: This field cannot be amended. The results of capacity calculation are displayed here. The number of chapters taken during the period are displayed within parenthesis. A message stating [OVER MB] will be displayed if the capacity is too large. [0 MB] will be displayed if no data exists for the relevant period.

[DEL]: Sets whether or not to delete the settings for the relevant period list (this is used when a capacity overflow occurs in the results of capacity calculation.)

- ☐ ..... Left undeleted
- ■ ..... Delete

② **Press the [▼] key to proceed onto the setup for the following list.**

- The cursor will move to the next list.

Repeat the procedures explained in ①.

③ **Press the [SET] button when all settings have been completed.**

- Operations in the button area on the [DURATION] setup screen will be activated.

④ **Select [CHECK] with the [◀/▶] keys, and then press [SET].**

- Calculation of the capacity for the setup lists will commence. A screen to indicate that calculations are in progress will be displayed.
- When the calculation are complete, all of the period lists, the total capacity for the period lists, and the number of chapters will be displayed. The usage ration (percentage) of the disk will also be displayed.
  - * Lists for which [DEL] have been set will be cleared before the calculations are carried out.
  - * Select [ABORT] and then press [SET] to abort the calculation process.
  - * Capacity calculation may require a certain amount of time to run when the number of relevant chapters is large.
  - * Incorrect entries will be highlighted with red underlines.
- ■ It is possible to display a message stating [CAPACITY OVER] on the [DURATION] setup screen when the capacity exceeds the volume of the DVD (see the section on Error Messages below.)
  In this event, select [EDIT] on the [DURATION] setup screen and press [SET] to amend or delete the period list parameters.

⑤ **Select [EXPORT] with the [◀/▶] keys, and then press [SET].**

- The display will return to the live screen, and the export process will be commenced. The execution status of the export process will be displayed on the screen.

■ Error Messages

Error messages similar to those shown below will be displayed in the error message display area when an error occurs with the parameters set on the [DURATION] setup screen.

INVALID DATE/TIME:
When one or more errors are included in the period setting.

CAPACITY OVER:
When excessive capacity exists in one or more period.

NO STREAM FOUND:
When relevant images do not exist in one or more period.

ERROR FOUND:
When an error other than those listed above exists in one or more period.

TOTAL CAPACITY OVER:
When an OVER CAPACITY error does not exist individually for each period, but when the total capacity exceeds 4.5GB.

ERROR: When an internal error occurs during export execution.

CHAPTER OVER:
When the number of chapters in one or more period are too many.

TOTAL CHAPTER OVER:
When an CHAPTER OVER error does not exist individually for each period, but when the total number of chapters exceeds a maximum of 498 when no audio sound is included, and a maximum of 249 when audio sound is included (the maximum limit for the number of chapters differs depending on the existence of audio sound.)

MEMO

- Press the [RETURN] button when [EDIT], [CHECK] or [EXPORT] operations in the [DURATION] setup screen's button area are activated to return to the previous screen.
- Press the [CANCEL] or [MENU] button for several seconds to return to the live screen.

Exporting Data on DVD (continued)

Displays During DVD Export

The status of execution will be displayed on the live screen when the DVD export process is in progress.

D.S: Searching for the relevant file.

D.E: Deleting the data that has been written onto the DVD.

D.C: Converting the data into a format that conforms with the DVD-Video format.

D.W: Writing the converted files onto the DVD.

D.F: Performing the finalization process.

* See page 98 for details on the error messages related to DVDs.

Configuration of Completed DVDs

- The periods specified during the export process will be sorted by title. A maximum of 99 titles can be created.
- The chapters included in each title will be created for each recording type. A maximum of 99 chapters can be created for each title (although the chapters will not be divided if there are internal links for alarm files.)
  Additionally, the chapters will be divided automatically in files of up to six hours in accordance with the recorded file's information (recording rate and recording time.)
- Serial numbers, channels, the starting time and ending time of recordings, and the recording mode will be appended to the title of DVD recording.
- The playback mode is the title loop.
- There are cases where the starting times of chapters within titles are a maximum ten seconds prior to the specified starting times.

Points to Note During DVD Export

- Playback from the hard disk is not possible when data is being recorded onto DVDs.
- All data exported to DVD-R discs when the DVD export function is executed cannot be deleted.
  In the case of DVD-RW discs, the current data can be deleted and replaced with new export data.
- The DVD tray cannot be opened during DVD export and disc loading.
- A maximum of 99 titles can be recorded onto a single DVD. Additionally, a maximum of 99 chapters can be created for each title.
- The maximum number of chapters that can be exported when the export format is in self-playing format is limited to a total of 498 (249 when audio sound is included.)
- Image distribution onto a network will be suspended during DVD exporting.
- Malfunctions on the hard disk may result in the DVD export function not being able to be used.
- When data that is less than a total of 1GB is to be exported onto a DVD-R, it will be expanded to approximately 1GB of data and exported accordingly, depending on the rating for the DVD-R. This will consequently result in additional time required for the process to be completed.
- There are cases where the "CHAPTER OVER" error message will be displayed if the [FRAME RATE] parameter is set at [AUTO] during alarm according when the alarm recording is exported to the DVD. This is caused by the VR-509E's DVD conversion specifications (*1), so when this occurs it is necessary to reduce the amount of periods that are to be exported to the DVD, and then execute the [CHECK] or [EXPORT] functions once again.
  *1: As the VR-509E exports data for which the frame rate has been converted as different alarm recorded data when frame rates are changed in accordance with the [AUTO] setting for a single alarm recording, the number of alarms that are exported exceeds the actual number of alarms.
- See page 112 for guidelines to the amount of time that can be recorded onto a single DVD.
  The relationships between the export format and the permissible recording time are shown below.

Permissible Recording Time	Export Format
Short ↓ ↓ Long	Self-playing + DVD-Video (OPT) ↓ Self-playing + DVD-Video (NO OPT) ↓ DVD-Video (OPT) ↓ DVD-Video (NO OPT) ↓ Self-playing

- See page 113 for guidelines to the amount of time required for exporting data onto DVDs.

Playing Back Exported Images on DVD

It is possible to playback the images that have been exported from the hard disk to DVDs. Set the export format to format including “SELF-PLAYING” when exporting the data.

* DVD images can be played back when recording onto the HDD.

1. Press the [HDD(DVD)] button.

- The display LED will be illuminated, and the DVD operation mode will be activated.

* It is not possible to switch across to the DVD operation mode during HDD playback.

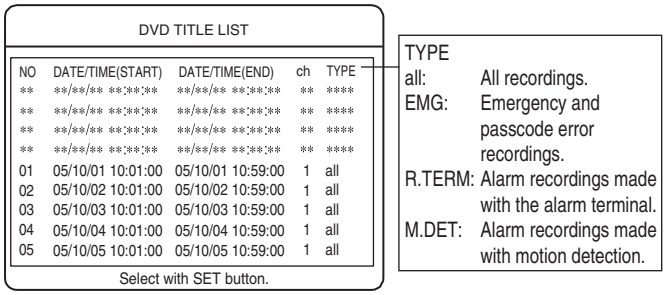
2. Press the [MENU] button.

- The [DVD MENU] screen will be displayed.

* If the [MENU] button is pressed during DVD playback, playback will be halted and the [DVD MENU] screen will be displayed.

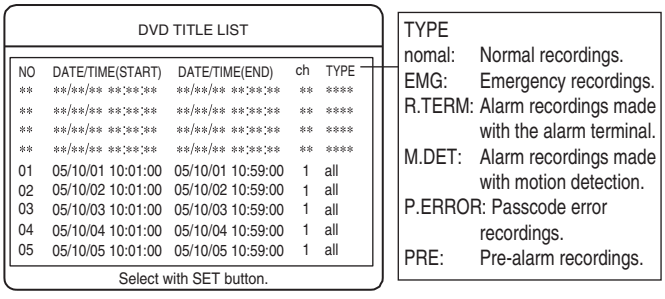
3. Select [DVD PLAY] with [▲/▼], and then press the [SET] button.

- The DVD title list will be displayed.
  The titles are created in accordance with the periods specified at the time of export (up to a maximum of 99 titles.)



4. Select the title that is to be played back with the [▲/▼] keys, and then press the [SET] button.

- The chapter list for the selected title will be displayed.
  The chapters are divided into alarm recordings (up to a maximum of 99 chapters.)



5. Select the chapter that is to be played back with the [▲/▼] keys, and then press the [PLAY/PAUSE] button.

- Playback will be carried out continuously in sequence from the selected chapter.
  When the final chapter has been played back, playback will return to the first chapter and start again (loop playback for one title.)

6. Press the [PLAY STOP] button to stop playback.

- The display will return to the chapter list screen.

Operations when the Chapter List Screen is Displayed

7. Press the [RETURN] button to play other titles.

- The display will return to the title list screen.
  Perform the operations explained in procedures #4 to #6 to continue with playback.

8. Press the [PLAY STOP] button to return to the live screen.

- The display will return to the live screen.

MEMO

- The display will return to the DVD MENU if the [RETURN] button is pressed when the title list screen is being displayed.
- The display will return to the live screen if the [MENU] button is pressed for several seconds when the chapter list, the title list or the DVD MENU are being displayed.

Possible Operations in the DVD PLAYBACK Mode

- Pause
- Changing the playback sped with the shuttle dial
- A single frame playback with the jog dial
- It is possible to jump to the previous or next chapters with the [SKIP] button.

Returning to the HDD Operation Mode

Press the [HDD(DVD)] button when displaying the live screen.

- The display LED will be extinguished, and the HDD Operation mode will be activated.

* It is not possible to switch across to the HDD operation mode when the DVD list or DVD MENU is being displayed, or when a DVD is being played back.

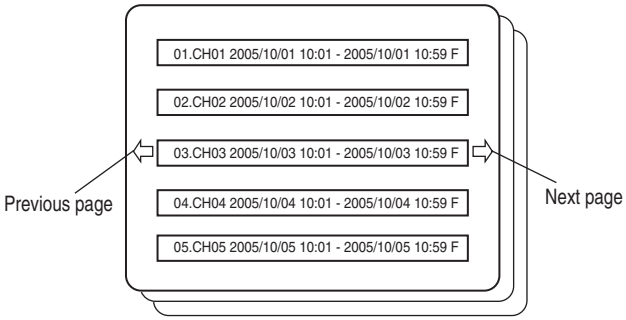
* DVD-Video (DV-ROM) disks available on the open market cannot be played back. The discs created in the DVD-Video format cannot be played back on the VR-509. Only the discs that can be created in the self-play format with the VR-509 can be played back.

DVD-Video Format Menus and Playback

The following title menus and chapter menus are created for DVDs that are formatted in the DVD-Video and DVD-Video (intermittent interpolation) formats for exporting purposes.

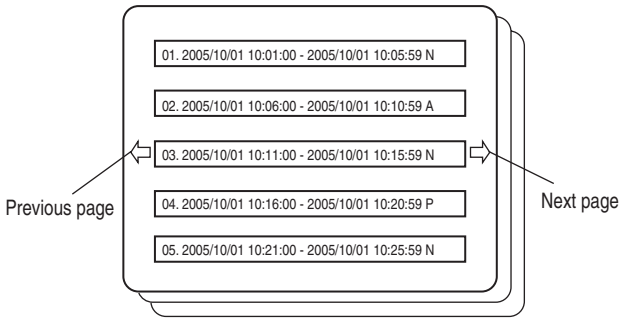
* DVDs that are created in the DVD-Video and DVD-Video (intermittent interpolation) cannot be played back on the VR-509E.
  They can be played back on DVD players that support the DVD-R/RW format.

Title Menus



- The title menu is displayed when a disc is inserted in the DVD player. The title menu can also be displayed with the top menu key, etc., on the remote controller.
- A maximum of 99 titles is possible. Five titles will be displayed on each page (maximum 20 pages.)
  Turn the pages with the [Previous Page] and [Next Page] keys on either side of the screen.
- The name of the title consists of the serial number, the camera number, the starting time, the ending time and the type of search recording.
  The symbols for the type of search recording are shown below.
  A: All recordings.
  R: Alarm recordings taken with the alarm terminal.
  M: Alarm recordings taken with motion detection.
  E: Emergency recordings.
- When a title is selected, the playback will commence continuously from the first chapter within the title.
  When the final chapter has been played back, playback will return to the first chapter and start again (loop playback for one title.)

Chapter Menus



- The chapter menu cannot be displayed with the menu keys on the remote controller when a title is being played back.
- The chapters are divided into recording types (although the chapters will not be divided if there are internal links for alarm files.)
- A maximum of 99 titles is possible within a single title. Five chapters will be displayed on each page (maximum 20 pages.)
  Turn the pages with the [Previous Page] and [Next Page] keys on either side of the screen.
- The name of the title consists of the serial number, the starting time, the ending time and the recording type.
  The symbols for the recording types are shown below.
  N: Normal recordings.
  E: Emergency recordings.
  R: Alarm recordings taken with the alarm terminal.
  M: Alarm recordings taken with motion detection.
  C: Passcode error search recordings.
  P: Pre-alarm recordings.
- When a chapter is selected, the playback will commence continuously from that chapter.
- When the final chapter has been played back, playback will return to the first chapter and start again (loop playback for one title.)

DVD-Video Playback

- The channel number for the chapter (camera number) and recording type, such as ALARM (alarm mark,) will not be displayed during playback.
- If the [TIME/DATE] parameter on the DVD Export menu was set at “ON” when the data was exported, the time that the data was recorded onto the hard disk will be displayed.
- The audio sound will break up when switching between chapters during playback.

Capturing Still Images on the Flash Memory

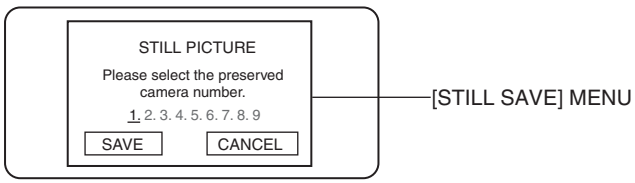
It is possible to capture still images onto USB flash memories when in the playback mode.

1. **Connect a USB flash memory to the [SERIAL] port on the front or back panel.**

2. **Set the VR-509 in the playback mode. (See page 40)**

3. **Press the [PLAY/PAUSE] button when the image that is to be captured is displayed to pause playback.**

4. **Once playback has been paused, press the [0] button while pressing down on the [FUNCTION] button.**
   - The [STILL PICTURE] menu will be displayed.
   * Camera numbers that are not displayed on the split screen cannot be selected.



5. **Select the camera channel to which the still image is to be saved with the [◀/▶] keys, and then press the [SET] button.**
   * This cannot be selected when the [COVERT CHANNEL] parameter is set at [ENABLE]. In this event, either make sure that the [SELECT COVERT] setting does not include [MONITOR OUT], or set [PLAY PERMISSION] to [ON].
   * Camera channels that are not being played back cannot be selected.

6. **Select [SAVE] with the [▲/▼] keys, and then press the [SET] button.**
   - A message stating that the still image is being saved will be displayed on screen.

7. **A message stating "Still picture preservation success" will be displayed when the still image has been saved. Press the [SET] button.**
   - The [SAVE] procedure will be completed, and the [STILL PICTURE] menu will be closed.
   - The file name for the still image will be set automatically.
   - If a file with the same name exists on the USB flash memory, it will be overwritten.

8. **Disconnect the USB flash memory from the port.**

* Do not disconnect the flash memory when the still image is being saved.

■ **When the flash memory is not acknowledged**

A message stating "The USB flash memory cannot be recognized" will be displayed on screen.
- To continue, make sure the flash memory is connected correctly, select [RETRIAL] on the screen, and then press [SET].
- To abort the procedure, select [CANCEL] on the screen, and then press [SET].

* This message will be displayed in the following circumstances:
  When a flash memory has not been connected.
  When the flash memory contains a different file system.

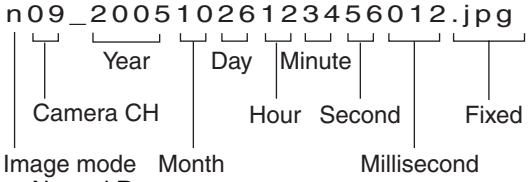
■ **A message stating "Still picture preservation failure" will be displayed on screen if the procedure for saving a still image fails.**

In this event, select [CANCEL] on the screen and then press [SET].
* See Troubleshooting on page 98 for details on the cause and recovery methods when an error is triggered.

Still Image File Names

Files names are automatically assigned in accordance with the following conventions:

Example: An image captured at 12:34:56:012 on October 26th 2005 from camera 9 in the normal recording mode.



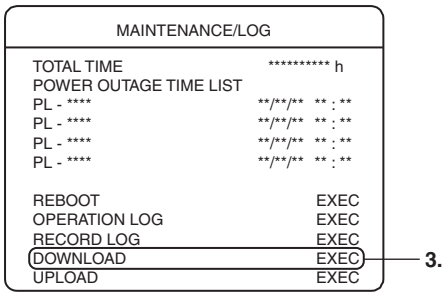
n: Normal Rec
t: Timer Rec
p: Pre Alarm Rec
a: Alarm Rec
m: Motion Alarm Rec
e: Emergency Rec
c: Passcode Error Rec
l: Only used when in the Live Web mode (See page 69)

* Flash memories connected to the VR-509 will be registered automatically the first time. A maximum of ten flash memories can be registered. The registration will be erased when the power to the VR-509 is switched off.
* Image distribution onto a network will be suspended when capturing still images.
* There are cases where images recorded close to the times of power failures will not playback normally, and capturing still images will not be possible.
* Contact your nearest JVC dealer for details on the flash memories that can be used.

Storing Set Data in the Flash Memory

1. **Connect the flash memory to the [SERIAL] port on the front or on the back panel.**

2. **Press the [MENU] button.**
   - Open the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “MAINTENANCE”→“MAINTENANCE/LOG”.



3. **Select [DOWNLOAD] with [▲/▼], and then press the [SET] button.**
   - A message stating [Download in progress] will be displayed on the screen.

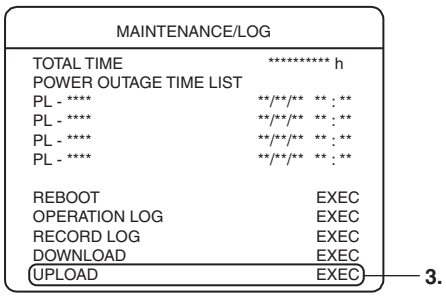
4. **The menu settings will be saved in the flash memory when the message is cleared from the screen.**

5. **Disconnect the flash memory from the [SERIAL] port.**

Loading Set Data from the USB Memory

1. **Connect the flash memory to the [SERIAL] port on the front or on the back panel.**

2. **Press the [MENU] button.**
   - Open the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “MAINTENANCE”→“MAINTENANCE/LOG”.



3. **Select [UPLOAD] with [▲/▼], and then press the [SET] button.**
   - A message stating [Confirming setting data] will be displayed on the screen.

■ The upload confirmation screen will be displayed on the screen when the setting data has been confirmed.

4. **Select [EXEC] on the confirmation screen, and then press the [SET] button.**
   - A message stating “Updating setting data” will be displayed on the screen.

■ The system will reboot when uploading has been completed.

5. **Disconnect the flash memory from the [SERIAL] port.**

■ **When the flash memory is not acknowledged**

A message stating “The USB flash memory cannot be recognized” will be displayed on screen.

- To continue, make sure the flash memory is connected correctly, select [RETRIAL] on the screen, and then press [SET].
- To abort the procedure, select [CANCEL] on the screen, and then press [SET].

* This message will be displayed in the following circumstances:
When a flash memory has not been connected.
When the flash memory contains a different file system.

■ **A message stating “Set data taking out failure” or “It failed in reading set data” will be displayed on screen if the procedure for downloading/uploading the data fails.**
In this event, select [CANCEL] on the screen and then press [SET].
* See Troubleshooting on page 98 for details on the cause and recovery methods when an error is triggered.

* Flash memories connected to the VR-509 will be registered automatically the first time. A maximum of ten flash memories can be registered. The registration will be erased when the power to the VR-509 is switched off.
* Image distribution onto a network will be suspended when setup data is being downloaded or uploaded.
* Contact your nearest JVC dealer for details on the flash memories that can be used.

■ The name of the setting data file
(Example) E00-12_051012040750.509.
VR-509 software version yymmddhhmmss, 509

■ When loading setting data
If [509] is the extension log, then it is possible to amend the file name (although only with single-byte alpha-numerals.)

■ When loading setting data
Only one item of setting data can be saved onto a USB flash memory (the file is placed in the root directory.)
The most recently saved data will be loaded when multiple setup data files exist on the root directly.

External Hard Disk Drives

The VR-509 allows connection of one external hard disk drives in addition to the 2 built-in hard disks. Follow the procedure below to alter the connection setup of the hard disk. There are 3 ways of altering connection setup, namely “NEW”, “CHANGE” and “DISCONNECT”.

1. **Switch off the power.**
   - Switch off the power to the VR-509 by observing the instructions provided in the section on “Switching Off the Power” in Switching the Power ON/OFF. (Page 16)
   - External hard disks will not respond to any operations when the VR-509 is in the OPERATION OFF mode. Disconnect the power cable and then reboot the system.
2. **Connect the external hard disk to the [SERIAL] port on the front or on the back panel and then plug in the power cable.**
   - Make sure the power to the external hard disk is switched on before switching on the power to the VR-509. Note that it is necessary to switch on the power to the external hard disk that was first connected, otherwise additional hard disks will not be recognized.
3. **Switch on VR-509.**
   - The HDD reconfiguration confirmation screen will be displayed.
4. **Select [EXEC], and then press the [SET] button.**
   - The HDD reconfiguration confirmation screen will be displayed.
5. **Select [EXEC] and then press the [SET] button once again.**
   - The external hard disk will be formatted.
   - The FORMATTING SUCCESSFUL screen will be displayed when the process has been completed. The system will then automatically return to normal operations.
   - The disconnection process will be performed instead of the formatting process if it is disconnected.

* It is impossible to disconnect an external hard disk from the VR-509 and connect it to a personal computer in order to view the images.
* Consult with your nearest JVC dealer for details on the external hard disks that can be used.
* It is recommended that a UPS is used to ensure system safety.

Connecting a UPS

UPS: Uninterruptible Power Supply
Connecting a UPS to the hard disk will protect it from damage by automatically powering down all operations prior to switching off the power supply.

1. **Connection**
   - Connect the UPS communication cable to the [SERIAL] port on the front or rear panel.
   - Connect the VR-509 power cord to the UPS power output connector.
2. **Switching on the power**
   - Switch on the power to the UPS.
   - Switch on the power to the VR-509.

* Make sure the UPS communication cable is connected before switching on the power to the VR-509.
* Do not disconnect the communication cable when operations are being carried out.
* Consult with your nearest JVC dealer for details on the UPS that can be used.

USB Hub

A USB hub is required when a UPS and an external hard disk are to be used simultaneously.
Make sure that the USB hub supports USB 2.0.
Depending on the USB hub in use, there is a chance that USB 1.1 will be operated in the event of both USB 2.0 and USB 1.1 equipment being connected. It is recommended that this type of USB hub is avoided.

Connecting to a PC

You Can Do the Following

- Viewing Live Images Using a PC (Page 69)
- Record Program Using a PC (Page 70)
- Viewing Playback Image Using a PC (Page 73)
- Useful Functions Using a PC (Page 76)
  - Camera titles (Page 76)
  - Mail Notification (Page 77)
  - NTP server registration (Page 78)
  - Downloading (Page 79)
  - Uploading (Page 80)
- Changing a Network Settings (Page 82)
- Changing VR-509 Settings Using a PC (Page 83)

Minimum PC Specifications Required

- OS: Windows XP Professional SP2 / Windows XP Home Edition SP2
- CPU: Pentium III 1GHz and above
- Memory: 256 MB and above
- Monitor: XGA (1024 x 768 pixels) and above required
  SXGA (1280 x 1024 pixels) recommended

* Supports Internet Explorer Ver. 6.0.
In addition, Internet Explorer 5.0 is not supported.
(Set Java Script and ActiveX control to [ENABLE] and Pop-Up Block to [DISABLE].)

- The PC specifications are merely recommended examples for using the application software with ease, and operations are not guaranteed.
  Even when the PC fulfils the necessary operating conditions, its performance may vary between individual users depending how the PC is used.

CAUTION

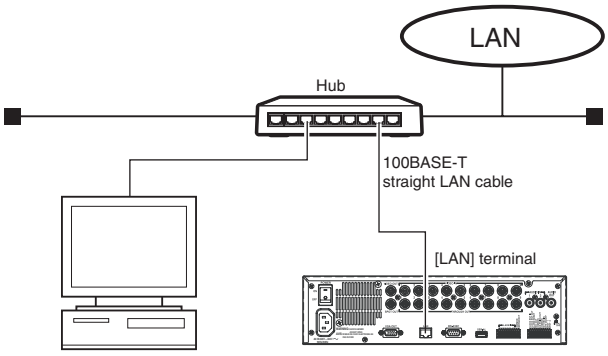
- As the VR-509 is only equipped with an auto-negotiation function, care must be taken when it is connected to the full duplex of fixed equipment.
- The VR-509 does not support functions that amend NAT, NAPT (IP masquerade) or similar IP addresses, or port numbers.

* See to page 108 for details on activating ActiveX Control.

Connecting Using a LAN Cable

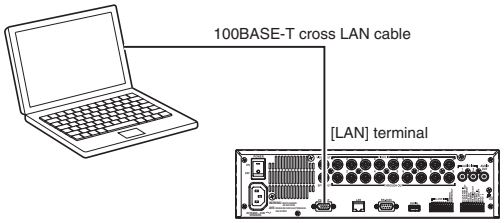
Connecting the Network (LAN)

- Connect the PC to the hub and the VR-509 to the hub with the use of straight LAN cables.



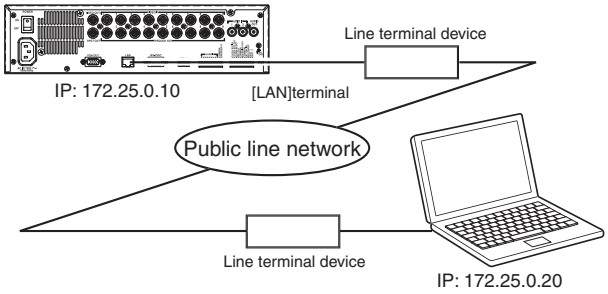
Peer-to-Peer Connection

- Connect the PC to the VR-509 with the use of a crossover LAN cable.



Connecting to Public Line Networks

- Connect the personal computer to a line terminal device (router, etc.,) and the VR-509E to a line terminal device with a straight LAN cable.



MEMO

Establish the settings for the line terminal device in accordance with the instructions provided for each individual device in the Instruction Manual.

* Always used LAN cables that are rated Enhanced Category 5 or Category 6.

- Consult the network administrator when connecting to an existing LAN line.
- Simultaneous playback of images from one VR-509 on multiple PCs is not possible.
- It is not possible to view live images from more than one personal computer simultaneously with the VR-509.

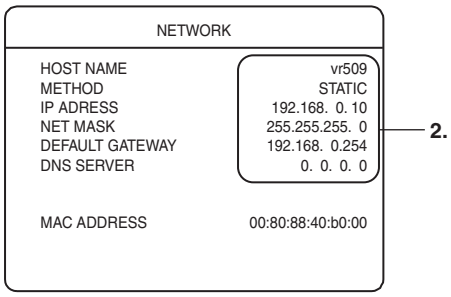
The VR-509 supports WAN (Wide Area Networks.)

Setting up a Network for VR-509

Perform the initial setup procedure for the VR-509 while referring to the connected monitor screen.

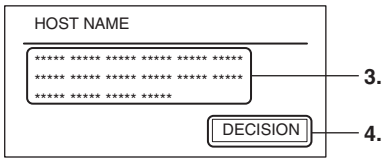
1. Press the [MENU] button.

- Opens the menus in accordance with the instructions provided in Changing MENU Settings (page 17) in the sequence of “MENU” → “DETAIL OPERATION” → “NETWORK”.



2. Select [HOST NAME] with the [▲/▼] keys, and then press [SET].

- The host name entry screen will be displayed.



3. Select your desired character with the [▲/▼/◀/▶] keys, and then press [SET].

- A single character will be entered in the host name.
- * Press the [–] or [+] keys to move the cursor backward and forward along the name.
- Press the [CANCEL] button to delete the character in the name over which the cursor is located.

4. Select [DECISION] with the [◀/▶] keys, and then press [SET].

- The screen will return to the [NETWORK] screen.

5. Select your desired item with the [▲/▼/◀/▶] keys, and then change the value of the setting with [–/+].

* The factory default settings are listed below.

- METHOD: STATIC (DHCP servers cannot be used.)
- IP ADDRESS: 192.168.0.10
- NET MASK: 225.225.225.0
- DEFAULT GATEWAY: 192.168.0.254

Consult with the network administrator for details on the settings required to connect the recorder to a LAN network.

6. Press the [SET] button.

- The settings will be saved.
- When a DHCP server has been set for METHOD, the IP address allocated by the DHCP server will be displayed the next time this menu is opened (cannot be amended.)
- When [DHCP] has been set for METHOD, the IP address acquisition process will only be performed when the recorder is rebooted or when the setting is amended to an IP address. If the network is enabled after a certain period of time has passed since rebooting, amend the METHOD setting to something different, and then change it back to [DHCP] in order to acquire the IP address.
- If setting acquisition from the DHCP server failed with [DHCP] set as the setup method, the previous STATIC IP values will be set.

* Press the [RETURN] button to return to the previous screen.

Setting up a PC Network

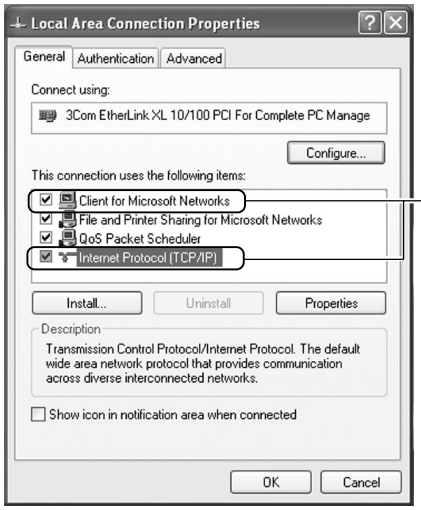
The following illustrates how to set up a small LAN using VR-509's factory settings.

1. Click on the start button.

- Right-click on [My Network], and then select the "Properties".

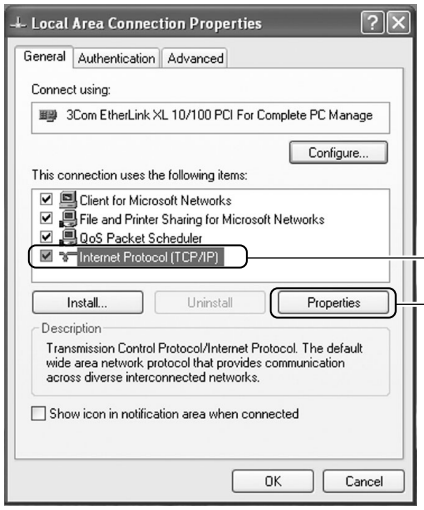
2. Select the network that is connected to the PC that operates the Web browser.

- Right-click on "Properties".



3. Confirm that this field is ticked.

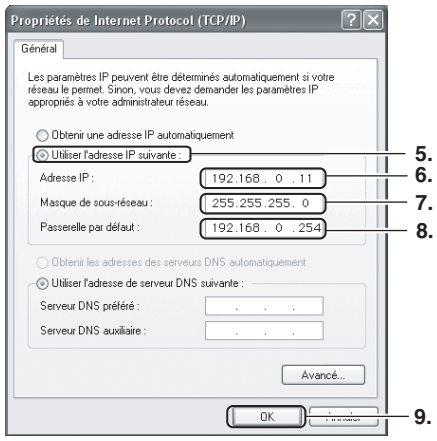
3. Confirm that "Client for Microsoft Networks" and "Internet Protocol [TCP/IP] are ticked.



4. Select "Internet Protocol (TCP/IP)"

4. Click on "Properties"

4. Select "Internet Protocol (TCP/IP)", and then click on Properties.



5.
6.
7.
8.
9.

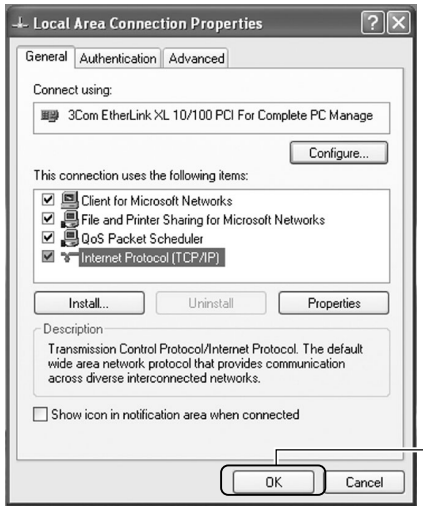
5. Select "Use the following address"

6. Set the "IP Address" to 192.168.0.11

7. Set the "Subnet Mask" to 255.255.255.0

8. Set the "Default gateway" to 192.168.0. 254

9. Click on "OK"



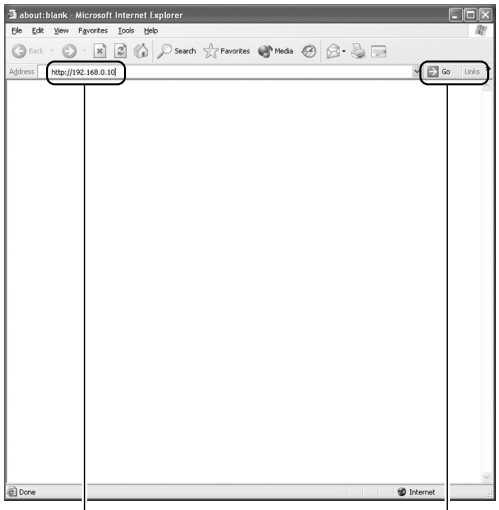
10. Click on "OK".

10. Click on the OK button on the "Local Area Connection Properties" screen.

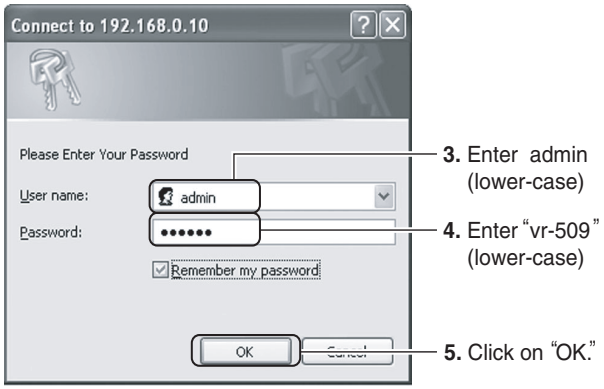
- Ensure that the same IP address is not used within the same network environment.
- Do not register more than one IP address for each NIC when setting up the PC network environment.

Connecting (Login) to the Network

1. Start up the Web browser.



2. Enter the VR-509 IP address (default factory setting: 191.168.0.10) in the Address field, and then click on "Go".



3. Enter "admin" (small letter)

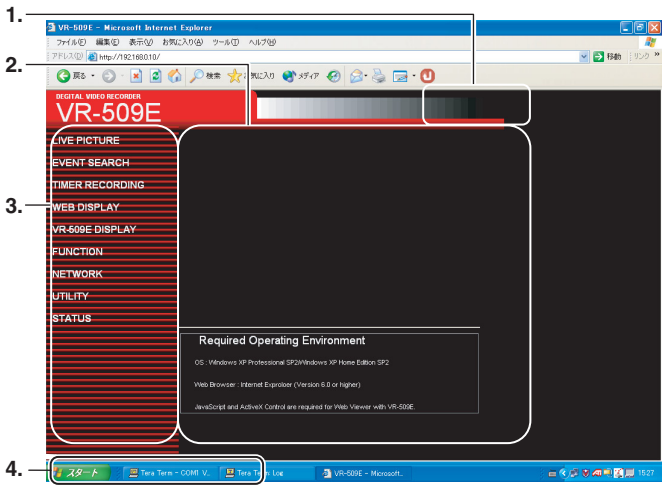
4. Enter "vr-509" (small letter)

5. Click on the OK button.

* See page 66 for details on the IP address.

- The Live Image window and the top page will be displayed if login is successful.

Top Page



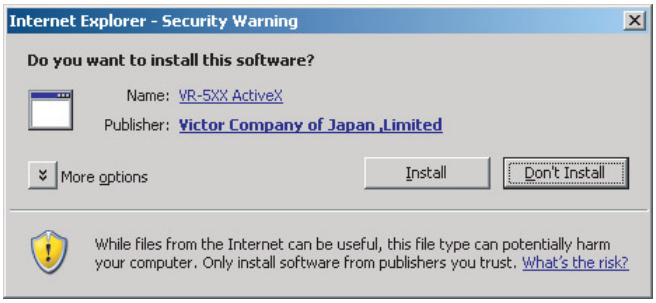
1. Displays the title.

2. Displays the selection menu.

3. Displays the setup screen.

4. The contents of each of the selection menu will be displayed when the cursor is placed over the top.

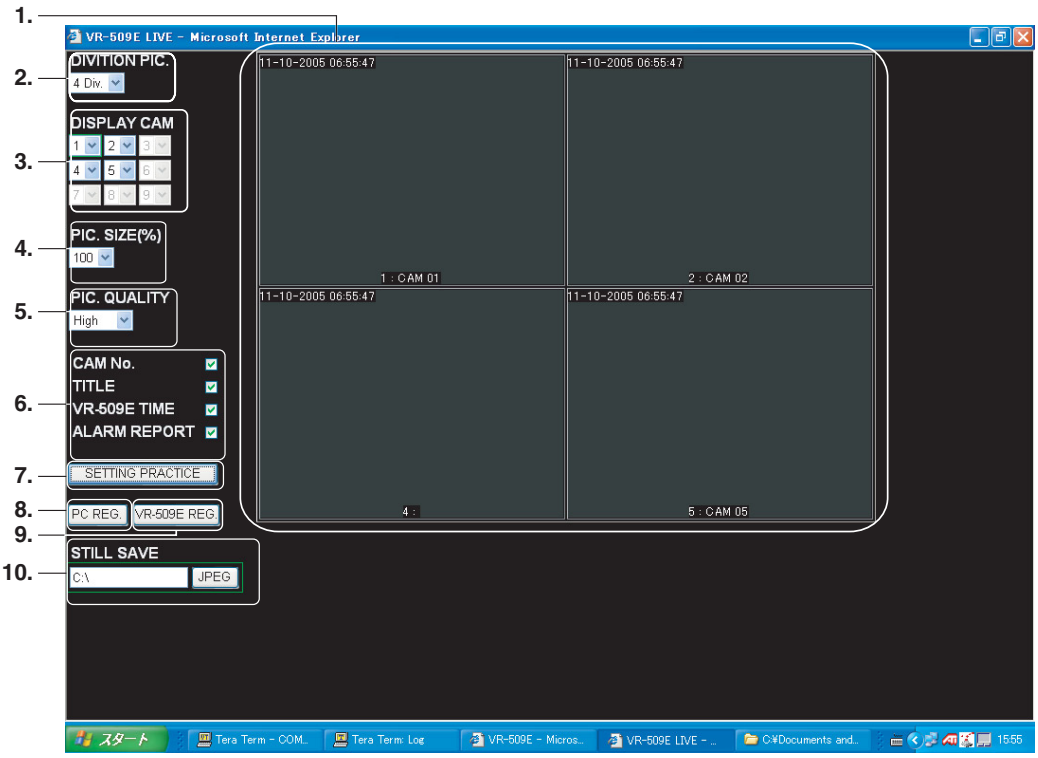
* If a dialog box similar to the one shown in the following illustration is displayed, click on [INSTALL] to execute the installation process.



Viewing Live Images Using a PC

Live Image Display

1. **Click on the Live Images button.**
   - The Live Images display window will be displayed.



1. **Live Image Display Area**

   Displays live images.
   "REC" will be displayed when the VR-509E is recording.

2. **[DIVISION PIC]**

   Enables the selection of split screens.
   1 DIVISION, 4 DIVISIONS, 6 DIVISIONS, 9 DIVISIONS

3. **[DISPLAY CAM]**

   Selects the camera to display.
   1 to 9
   * Multiple settings for the same camera are not possible when the DIV 4, DIV 6 or DIV 9 split screens are being displayed.

4. **[PIC SIZE (%)]**

   Selects the size of the display.
   25%, 50%, 75%, 100%, 200%, 400%, 800%

5. **[PIC QUALITY]**

   Selects the resolution of the display.
   High, Normal, Basic, Long

6. **Display Information**

   Selects whether or not information is to be displayed. The items that have been ticked will be displayed on the screen.
   CAMERA NO., TITLE, VR-509 TIME, ALARM REPORT

7. **[SETTING PRACTICE]**

   Executes the parameter settings from 1 to 6 when clicked.

8. **[PC REG./DEL]**

   Click on this button to save the live image display window settings onto the personal computer, and to delete the live image display window settings from the personal computer. The [PC REGISTER/DELETE] screen will be displayed. Clock on either [PC REGISTER] or [PC DELETE]. The saved data will be loaded when the live image display window is opened.

9. **[VR-509 REG.]**

   Click on this button to save the live image display window settings onto the VR-509. The saved data will be loaded when the live image display window is opened.
   (If data registered on the personal computer with the [PC REG.] button exists, that data takes precedence.)

10. **[STILL SAVE]**

    It is possible to capture still images from the live images. All displayed images will be captured.
    Enter the name of the folder in which data is to be saved on the personal computer in the text box, and then click on [JPEG]. The still image will be stored on the personal computer. The name of the image is automatically allocated.
    (See Still Image File Names on page 62)
    * Add "/" to the end of the folder name in which the file is to be stored.

MEMO

See the section of Registration Functions (page 75) for details on the folder name in which still images are saved.

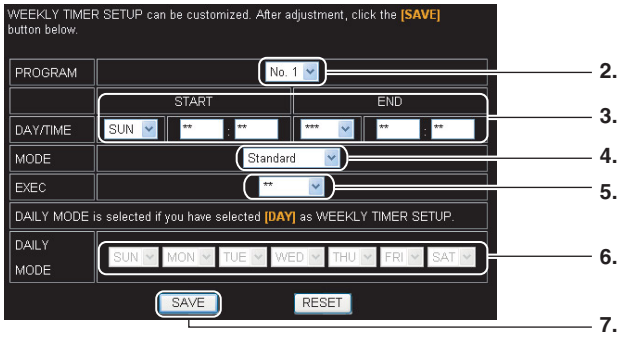
CAUTION

- Close the playback image display window if it is open.
- There are cases where images recorded close to the times of power failures will not playback normally.

Record Program Using a PC

Adding to the Weekly Timer

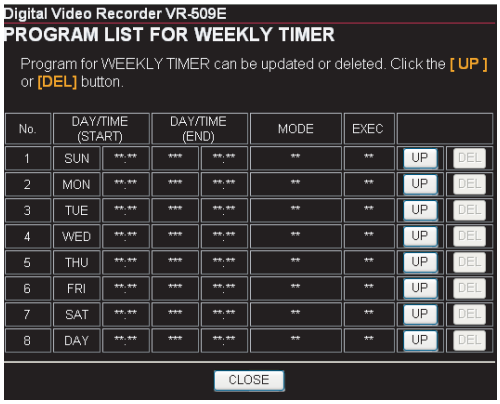
1. **Click on [TIMER RECORDING] → [WEEKLY TIMER].**
   - The [WEEKLY TIMER SETUP] and program list (weekly timer settings) screen will be displayed.



2. **Select the [PROGRAM] number against which recording is to be reserved.**
3. **Enter the [START] and [END] times.**
4. **Select [MODE].**
5. **Select [ON], [OFF] or [WEEKLY] for [EXEC].**
   * [WEEKLY] cannot be selected if [DAILY] has been set for [START].
6. **Set the days on which recording is to be carried out in [DAILY MODE] if [DAILY] has been selected for [START].**
   * These fields will be grayed out and selection not possible if any setting other than [DAILY] has been selected for [START].
7. **Click on the [SAVE] button.**

   (Click on [RESET] to clear the settings already made.)
   - The settings will be saved.
   - The updated program list (weekly timer settings) screen will be displayed.

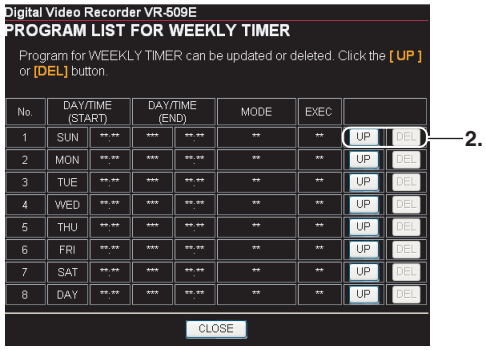
Program List (Weekly Timer Setting) Screen



■ Click on [CLOSE] to close the window.

Changing and Deleting the Weekly Timer

1. **Click on [TIMER RECORDING] → [WEEKLY TIMER].**
   - The [WEEKLY TIMER SETUP] and program list (weekly timer settings) screen will be displayed.



Changing the Programs

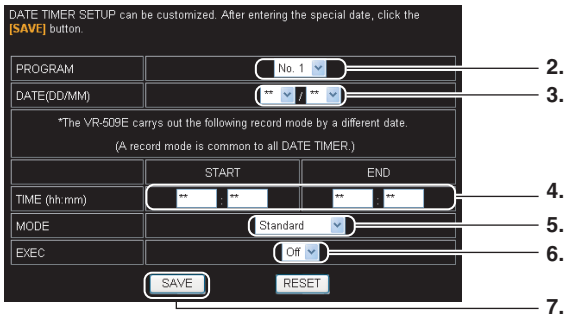
2. **Click on the [UP] button.**
   - A confirmation screen showing the amendments will be displayed.
3. **Click on the [UP] button on confirmation screen.**
   - The program will be updated.
   - The updated program list (weekly timer settings) screen will be displayed.

Deleting the Programs

2. **Click on the [DEL] button.**
   - A confirmation screen showing the details to be deleted will be displayed.
3. **Click on the [DEL] button on confirmation screen.**
   - The program will be deleted.
   - The updated program list (weekly timer settings) screen will be displayed.

Adding to the Date Timer

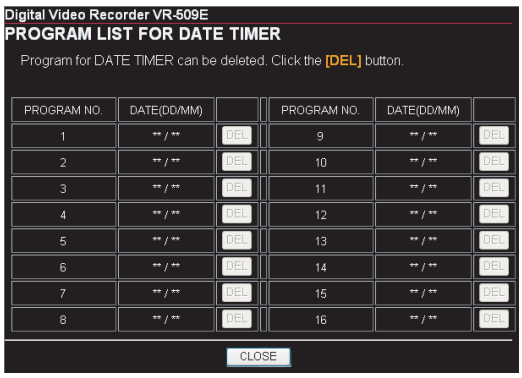
1. **Click on [TIMER RECORDING] → [DATE TIMER].**
   - The [DATE TIMER SETUP] and program list (date timer settings) screen will be displayed.



2. **Select the [PROGRAM] number against which recording is to be reserved.**
3. **Select the [DATE (DD:MM)] for the recording.**
4. **Enter the [START] and [END] times.**
5. **Select [MODE].**
6. **Select [ON] or [OFF] for [EXEC].**
7. **Click on the [SAVE] button.**

   (Click on [RESET] to clear the settings already made.)
   - The settings will be saved.
   - The updated program list (date timer settings) screen will be displayed.

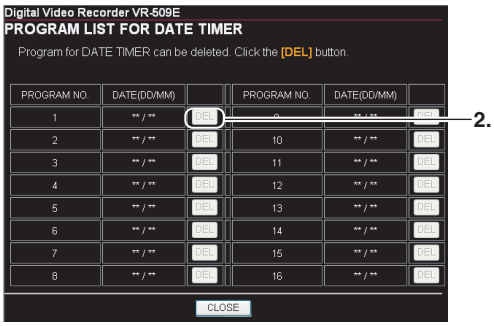
Program List (Date Timer Setting) Screen



■ Click on [CLOSE] to close the window.

Deleting the Date Timer

1. **Click on [TIMER RECORDING] → [DATE TIMER].**
   - The [DATE TIMER SETUP] and program list (date timer settings) screen will be displayed.

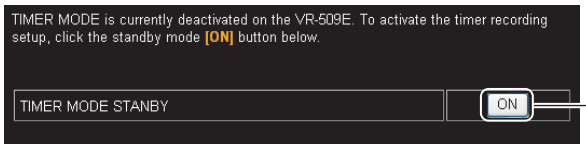


2. **Click on the [DEL] button.**
   - A confirmation screen showing the details to be deleted will be displayed.
3. **Click on the [DEL] button on confirmation screen.**
   - The program will be deleted.
   - The updated program list (date timer settings) screen will be displayed.

TIMER MODE

When the TIMER MODE is Deactivated

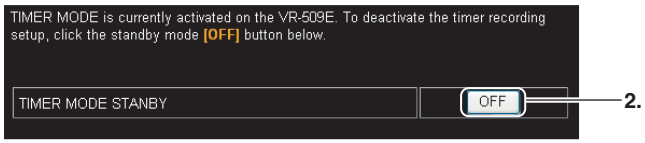
1. **Click on “TIMER RECORDING” → “TIMER MODE” in that order.**



2. **Click the [ON] button.**
   - The TIMER MODE will be activated.

When the TIMER MODE is Activated

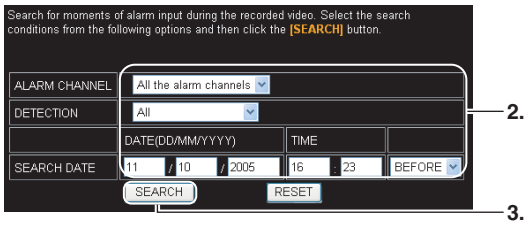
1. **Click on “TIMER RECORDING” → “TIMER MODE” in that order.**



2. **Click on the [OFF] button.**
   - The TIMER MODE will be deactivated.

ALARM SEARCH

1. Click on “EVENT SEARCH” → “ALARM SEARCH” in that order.



2. Select the search conditions.

Settings

ALARM CHANNEL

All Alarm Channels: Searches for all recorded images regardless of the channel.

ch1 to ch9: Searches for recorded images only on the specified channel.

DETECTION

All: Searches for all recorded images regardless of the alarm type.

Emergency: Searches for the images recorded with emergency port input.

Alarm: Searches for the images recorded with alarm port input.

M.Detection: Searches for the images recorded with motion detection.

SEARCH DATE

Enter the year, month, date, hour and minutes required for the search.

Before/After

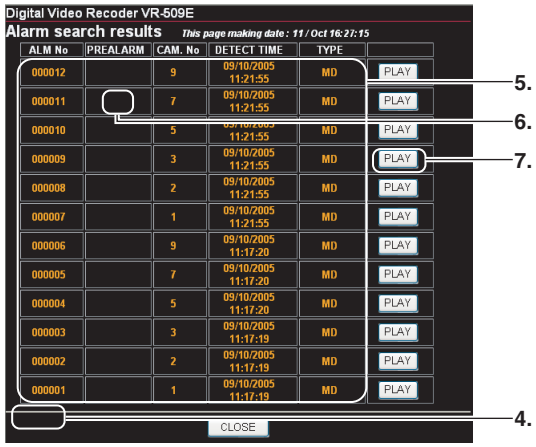
Before: Searches for images recorded prior to the specified date.

After: Searches for images recorded after the specified date.

3. Click on the [SEARCH] button.

- The “ALARM SEARCH” screen will be displayed. (Click on [RESET] to clear the entry.)

ALARM SEARCH Screen



4. Select the recorded image to be played back from the list of search results.

- 15 items will be displayed for the recording image list at one time. Click on the button to open the page.
  [CONTINUE NEXT 15 ITEMS]:
  Displays the next screen.
  [RETURN PREVIOUS 15 ITEMS]:
  Displays the previous screen.

5. Select Recording image list.

- Select the recording image to be played back by referring to the listed items.

Display Items

ALARM NO

The alarm number registered in the VR-509 database.

PREALARM

Pre-alarm recordings will be displayed in the check-box when available. Press the [PLAY] button after clicking on the relevant entry to commence playback from the pre-alarm recording.

CAM. NO

Displays the recorded camera input.

DETECT TIME

Displays the date and time of detection.

TYPE

AL terminal: Alarm input terminal
MD: M.DET
EMG: Emergency input terminal
P.ERROR: Passcode error

6. Select whether to playback the pre-alarm recording.

- Add a tick to the checkbox to play-back pre-alarm recordings.

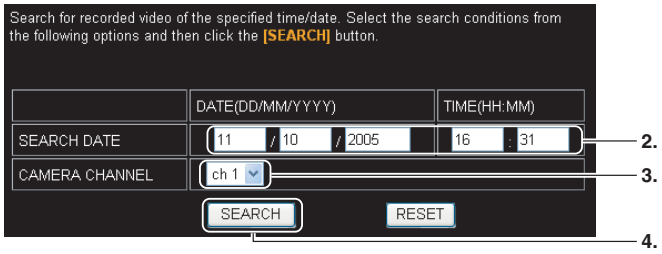
7. Click on the [PLAY] button.

- Playback will start. (Page 75)

Viewing Playback Image Using a PC

TIME/DATE SEARCH

1. **Click on “EVENT SEARCH” → “TIME/DATE SEARCH” in that order.**

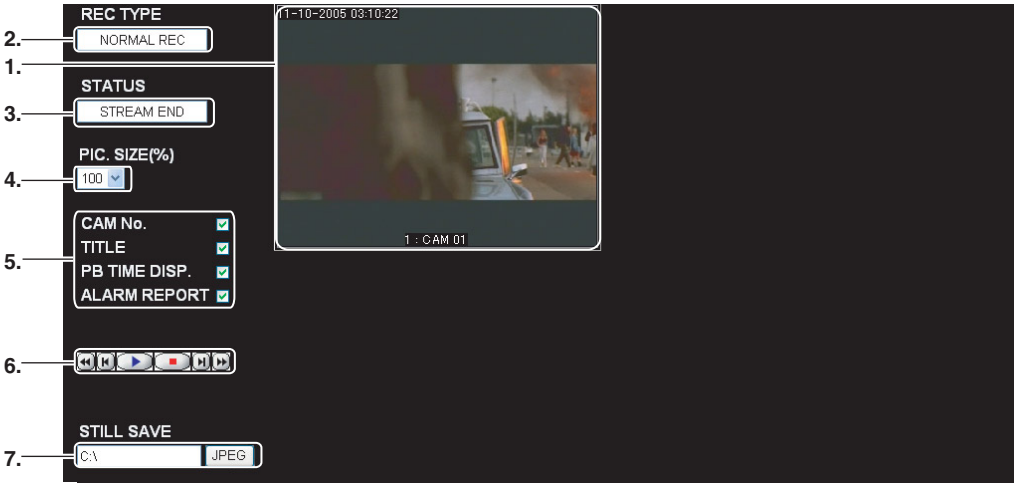


2. **Enter the date and time of the search.**
3. **Select the channel to be searched.**
4. **Click on the [SEARCH] button.**
   - Playback screen will be displayed.
     (Click on the RESET button to clear the entry.)

Playback Image Display

1. Executes either the “ALARM SEARCH” or the “TIME/DATE SEARCH”.

- The Playback image display screen will be displayed.



1. Live Image Display Area

Displays live images.

2. [REC TYPE]

Displays the recording mode.
NORMAL, TIMER, ALARM, etc.

3. [STATUS]

Displays the playback status.
TOP, END, -x5, ..., -x1, PAUSE, x1, ..., x5

4. [PIC SIZE (%)]

Selects the size of the display.

5. Display Information

Selects whether or not information is to be displayed.
CAMERA NO., TITLE, PLAYBACK TIME, ALARM REPORT

6. Operation Buttons

▶ : Normal playback.
❙❙ : Playback is paused.
▶▶/◀◀ : Search playback in the forward or reverse directions.
The search playback will be performed at x1 speed with one click, x3 speed with two clicks, and x5 speed with three clicks (the speed will be displayed in the operation status display area.)
▶❙/❙◀ : Skip playback in the forward or reverse directions.

7. [STILL SAVE]

It is possible to capture still images.
Enter the name of the folder in which data is to be saved on the personal computer in the text box, and then click on [JPEG]. The still image will be stored on the personal computer. The name of the image is automatically allocated.
(See Still Image File Names on page 62)

* Add “/” to the end of the folder name in which the file is to be stored.

CAUTION

- A message stating “No response from the VR-509” will be displayed if the playback display window is opened with a window opened on the live display screen, but this is not a malfunction.
- Close the live image display window if it is open. There are cases where playback will fail if it is started immediately after closing the live screen. Leave a small amount of time between switching from the live screen to the playback screen.
- The playback window will be initialized whenever the [TIME/DATE SEARCH PLAYBACK] search is run.

MEMO

Registration Functions for the Name of the Folders in Which Still Images are Saved

This is a convenient function that remembers the details entered into the save still image text box to simplify the procedure the next time an image is saved.

■ **Preparations**

1. Click on the [Tools] → [Internet Options] → [Contents] → [Auto-Complete] buttons on Internet Explorer with the mouse.
2. Add a tick to the [Form] column check box.

■ **Registration**

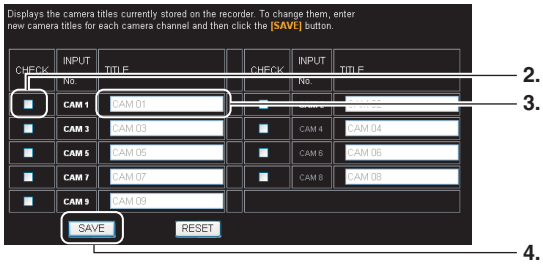
Enter the name of the folder that is to be registered in the save still image text box, and then press the [ENTER] key to register it.

■ **Selecting folders that have had names registered**

Double-click on the left-hand mouse button over the save still image text box to display a pull-down menu of the folder names that have been registered before.
Select the required folder name from amongst those displayed.

Inputting a Camera Title

1. **Click on “DISPLAY” → “CAMERA TITLE” in that order.**



* When [CAM1 to CAM9] for the [INPUT NO.] is grayed out, it indicates that the camera input setting for [INTRODUCTION SET-1] is set at [DISCONNECT]. (See page 20)

CAUTION

There are cases where the camera title will not be displayed normally on the [DISPLAY] → {CAMERA TITLE} field on personal computers if it has been set at [”] on the VR-509E’s [CAMERA TITLE] setup screen.

2. **Click on your desired checkbox.**
   - It is not possible to enter camera titles unless the relevant checkbox has first been clicked.

3. **Enter the camera title.**

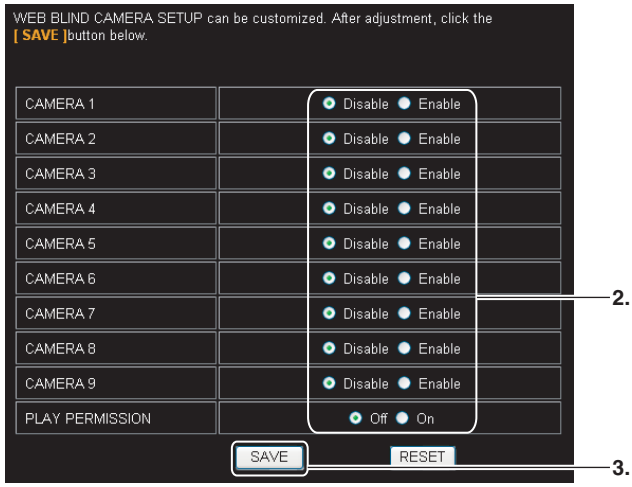
Valid Characters

A maximum of twenty single-byte alphanumerals may be used for entering the camera title.

4. **Click on the [SAVE] button.**
   - Make sure that all camera titles that need to be changed have been entered before pressing the [SAVE] button.
   - The camera titles that have been left blank when the [SAVE] button is pressed will be initialized.
   - Character amendments are not possible once the [SAVE] button has been pressed. The entire title must be entered in full once again.
   - Click on the [RESET] button to return the settings to the VR-509 default settings.

Covert Channel Setting for Live image/ Playback display screen

1. **Click on “WEB” → “COVERT CHANNEL” in that order.**

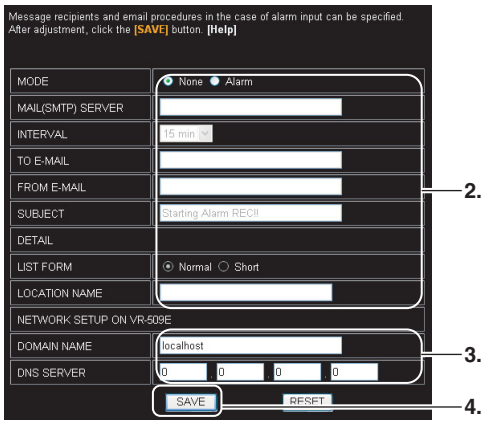


2. **Change the setting. (See on page 27 for details)**

3. **Click on the [SAVE] button.**
   - (Click on “RESET” to return to the setting values on the main unit.)

Mail Notification Setting During Alarm Input

1. Click on "NETWORK" → "E-MAIL" in that order.



2. Enter/Select the required parameter.

Settings

MODE

None: Disables the alarm report.

Alarm: Transmits an e-mail when an alarm is input.

MAIL (SMTP) SERVER

Enters the domain name of the mail server.

INTERVAL

5 MIN, 10 MIN, 15 MIN, 30 MIN:The shortest mail transmission interval.

TO E-MAIL

Enters the mail address of the recipient.

FROM E-MAIL

Enters the mail address of the sender.

SUBJECT

Enters the subject name.

LIST FORM

Normal Mail: Creates an e-mail with less than 40 characters on one line.

Mobile Mail: Creates an e-mail with less than 25 characters on one line.

LOCATION NAME

Enters the installment location.

3. Check the existing network settings.

Display Items

DOMAIN NAME

Displays the domain name.

DNS SERVER

Displays the DNS server.

4. Click on the [SAVE] button.

- An e-mail will be transmitted in accordance with the specified parameters when an alarm is input.

5. The mail sending report settings confirmation screen will be displayed.

- Text mail transmission is possible by clicking on [SEND TEXT MAIL], so check to ensure that mail can be received by the specified address.

CAUTION

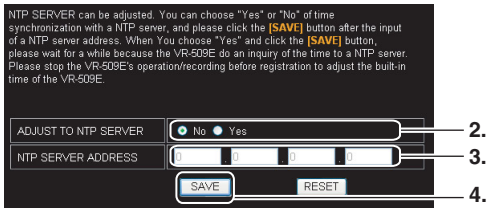
- There are cases where mail notification will not be carried out depending on the licensing agreement with the mail server. (The mail server for which licensing is to be carried out cannot be accessed.)
- Consult with the network administrator for details on the parameter values of the mail server.
- Not all alarm lists can be received on mobile telephones depending on the setting that determines the number of characters that can be received.
- All though mail will be notified within ten minutes of the first alarm input regardless of the mail notification interval setting, additional time may be required until receipt depending on the network environment.

Adjusting Clocks with the NTP Server

If the times set in the system clocks of all VR-509 that are linked up to a multiple unit network are not synchronized, alarm searches cannot be performed accurately. It is therefore necessary to make sure that all system clocks are synchronized in accordance with the NTP server settings when multiple VR-509s are connected together.

Registering NTP Server

1. **Click on “NETWORK” → “NTP SERVER” in that order.**



2. **Click on the [YES] button.**
3. **Enter the NTP server address.**
4. **Click on the [SAVE] button.**
   - The system clock is synchronized with the NTP server.
5. **Confirm the result of clock synchronization.**
   - The result of clock synchronization will be displayed.

When Clock Synchronization is Successful

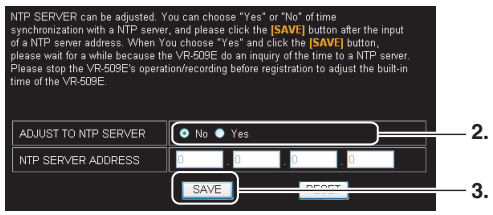
- A message stating “TIME ADJUSTMENT WITH THE NTP SERVER IS VALID” will be displayed.

When Clock Synchronization Fails

- A message stating “ACCESS TO THE NTP SERVER FAILED” will be displayed.
- Check to verify that the NTP server address was correctly entered, and then repeat the registration procedure.

Canceling NTP Server Registration

1. **Click on “NETWORK” → “NTP SERVER” in that order.**



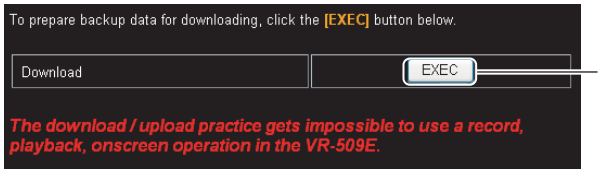
2. **Click on the [NO] button.**
3. **Click on the [SAVE] button.**
   - The NTP server registration will be cancelled.
   - A confirmation screen will be displayed.

MEMO

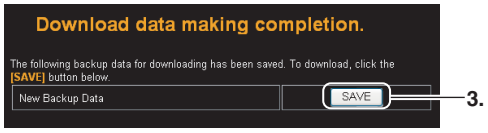
- The NTP server registration setting cannot be carried out when recording is in progress. It is possible to adjust the time during recording when NTP server registration has been set to [YES].
  When time synchronization with the NTP server has been enabled, time adjustment will be carried out once every hour.
- See page 107 for details on the personal computer settings (Windows XP and Windows 2000) for when the NTP server function is in use.

Downloading VR-509 Settings

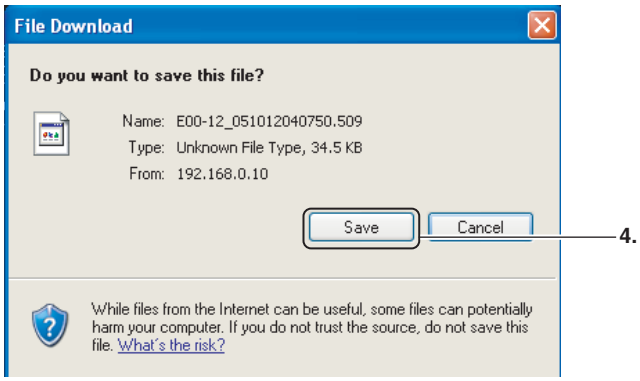
1. **Click on “UTILITY” → “DOWNLOAD” in that order.**



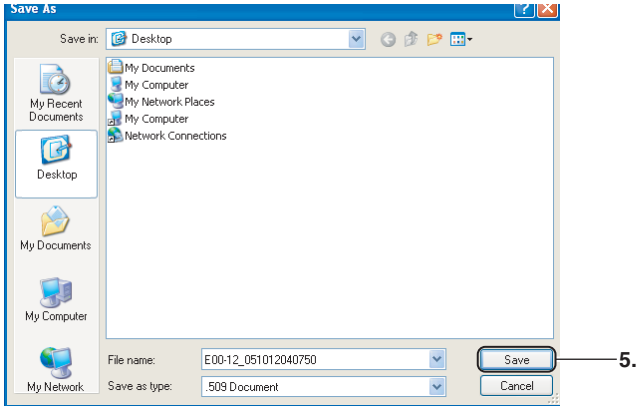
2. **Click on the [EXEC] button.**
   - The “DOWNLOAD IN PROGRESS” screen will be displayed.
   - A screen stating “Download data making completion” will be displayed when the download has finished.



3. **Click on the [SAVE] button.**
   - The “FILE DOWNLOAD” screen will be displayed.



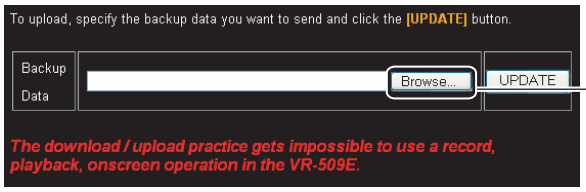
4. **Click on the [SAVE] button.**
   - The “SAVE AS” screen will be displayed.



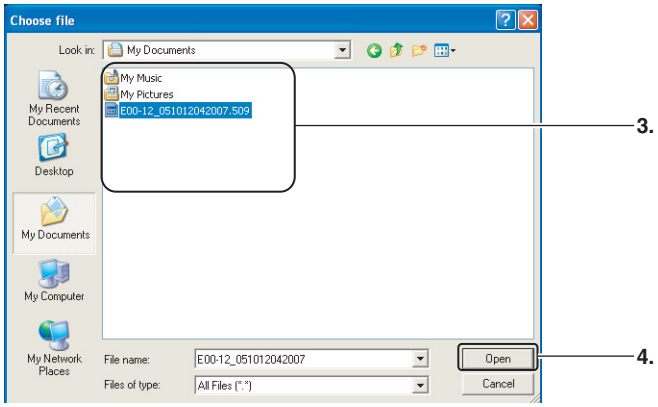
5. **Click on the [SAVE] button.**
   - The downloading procedure will be activated.

Uploading VR-509 Settings

1. **Click on “UTILITY” → “UPLOAD” in that order.**

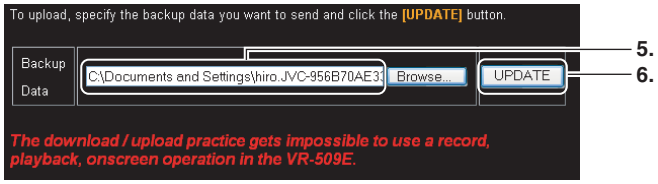


2. **Click on the [Browse] button.**
   - The “FILE SELECTION” screen will be displayed.



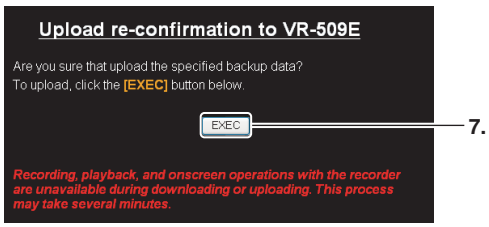
3. **Click on the file that is to be uploaded.**

4. **Click on the [OPEN] button.**
   - The display will return to the “UPLOAD” screen.



5. **Check the name of the file to be uploaded.**

6. **Click on the [UPDATE] button.**
   - The “Upload re-confirmation to VR-509” screen will be displayed.

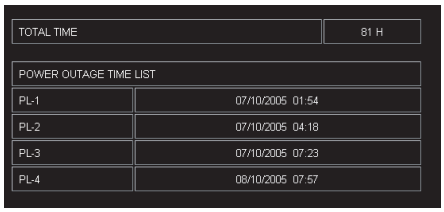


7. **Click on the [EXEC] button.**
   - The uploading procedure will be activated.

8. **Wait until the upload procedure has been completed.**
   - A screen stating “UPLOAD COMPLETE” will be displayed when the uploading procedure has finished.
   - VR-509 will be automatically restarted.

MAINTENANCE

1. **Click on “UTILITY” → “MAITENANCE” in that order.**



- Displays the usage time and power outage time list.

OPERATION LOG

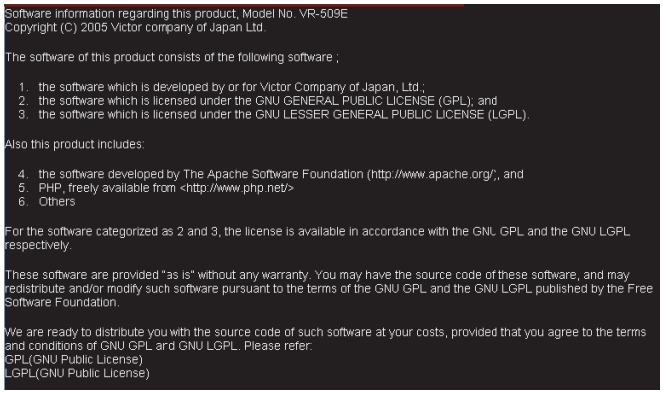
1. **Click on “UTILITY” → “OPERATION LOG” in that order.**
   - Displays the OPERATION LOG.
   - Displayed in the sequence of date/time the operation log was saved, date/time the operation was carried out, and the contents of the operation.

RECORDING LOG

1. **Click on “UTILITY” → “RECORDING LOG’ in that order.**
   - Displays the RECORDING LOG.
   - Displayed in the sequence of date/time the recording log was saved, date/time the recording was carried out, and the contents of the recording.

OPEN SOURCE

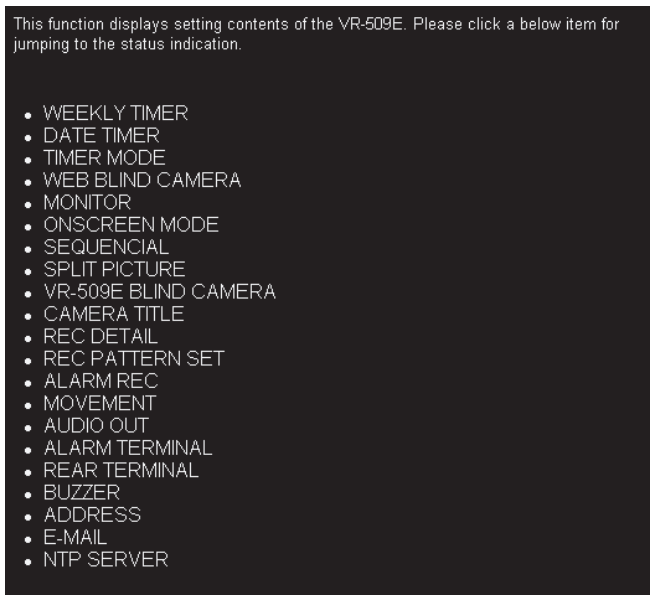
1. **Click on “UTILITY” → “OPEN SOURCE” in that order.**



- Displays the information concerning OPEN SOURCE.

STATUS

1. **Click on “STATUS”.**



- Displays all the setting items as a list. Click on your desired item, then you jumps to it.

Display Items

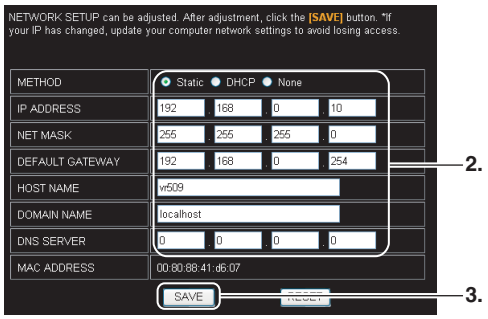
- WEEKLY TIMER
- DATE TIMER
- TIMER MODE
- COVERT CHANNEL (WEB)
- MONITOR
- ONSCREEN MODE
- SEQUENCIAL
- SPLIT PICTURE
- COVERT CHANNEL
- CAMERA TITLE
- REC DETAIL
- REC PATTERN SET
- ALARM REC
- MOVEMENT
- AUDIO OUT
- ALARM TERMINAL
- REAR TERMINAL
- BUZZER
- ADDRESS
- E-MAIL
- NTP SAVER

* When [SEQUENTIAL], [CAMERA TITLE], [REC PATTERN SET], [ALARM REC] and [ALARM TERMINAL] are grayed out, it indicates that the camera input settings for the [INTRODUCTION SET-1] that correspond to the grayed out items have been set to [DISCONNECT]. (See page 20)

Changing Network Settings

Setting a Network Address

1. Click on “NETWORK” → “ADDRESS” in that order.



2. Change the settings. (For more details, see page 66)

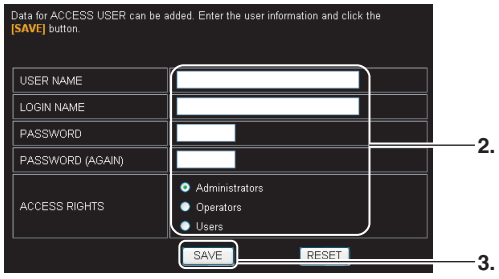
- When network settings of VR-509 are changed, network settings need to be altered according at the PC. Consult the network administrator when making alterations.
- Upon changing network settings of VR-509, change the network settings at the PC as well, followed by restarting the Web browser.

3. Click on the [SAVE] button.

(Click on the [RESET] button to return to the setting values on the main unit.)

Registering an ACCESS USER

1. Click on “NETWORK” → “ACCESS USER SETUP” in that order.



2. Enter/selection user information.

Settings

USER NAME

Enter within 32 single-byte characters.

LOGIN NAME

Enter within 32 single-byte alphanumerals.

PASSWORD

Enter within 8 single-byte alphanumerals.

PASSWORD (AGAIN)

Enter the password once again for confirmation purposes.

ACCESS RIGHTS

Select from either Administrators, Operators or Users.

Access rights for each menu:

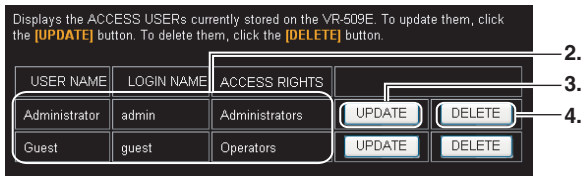
	Administrators	Operators	Users
Live Image Screens	○	○	○
Event Search	○	○	○
Timer Recording Reservation	○	○	×
WEB Displays	○	○	×
Main Unit Displays	○	○	×
Main Unit Operations	○	○	×
Network	○	×	×
Utilities	○	×	×
Status	○	○	○

3. Click on the [SAVE] button.

Click on [RESET] to clear the entry.

ACCESS USER Confirmation Screen

1. Click on “NETWORK” → “ACCESS USER CONFIRMATION”.



2. This screen enables the access user profiles to be checked.

3. Press the [UPDATE] button to make any amendments.

4. Press the [DELETE] button to delete users.

MEMO

The following two user names are registered when the VR-509E is shipped from the factory.

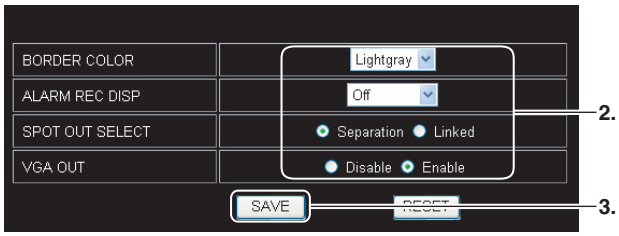
	①	②
USER NAME	admin	guest
PASSWORD	vr-509	vr-509
ACCESS RIGHTS	Administrators	Operators

Changing VR-509 Settings Using a PC

It is possible to change the VR-509 settings with the use of a personal computer.
See the reference page for further details of the relevant parameters.

MONITOR OUT

1. **Click on “DISPLAY” → “MONITOR OUT” in that order.**

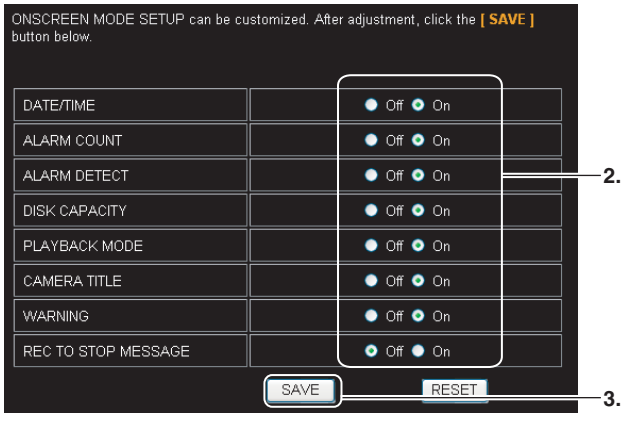


2. **Change the settings. (See page 24 for details)**
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

INDICATION

1. **Click on “DISPLAY” → “INDICATION” in that order.**

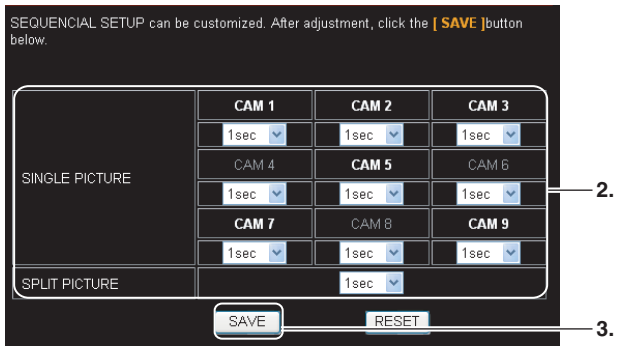


2. **Change the settings. (See page 25 for details)**
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

AUTO CHANGE

1. **Click on “DISPLAY” → “AUTO CHANGE” in that order.**



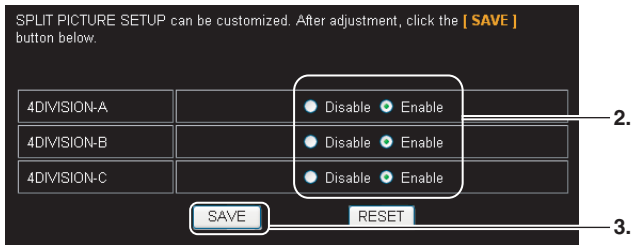
2. **Change the settings. (See page 24 for details)**
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

   * When the display is grayed out, it indicates that the camera input settings for the [INTRODUCTION SET-1] that correspond to the grayed out cameras have been set to [DISCONNECT]. (See page 20)

DIVISION PIC.

1. **Click on “DISPLAY” → “DIVISION PIC.” in that order.**

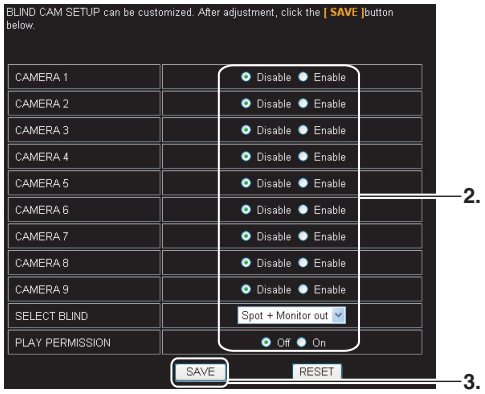


2. **Change the settings. (See page 25 for details)**
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

COVERT CHANNEL

1. **Click on “DISPLAY” → “COVERT CHANNEL” in that order.**

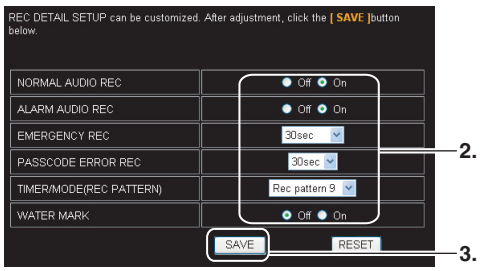


2. **Change the settings. (See page 27 for details)**
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

REC DETAIL

1. **Click on “FUNCTION” → “REC DETAIL” in that order.**



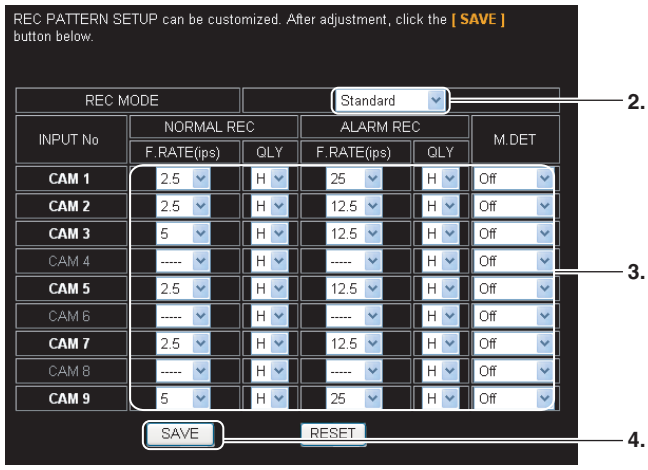
2. **Change the settings. (See page 30 for details)**
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

REC PATTERN

It is possible to change the default recording parameters for each mode on the same screen as the setup mode selection screen.

1. **Click on “FUNCTION” → “REC PATTERN” in that order.**



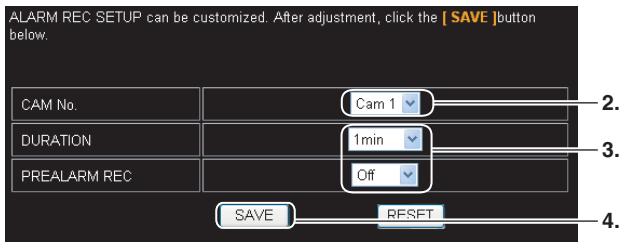
2. **Select the mode to be set up.**
3. **Change the settings. (See page 31 for details)**
4. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

   * When the display is grayed out, it indicates that the camera input settings for the [INTRODUCTION SET-1] that correspond to the grayed out cameras have been set to [DISCONNECT]. (See page 20)

ALARM REC

1. **Click on “FUNCTION” → “ALARM REC” in that order.**



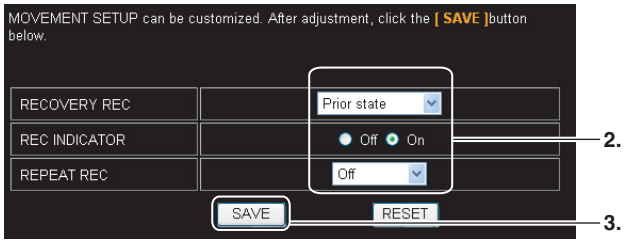
2. **Select the camera to be set up.**
3. **Change the settings. (See page 31 for details)**
4. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

   * When the display is grayed out, it indicates that the camera input settings for the [INTRODUCTION SET-1] that correspond to the grayed out cameras have been set to [DISCONNECT]. (See page 20)

OPERATION

1. **Click on “FUNCTION” → “MOVEMENT SETUP” in that order.**

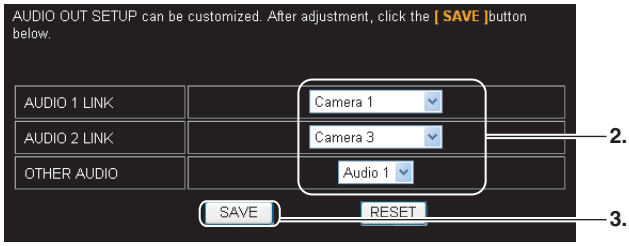


2. **Change the settings. (See page 32 for details)**
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

AUDIO OUT

1. **Click on “FUNCTION” → “AUDIO OUT” in that order.**

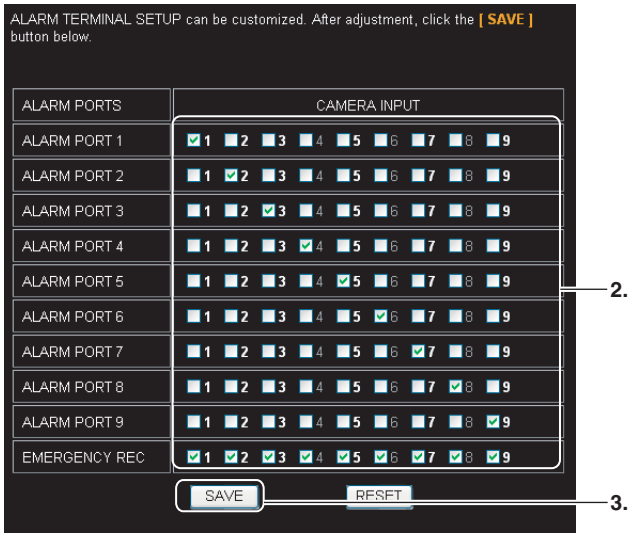


2. **Change the settings. (See page 45 for details)**
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

ALARM TERMINAL

1. **Click on “FUNCTION” → “ALARM TERMINAL” in that order.**



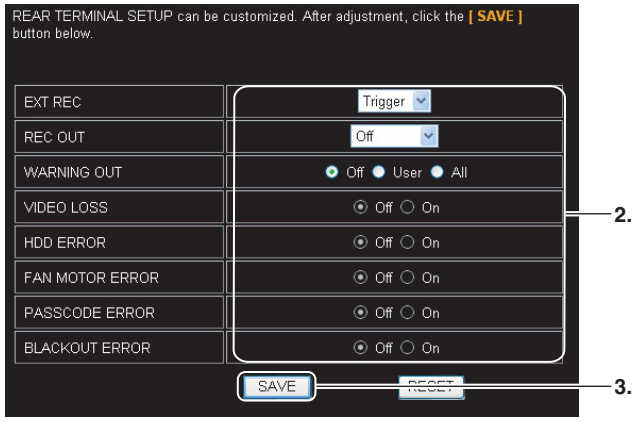
2. **Change the settings.**
   - A table with the alarm input terminals laid out vertically and the camera inputs laid out horizontally will be displayed.
   - If a check mark is added to the number that denotes the camera input to the right of a alarm terminal that has received an input, it means it has been enabled. If it remains blank, it means it is disabled.
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

   * When the display is grayed out, it indicates that the camera input settings for the [INTRODUCTION SET-1] that correspond to the grayed out cameras have been set to [DISCONNECT]. (See page 20)

REAR TERMINAL

1. **Click on “FUNCTION” → “REAR TERMINAL” in that order.**

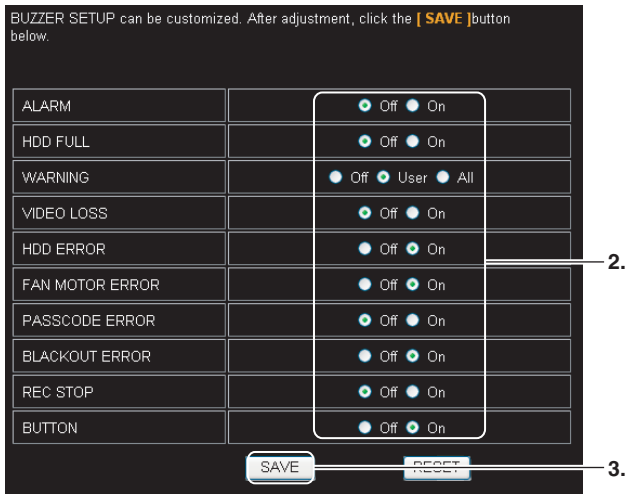


2. **Change the settings. (See page 49 for details)**
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

BUZZER

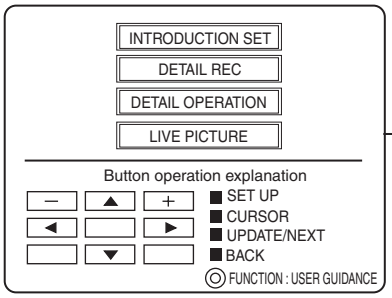
1. **Click on “FUNCTION” → “BUZZER” in that order.**



2. **Change the settings. (See page 49 for details)**
3. **Click on the [SAVE] button.**

   (Click on the [RESET] button to return to the setting values on the main unit.)

Menu Flowchart



(Page 18)

LIVE PICTURE

(Page 23)

INTRDUCTION SET-1	
CAM 1	CONNECT
CAM 2	CONNECT
CAM 3	CONNECT
CAM 4	CONNECT
CAM 5	CONNECT
CAM 6	CONNECT
CAM 7	CONNECT
CAM 8	CONNECT
CAM 9	CONNECT
PRIORITY	SMOOTH

(Page 20)

INTRODUCTION SET-2	
DURATION	5 DAYS
AUDIO REC	ON
REPEAT REC	ALL

(Page 20)

DETAIL REC	
OPERATION SET ..	
NORMAL AUDIO REC	OFF
ALARM AUDIO REC	OFF
ALARM TERMINAL ..	
ALARM REC ..	
EMERGENCY REC	OFF
PASSCODE ERROR REC	OFF
TIMER/MODE(REC PATERN)	PROGRAM TIMER
WEEKLY TIMER ..	
DATE TIMER ..	
WATER MARK	OFF

(Page 30)

OPERATION SET
STANDARD ..
REC PATTERN1 ..
REC PATTERN2 ..
REC PATTERN3 ..
REC PATTERN4 ..
REC PATTERN5 ..
REC PATTERN6 ..
REC PATTERN7 ..
REC PATTERN8 ..
REC PATTERN9 ..

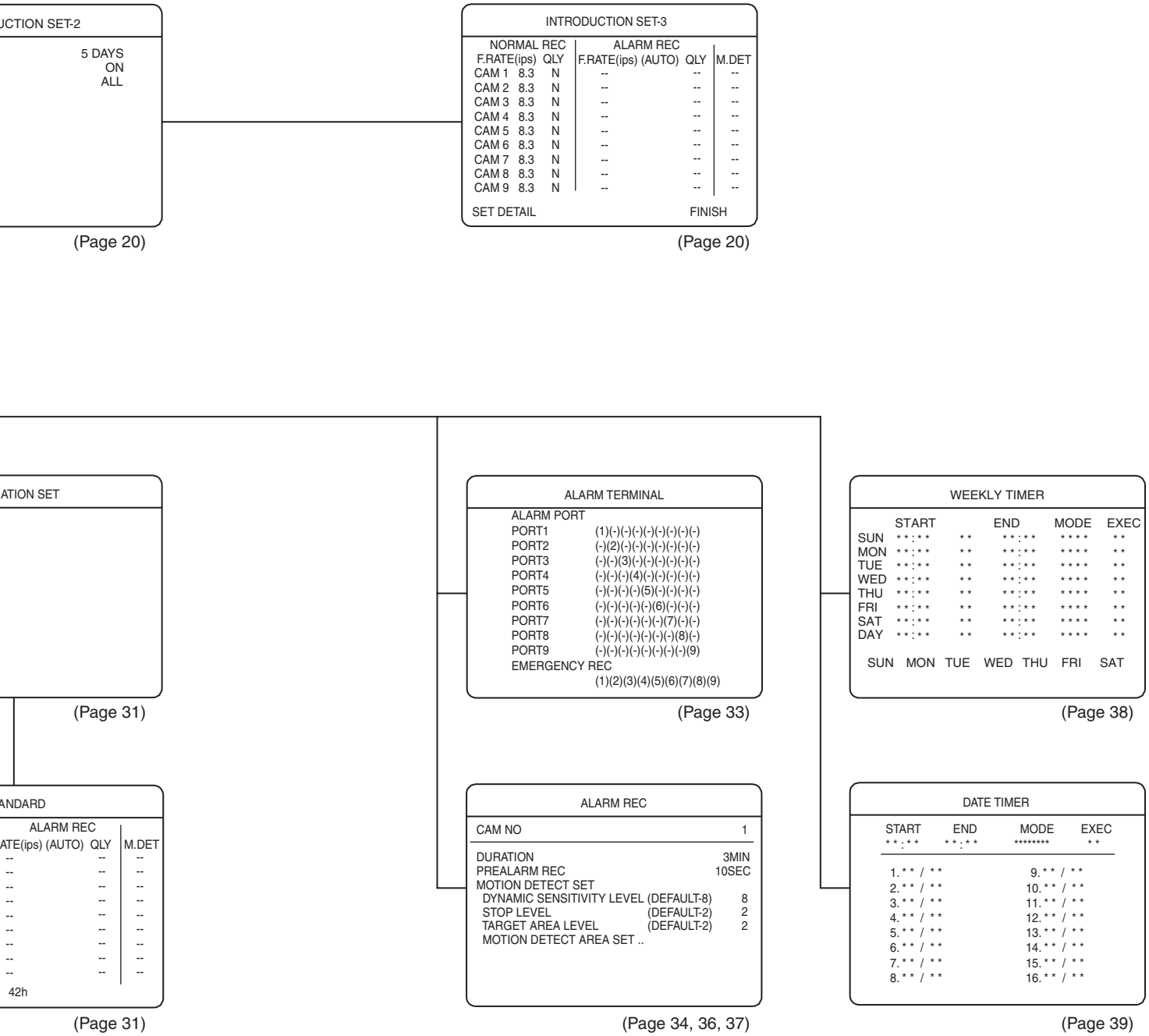
(Page 31)

STANDARD

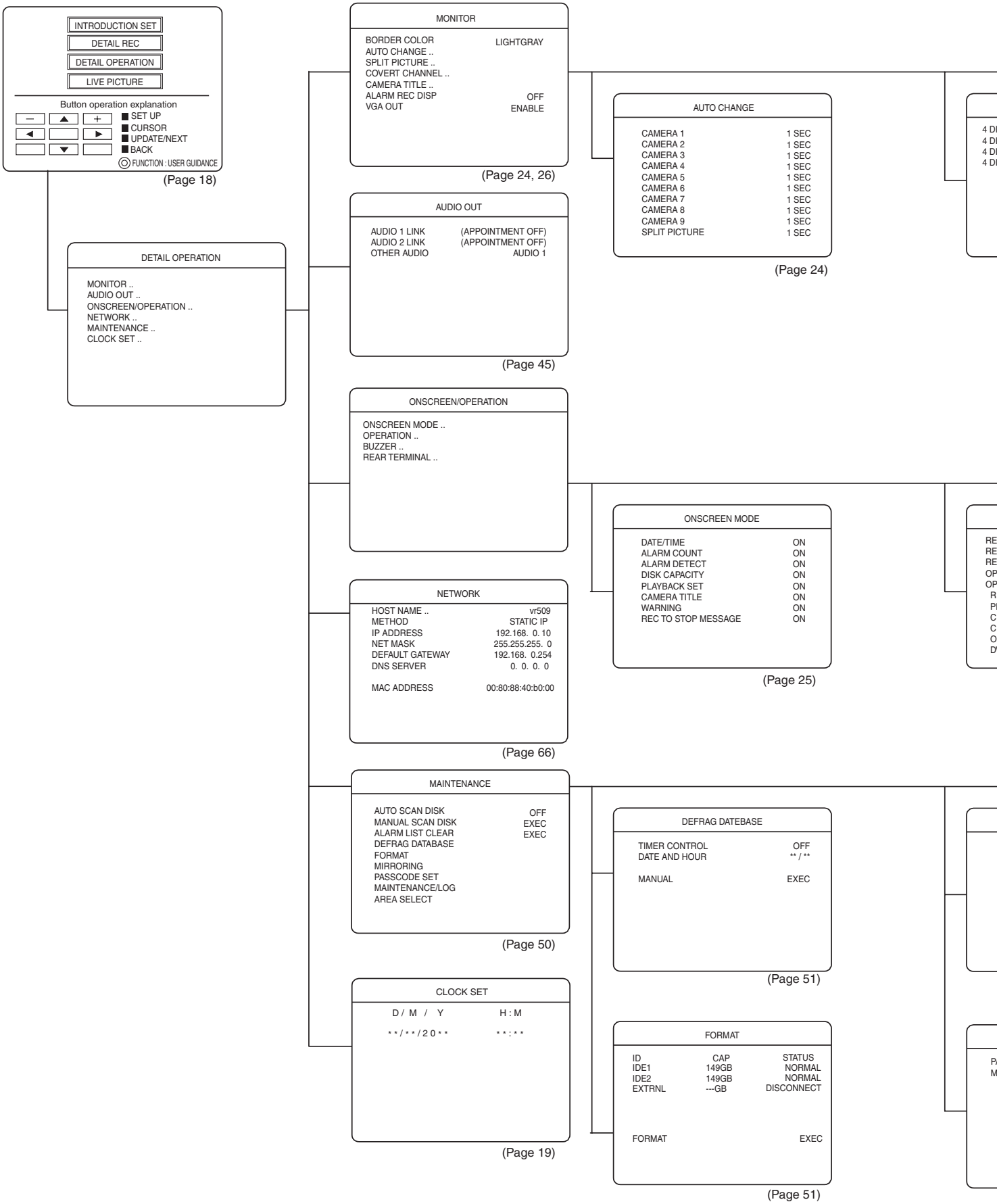
	NORMAL REC		ALARM REC		
	F.RATE(ips)	QLY	F.RATE(ips) (AUTO)	QLY	M.DET
CAM 1	8.3	N	--	--	--
CAM 2	8.3	N	--	--	--
CAM 3	8.3	N	--	--	--
CAM 4	8.3	N	--	--	--
CAM 5	8.3	N	--	--	--
CAM 6	8.3	N	--	--	--
CAM 7	8.3	N	--	--	--
CAM 8	8.3	N	--	--	--
CAM 9	8.3	N	--	--	--
RECORDABLE HOUR			42h		

(Page 31)

Menu Flowchart (continued)



Menu Flowchart (continued)



Menu Flowchart (continued)

Menu List

[●] are factory settings.

INTRODUCTION SET-1 (Page 20)	
Items	Settings
CAM 1 to 9	● CONNECT, DISCONNECT
PRIORITY	● SMOOTH, HIGH-QUALITY

INTRODUCTION SET-2 (Page 20)	
Items	Settings
DURATION	1DAY, 3DAYS, 5DAYS, ● 1WEEK, 2WEEKS, 3WEEKS, 1MONTH, 2MONTHS, 3MONTHS
AUDIO REC	ON, ● OFF
REPEAT REC	OFF, ● ALL, ALARM LOCK

DETAIL REC (Page 30)	
Items	Settings
NORMAL AUDIO REC	ON, ● OFF
ALARM AUDIO REC	ON, ● OFF
EMARGENCY REC	● OFF, 30SEC, 1MIN, 5MIN, 10MIN, 20MIN, CONTINUE, MANUAL
PASSCODE ERROR REC	OFF, 10SEC, 20SEC, ● 30SEC
TIMER/MODE (REC PATTERN)	● PROGRAM TIMER, REC PATTERN 1 to 9
WATER MARK	ON, ● OFF

NORMAL REC (Page 31)	
Items	Settings
F.RATE(ips) (NORM REC)	–, 0.08, 0.2, 0.4, 0.8, 1.7, 2.5, 5, ● 8.3, 12.5, 25(ips)
QTY (NORM REC)	H(High), ● N(Normal), B(Basic), L(Long)
F.RATE(ips) (ALARM REC)	0.8, 1.7, 2.5, 5, 8.3, 12.5, 25(ips), ● ---, AUTO
QTY (ALARM REC)	● H(High), N(Normal), B(Basic), L(Long)
M.DET	OFF, ● NORM, USER, DOOR H, DOOR L, HALL H, HALL L, CHECK H, CHECK L, ATM H, ATM L, LOBBY H, LOBBY L, GATE H, GATE L, PARK H, PARK L, DARK H, DARK L, ELEVATR, COUNTER

ALARM TERMINAL (Page 33)	
Items	Settings
ALARM PORT 1 to 9	DISABLE (–), ● ENABLE (1) to (9)
EMERGENCY REC	DISABLE (–), ● ENABLE (1) to (9)

Menu List (continued)

[●] are factory settings.

ALARM REC (Page 34)		
Items		Settings
CAM NO		● CAMERA1, CAMERA2, CAMERA3, CAMERA4, CAMERA5, CAMERA6, CAMERA7, CAMERA8, CAMERA9
DURATION		10SEC, 15SEC, 30SEC, 1MIN, ● 3MIN, 5MIN, MANUAL
PREALARM REC		● OFF, 10SEC, 30SEC, 60SEC
MOTION DETECT SET		
	DYNAMIC SENSITIVITY LEVEL	1 to 10 (Factory setting: 8)
	STOP LEVEL	1 to 3 (Factory setting: 2)
	TARGET AREA LEVEL	1 to 10 (Factory setting: 2)

WEEKLY TIMER (Page 38)	
Items	Settings
START DAY	SUN, MON, TUE, WED, THU, FRI, SAT, DAY
START TIME	00:00 to 23:59
END DAY	SUN, MON, TUE, WED, THU, FRI, SAT
END TIME	00:00 to 23:59
MODE	STANDARD, REC.P 1 to 9
EXEC	OFF, ON, WEEK
REC DAY SET	SUN, MON, TUE, WED, THU, FRI, SAT

DATE TIMER (Page 39)	
Items	Settings
START TIME	00:00 to 23:59
END TIME	00:00 to 23:59
MODE	STANDARD, REC.P 1 to 9
EXEC	OFF, ON
DATE SET	1/1 to 12/31

MONITOR (Page 24)	
Items	Settings
BORDER COLOR	BLACK, DARKGRAY, GRAY, ● LIGHTGRAY
ALARM REC DISP	● OFF, FIX, SEQUENCE
VGA OUT	● ENABLE, DISABLE

Explanations

Menu List (continued)

[●] are factory settings.

SEQUENCIAL (Page 24)	
Items	Settings
CAMERA 1 to CAMERA 9	OFF, ● 1SEC, 2SEC, 3SEC, 5SEC, 10SEC
SPLIT PICTURE	● 1SEC, 2SEC, 3SEC, 5SEC, 10SEC

SPLIT PICTURE (Page 25)		
Items		Settings
4DIVISION		
	4DIVISION - A	● ENABLE, DISABLE
	4DIVISION - B	● ENABLE, DISABLE
	4DIVISION - C	● ENABLE, DISABLE

COVERT CHANNEL (Page 27)	
Items	Settings
CAMERA 1 to CAMERA 9	ENABLE, ● DISABLE
SELECT COVERT	OFF, SPOT OUT, MONITOR OUT, ● SPOT + MONITOR OUT
PLAY PERMISSION	ON, ● OFF

COVERT CHANNEL (WEB) (Page 27)	
Items	Settings
CAMERA 1 to CAMERA 9	ENABLE, ● DISABLE
WEB PLAY PERMISSION	ON, ● OFF

CAMERA TITLE (Page 47)	
Items	Settings
CAMERA 1 to CAMERA 9	(20 one-byte characters) Factory setting: CAM 01 to CAM 09

AUDIO OUT (Page 45)	
Items	Settings
AUDIO 1 LINK	● (APPOINTMENT OFF), CAMERA 1 to 9
AUDIO 2 LINK	● (APPOINTMENT OFF), CAMERA 1 to 9
OTHER AUDIO	OFF, ● AUDIO1, AUDIO2

Menu List (continued)

[●] are factory settings.

ONSCREEN MODE (Page 25)	
Items	Settings
DATE / TIME	● ON, OFF
ALARM COUNT	● ON, OFF
ALARM DETECT	● ON, OFF
DISK CAPACITY	● ON, OFF
PLAYBACK SET	● ON, OFF
CAMERA TITLE	● ON, OFF
WARNING	● ON, OFF
REC TO STOP MESSAGE	ON, ● OFF

OPERATION (Page 32, 48)		
Items		Settings
RECOVERY REC	**(Page 32)**	OFF, ● PRIOR STATE, COMPULSION REC
REC INDICATOR	**(Page 32)**	● ON, OFF
REPEAT REC	**(Page 32)**	OFF, ALARM LOCK, ● ALL
OPE LOCK RELEASE	**(Page 48)**	● BASIC, PASSCODE
OPERATION LOCK	**(Page 48)**	● OFF, REC STOP, ALL, USER
REC STOP		ON, ● OFF
PLAY		ON, ● OFF
CHANGE SETTING		ON, ● OFF
CHANGE MONITOR		ON, ● OFF
OPERATION		ON, ● OFF
DVD		ON, ● OFF

BUZZER (Page 49)	
Items	Settings
ALARM	ON, ● OFF
HDD FULL	ON, ● OFF
WARNING	● OFF, USER, ALL
VIDEO LOSS	ON, ● OFF
HDD ERROR	ON, ● OFF
FAN MOTOR ERROR	ON, ● OFF
PASSCODE ERROR	ON, ● OFF
BLACKOUT ERROR	ON, ● OFF
REC STOP	ON, ● OFF
BUTTON	● ON, OFF

Menu List (continued)

[●] are factory settings.

REAR TERMINAL (Page 49)		
Items		Settings
EXT REC		● OFF, TRIGGER, MANUAL
REC OUT		● OFF, ALL, ALARM REC, STOP REC
WARNING OUT		● OFF, USER, ALL
	VIDEO LOSS	ON, ● OFF
	HDD ERROR	ON, ● OFF
	FAN MOTOR ERROR	ON, ● OFF
	PASSCODE ERROR	ON, ● OFF
	BLACKOUT ERROR	ON, ● OFF

NETWORK (Page 66)	
Items	Settings
HOST NAME	● vr509
METHOD	OFF, ● STATIC IP, DHCP
IP ADDRESS	● 192.168.0.10
NET MASK	● 255.255.255.0
DEFAULT GATEWAY	● 192.168.0.254
DNS SERVER	● 0.0.0.0
MAC ADDRESS	Cannot set

MAINTENANCE (Page 50, 53)		
Items		Settings
AUTO SCAN DISK	**(Page 50)**	ON, ● OFF
MANUAL SCAN DISK	**(Page 50)**	EXEC
ALARM LIST CLEAR	**(Page 53)**	EXEC

DEFRAG DATABASE (Page 51)		
Items		Settings
TIMER CONTROL		ON, ● OFF
DATE AND HOUR	**Date**	1 to 31 (specified date), SUN, MON, TUE, WED, THU, FRI, SAT (specified day of the week)
	Hour	0 to 23
MANUAL		EXEC

FORMAT (Page 51)	
Items	Settings
FORMAT	EXEC

Menu List (continued)

[●] are factory settings.

MIRRORING (Page 52)		
Items		Settings
MIRRORING		
	(When in MIRRORING OFF)	YES
	(When in MIRRORING ON)	NO

PASSCODE (Page 54)	
Items	Settings
PASSCODE	● NONE, DONE (Factory setting: 0000)
MIS-INPUT OF PASSCODE	OFF, ONCE, TWICE, ● THREE TIME

MAINTENANCE / LOG (Page 54, 55)		
Items		Settings
REBOOT	**(Page 55)**	EXEC
OPERATION LOG	**(Page 54)**	EXEC
RECORD LOG	**(Page 54)**	EXEC

CLOCK SET (Page 19)	
Items	Settings
Y	2005 to 2038
M	1 to 12
D	1 to 31
H	0 to 23
M	0 to 59
S	0 to 59

Troubleshooting

Problems Related to Error Code and Onscreen Display

Onscreen Display	Cause and Recovery	Refer to Page
"E-01 DETECTED." *1, *2	• System restarted due to error in the functioning of the hard disk. • Continues operation with the intact hard disk. • The data in the disconnected hard disk will not be recovered if the manual scan disk is executed. → Switch the power supply off and then on again, and try the formatting or defrag functions once again. → Consult your nearest JVC dealer.	–
"E-02 NO IDE 1 HDD" **"E-02 NO HDD"** **"E-02 IDE 1 FORMAT NG"** **"E-02 MIRRORING NG"**	• Abnormality with hard disk operations (cannot be started up.) → Switch the power supply off and then on again, and try the formatting or defrag functions once again. → Consult your nearest JVC dealer.	–
"NO VIDEO IN INPUT (E-03)"** *2	• No video input signals. → Stop operations and check the connection. → Double-check settings in the "Instruction Set-1" Menu. * Recording may fail if it is continued after the error message is displayed. Set the "CAMERA" setting to "DISCONNECT" in the "Instruction Set-1" Menu or eliminate the cause of the error immediately.	P15 P20
"E-05 DETECTED." *1, *2	• Error in the fan motor. → Consult your nearest JVC dealer.	–
"E-06 DETECTED." *1, *2	• EEPROM error. → If this error occurs due to alteration of a menu setting, turn the equipment off/ on and check the setting. → If this error keeps occurring due to alteration of a menu setting or during operation, consult your nearest JVC dealer.	–
"E-07 DETECTED." *1, *2	• Codec 1 error. (Mostly used for recording and VR-509E playback) * HDD/DVD playback, and recording onto the HDD will not be carried out normally if this is displayed. → Consult your nearest JVC dealer.	–
"E-08 DETECTED." *1, *2	• Codec 2 error. (Mostly used for transmission and DVD trans-coding) * USB still image capturing, DVD export processing and live/playback transmission to the network will not be carried out normally if this is displayed. → Consult your nearest JVC dealer.	–
"E-09 DETECTED." *1, *2	• Error on one of the built-in hard disk drives. (This error is detected only when in the Mirroring Setting mode.) → Consult your nearest JVC dealer.	–
"E-10 DETECTED."	• Abnormality with the DVD drive. → Consult your nearest JVC dealer.	–
"POWER OUTAGE LOG IS UPDATED." *2	• Displayed when a power outage occurs. → This is not an error. Press the [CANCEL] button to clear the message.	P54

*1 to *3: See the next page

Troubleshooting (continued)

Problems Related to Error Code and Onscreen Display (continued)

Onscreen Display	Cause and Recovery	Refer to Page
"HARD-DISK CAPACITY IS VERY LITTLE"	• Recordable space on the hard disk is running out. → When hard disk space is about to run out, make changes accordingly such as formatting the hard disk or changing the setting to the Repeat Record mode. * All event record data will be deleted when formatting is executed.	P51 P32
"NO HARD-DISK REMAINING CAPACITY" *1, *3	• No space available on the hard disk for recording. → Format the hard disk to create recording space or set Repeat REC to values other than "OFF". * All event record data will be deleted when formatting is executed.	P51 P32
"MAINTENANCE PROCEEDING"	• Self-diagnosis of VR-509 in progress. → This is not an error. * When maintenance is in progress there are cases where the audio sound may break up or the images be displayed after a delay during playback. In this event, wait until the [MAINTENANCE PROCEEDING] message has disappeared before restarting playback.	–
"NTP SERVER CONNECTION ERROR"	• The NTP server registration has been enabled, but a connection to the NTP server failed. → Repeat the NTP server registration procedure, or set the NTP server function to DISENABLE.	P78
"SYSTEM REBOOTED TO CHECK HARD DISK"	• The system has been rebooted due to temporary unstable operations in the HDD (power outage to additional hard disk units, etc.) Displayed during HDD substitute sector processing. → Operations may be continued without problem if the system returns to normal after rebooting. Consult your nearest JVC Dealer if this problem occurs frequently.	P55

*1: The buzzer will sound when an error occurs.

*2: A signal will be output to the [WARNING OUT] terminal when an error occurs.

*3: When the hard disk is full, priority is given to this display even when the command to start recording is received by pressing the [REC/STOP] button or alarm input during playback. (Blinks for 5 seconds)

Explanations

Troubleshooting (continued)

Problems with the DVD

If the following messages are displayed during DVD exporting or DVD playback, press the [CANCEL] button to delete the message, and then check the cause of the problem.

Onscreen Display	Cause and Recovery	Refer to Page
"DVD export data retrieval was discontinued (D-01)" **"DVD export data retrieval was discontinued (D-02)"** **"DVD export data retrieval was discontinued (D-03)"**	• No relevant retrieval data. • The result of the search exceeds the disk capacity. • Search processing error.	P57
"DVD export data conversion was discontinued (D-01)" **"DVD export data conversion was discontinued (D-02)"** **"DVD export data conversion was discontinued (D-03)"**	• No relevant conversion data. • The result of the conversion exceeds the disk capacity. • Conversion processing error.	P57
"DVD export data disk making was discontinued (D-01)" **"DVD export data disk making was discontinued (D-02)"** **"DVD export data disk making was discontinued (D-03)"**	• Disk creation failed. → There is a chance that an error occurred on the relevant disk. • The inserted disk is not supported. • Disk deletion failed. → There is a chance that an error occurred on the relevant disk.	P57
"There is no file can be reproduced in DVD (D-01)" **"There is no file can be reproduced in DVD (D-02)"** **"There is no file can be reproduced in DVD (D-03)"**	• The directory for list creation does not exist. • The file for list creation does not exist. • List creation failed.	P60

Problems with Flash Memories

Onscreen Display	Cause and Recovery	Refer to Page
"STILL PICTURE FAILED" **"DOWN DATA FAILED"**	• The flash memory was disconnected during writing operations. • The flash memory is set for read-only operations. → Disable the read-only function. • The flash memory does not have sufficient capacity. → Increase the available capacity, or connect a new flash memory. • Sufficient capacity is available, but writing is not possible. (There are limits to the number of files a USB flash memory can store in the root directory.) → Either store the new file in a sub-directory, or delete some of the other files.	P62 P63
"UP DATA FAILED"	• The flash memory was disconnected during reading operations. • No menu setting data exists on the flash memory. • The VR-509 version does not match up with the menu setting data version. • The menu setting data file is damaged.	P63

Troubleshooting (continued)

Other Problems

Onscreen Display	Cause and Recovery	Refer to Page
Power cannot be turned on.	→ Check to ascertain that the power cable has been plugged in correctly.	–
[REC] and [PLAY] buttons do not work.	→ Check to ascertain if the OPERATION LOCK is activated. → Check to ascertain if the TIMER STANDBY mode is activated.	P48 P38, P39
Playback image is not displayed on the monitor.	→ Check the monitor connection. → Select a camera that has a recorded image.	P15 P41
Unable to start program recording using the Program Timer	→ Check the DATE/TIME settings. → Check to ascertain if the TIMER STANDBY mode is activated. → Check the TIMER PROGRAM.	P19 P38 P39
Menu screen is not displayed.	→ Check to ascertain if the OPERATION LOCK is activated. → Check to ascertain if the TIMER STANDBY mode is activated.	P48 P38
No onscreen display of date/ time and title.	→ Check to ascertain that the settings on the “ONSCREEN DISPLAY SETTINGS” screen are set to “ON”.	P25
Date/Time is not recorded.	→ Check the DATE/TIME settings.	P19
[TIMER] indicator blinks.	• The PROGRAM TIMER has not been reserved, or there is no recording reservation that can be executed. → Check the PROGRAM TIMER. • There is no space left on the hard disk. → Format the hard disk to create recording space or set Repeat REC to values other than “OFF”.	 P38, P39 P51, P32
Unable to play back audio sound.	→ Make recordings with the “AUDIO REC” in the “DETAIL REC” menu set to “ON”. * Sound audio cannot be recorded when the “F.RATE” setting on the “OPERATION SET” menu has been specified as “0.08” or “0.2”.	P30, P31
Unable to execute Skip Jump or Direct Jump	→ Check the DATE/TIME setting. → Check the SKIP setting.	P19 P44
Cannot mount rack fittings	→ Rack mount fittings are optional. Please consult the nearest JVC dealer for details.	–

Explanations

Troubleshooting (Web Browser)

Problems that Trigger Error Messages

Error Message	Cause and Recovery
[Normal Recording in Progress: (5XX2)]	Perform operations via the Web browser after stopping or ending all operations on the VR-509.
[Timer Recording in Progress: (5XX3)]	
[Alarm Recording in Progress: (5XX5)]	
[Emergency Recording: (5XX6)]	
[Onscreen/Menu Control: (5XX7)]	
[Timer Mode Standby: (5XX8)]	
[Warning: Disable JavaScript in your web browser]	JavaScript is prohibited on the Web browser currently in use. → Alter the security level in the “Internet Options” Menu of the Web browser.
[Authorization Required]	User Name and password verification during access to the VR-509 failed. → Access the VR-509 again and enter the correct user name and password.
[Timer Mode Standby cannot be activated]	There is no timer program in the Weekly Timer or Date Timer to be executed. → Double-check settings in the Weekly Timer and Date Timer.
[*: (4xxx)]** **[***: (xxxx)]**	Processing of setting request from the Web browser failed. → Select the menu item using the Menu button and resend the request, or refresh the URL and perform operations via the Web browser again.
[SYSTEM ERROR (E_xx): *]**	System error has been detected on the VR-509. * The live screen and playback screen cannot be viewed in this event. Also, the VR-509E settings cannot be amended. → Check the operational status of the VR-509.

Troubleshooting (Web Browser) (continued)

Problems that Trigger Error Messages

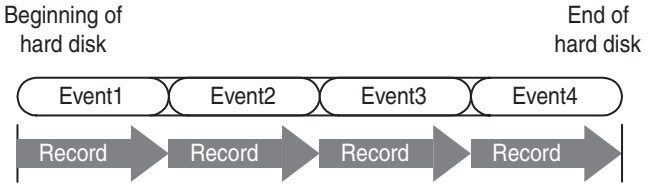
Error Message	Cause and Recovery
Unable to gain access by entering the specified URL at the browser.	→ Disable the use of proxy servers in the “Internet Options” Menu of the Web browser.
User name and password are requested when “CONFIGURATION” and “TIMER RECORDING” are selected.	→ Login by entering a registered user name and password with a higher level of access rights.
Password for Administrator rights forgotten and menu screen for Web browser operation cannot be displayed.	Clients should manage important information such as passwords. → Deactivation of passwords that involve security issues need to be repaired. Consult your nearest JVC dealer.
Daily mode in the Weekly Timer cannot be selected.	→ In the Program List for Weekly Timer, click the [UP] button of the program for which the starting day is set as [DAY]. Set this to the Daily mode.
New programs cannot be added to the Weekly Timer/Date Timer	To add new programs, do so using the [UP] and [DEL] buttons in the Program List.

Explanations

Web Browser Glossary

Domain name	The network name to which the network-connected PC belongs.
Host Name	Name of PC (or VR-509) on the network. The name of the PC connected to the network is managed by a database called DNS (Domain Name System). DNS links the IP address assigned to each PC with the domain names, and enables a user to specify a PC to access.
IP Address	An identification number assigned to each PC connected to the network. This is used for communication between network devices. There are 2 types of IP address, namely Global IP Address and Local IP Address (Private IP Address). IP Address ◀⟶ Host Name Domain Name 192.168.0.10 Convert .vr509 jvc-victor.co.jp IP addresses assigned by the PC are converted by the DNS server into host names and domain names.
Global IP Address	Just as separate IP addresses are required on a network, this is also required for all PCs that are connected to the Internet throughout the world. These IP addresses are known as Global IP Addresses, and are usually assigned by the Internet service provider.
Local IP Address	Separate IP addresses can be used freely within networks that are not connected to the Internet (eg. within a family or company). These are known as Local IP Addresses.
DHCP (Dynamic Host Control Protocol)	This is a method that automatically assigns IP addresses on the network. The DHCP server will automatically assign an IP address to a PC when it is connected to the network.
Subnet mask	A mechanism that manages a network by segmenting it into multiple virtual networks (subnets). Subnet mask is a 32-bit value that is used to define how many bits are to be used within the IP address for identifying the subnet.
LAN (Local Area Network)	A network that is built within a comparatively confined area such as within a building, company or office.
Default Gateway	Hardware and software that are used mutually for the translation of different protocols during communication of a PC with one that does not belong to the same network. In Windows, setting of a default gateway is required when setting the IP address.
Protocol	A set of rules used for communication of PCs or devices via the network.
TCP/IP	Abbreviation for Transmission Control Protocol/Internet Protocol. This is one of the protocols used by the network.
Login	Refers to the commencement of use upon connection of a PC terminal to an online database or server.
Peer-to-Peer	A small-scale network that connects PCs on a peer level (1-to-1).
NTP	A system that automatically synchronizes the system clocks of equipment connected to the network. The NTP Server function is built into WindowsXP, Windows 2000 as a standard feature. (Page 107) The NTP server can also be accessed and used via the Internet.

Normal Recording

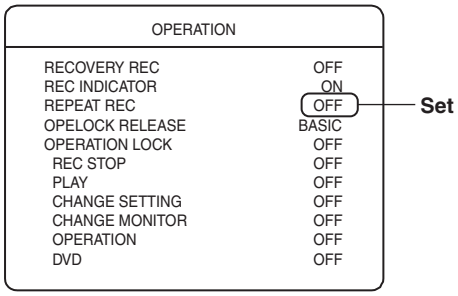


- Recording is executed from the start till the end of the hard disk during normal recording.
- A recording operation from the time it starts till it ends is referred to as an “Event”.
- Recording will stop when it reaches the end of the hard disk, and further recording will not be possible.
- When playback of events is executed as in the above diagram, the playback (audio and video) image will freeze for an instant at the boundaries of events.

Explanations

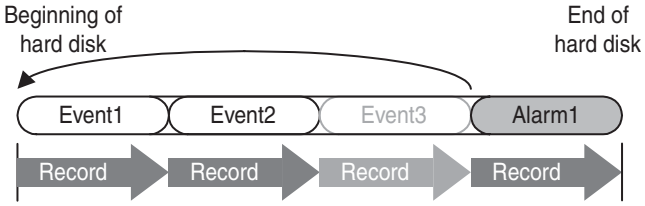
Repeat Recording

When recording reaches the end of the hard disk and there is no space left for recording, it returns to the start of the hard disk to overwrite old data. Such an operation is known as Repeat Record. Display the “OPERATION” in MENU Screen Operations to execute Repeat Rec mode. (Page 32)

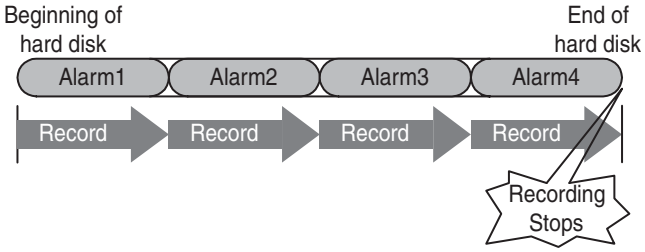


■ **When “ALARM LOCK” is selected**

- Executes repeat recording in the normal recording area (free space) excluding alarm recording data.

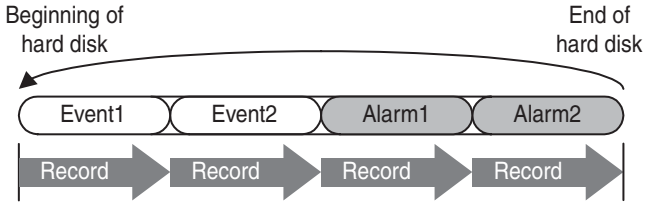


- Stops when there are too many alarm records and no space is left for the normal recording area.



■ **When “ALL” is selected**

- Execute repeat recording regardless of alarm recording/ normal recording area.
- Recording will continue lastingly until stopping the recording.

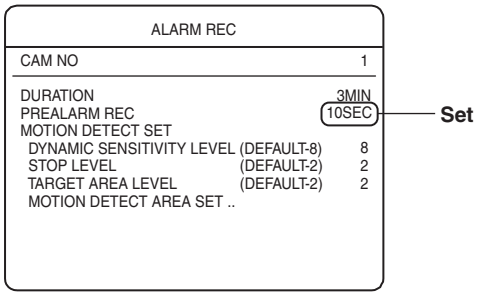


Notes on Repeat Recording

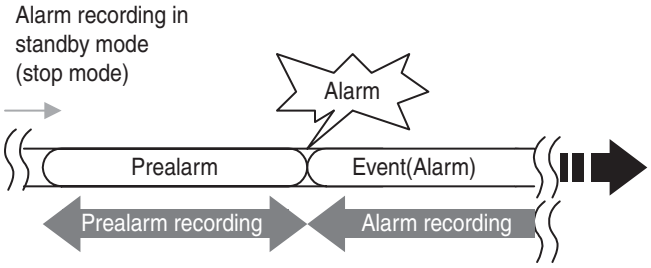
- The illustrations above on recording models are merely image diagrams and is different from the actual method of recording.
- Repeat Record overwrites from the oldest event. Data that has been overwritten will be totally deleted.
- There are cases where the deletion time for each channel does not match up.

Prealarm Recording

Prealarm Recording is a feature that works hand-in-hand with Alarm Recording that starts recording automatically by tracing back to the time prior to the input of alarm signals.
Display the “OPERATION” in MENU Screen Operations to execute PREALARM REC or PREALARM TIME. (Page 34)



- When alarm signals are input, the alarm recording starts simultaneously.
  - When the alarm recording starts, the prealarm recording for the set time is performed automatically.



Prealarm Recording Preset Values and Actual Recording Duration

Settings	Actual Recording Duration
10 sec	10 to 20 seconds
30 sec	30 to 40 seconds
60 sec	60 to 70 seconds

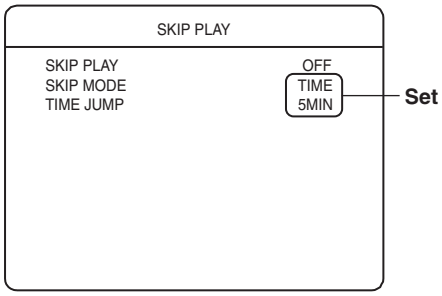
Notes On Prealarm Rec

- When alarm recordings that have pre-alarms have been selected, the display will jump to the starting position of the pre-alarm recordings during the alarm search.
- There are cases where pre-alarm recording cannot be performed at the specified time if alarm signals are input immediately after pre-alarm recording has been started.
- There are cases where the alarm’s recording time is longer than actually specified when the time set for this is prior to the value set for pre-alarm recording.
- The alarm recording parameters for pre-alarm recording are only activated when recording is suspended.

Explanations

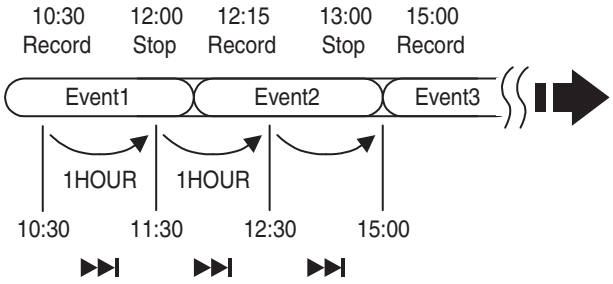
Skip jump

There are 3 types of Skip Jump, namely “TIME”, “ALARM” and “EVENT”, which can be specified in the search menu. Display the “SKIP MODE” in SKIP PLAY to execute SKIP button setting. (Page 44)



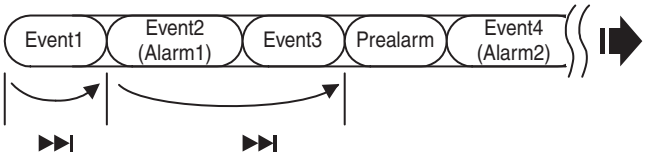
■ **When “TIME” is selected**

- Selecting “1HOUR” for Time Jump Setting enables jumps in 1 hour intervals every time the [SKIP] button is pressed. Jumps to the closest position from the specified time onwards if the time to jump to is not found.



■ **When “ALARM” is selected**

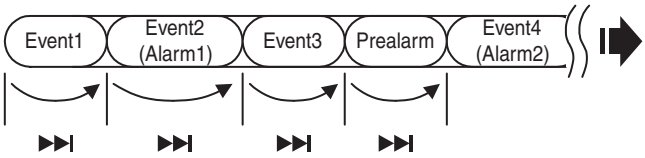
- Pressing [SKIP] each time enables a jump to the start position of alarm or sensor recording.



- The display will jump to the starting position of the pre-alarm recording when pre-alarm recordings exist.

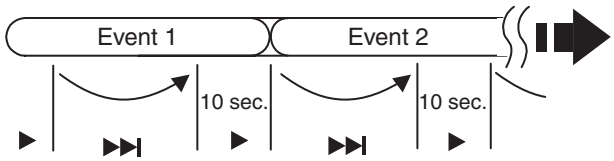
■ **When “EVENT” is selected**

- Pressing [SKIP] each time enables a jump to the start position of recording (start of an event).



SKIP PLAY

If the [SKIP] button is pressed during playback with the [SKIP PLAY] setting on the [SKIP PLAY] menu temporarily set to “10 SEC”, the playback and skip operations will be repeated at intervals of ten seconds until no more relevant recorded images can be found.



Using the NTP Server Function

■ The NTP Server function is enabled in accordance with the following procedure with Windows XP.

1. Click on [START] and then click on [Run...]

Enter the “regedit” command and then click [OK].

2. Set the following registry value to [5].

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\AnnounceFlags

3. Set the following registry value to [1].

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpServer\Enabled

4. End “regedit” once the settings have been amended.

5. Enter the following command in the command prompt, press the [Enter] key and then reboot the Windows Time service.

net stop w32time && net start w32time

Caution: For Windows XP users

If the firewall is set to [ENABLE] with Windows XP, it is also necessary to set the UDP port : 123 parameter that is used by NTP to [ENABLE]. This parameter is set in accordance with the following procedure.

Windows XP SP1 users (not necessary if the firewall is set at [DISABLE].)

1. Open the [Local Area Connection Property], and then open the [Advanced Setting] tab.
2. Press the [Set] button for the [Internet Connection Firewall], and then open the [Advanced Settings].
3. Press the [Add (D)] at the bottom of the [Advanced Settings] to display the [Service Settings] screen.
4. Set the parameters to allow NTP access.
5. Service Description: NTP
   Name or Address: IP or name of the PC
   External, Internal Port Numbers: 123 UDP

   Set the parameters as shown above.

Windows XP SP2 users (the firewall is set at [ENABLE] in the initial settings.)

1. Open the [Local Area Connection Property], and then open the [Advanced Setting] tab.
2. Press the [Set] button for the [Windows Firewall], and then open the [Exceptions] tab.
3. Press the [Add Port (O)] at the bottom of the screen to display the [Add Port] screen.
4. Set the parameters to allow NTP access.
5. Name: (Example) NTP
   Port Number: 123 UDP

   Set the parameters as shown above.

■ The NTP Server function is enabled in accordance with the following procedure with Windows 2000.

1. Start up the command prompt (DOS screen) and enter the following command.

net time /setsntp: Server IP address

Example: net time /setsntp: 192.168.0.1

2. Open the [Control Panel] → [Administration Tools] → [Services].

3. Double-click on [Windows Time], set [Start-up Type] to [Automatic], and then click on the [Start] button.

4. Set the following registry value to [1] (the default is [0].)

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\parameters\LocalNTP

> It is very risky to amend the registry. It is recommended that a back-up of the registry is taken prior to commencing the editing for safety purposes.
> JCV cannot be held responsible for any problems that arise from this.

5. Reboot Windows Time Service (= Stop → Start)

- This is performed by opening the Windows Time Service property from the [Service] screen on [Administration Tools].

Explanations

Activating ActiveX Control and Plug-ins

Follow the procedures explained below to activate ActiveX Control and plug-ins with Internet Explorer if they are not already activated.

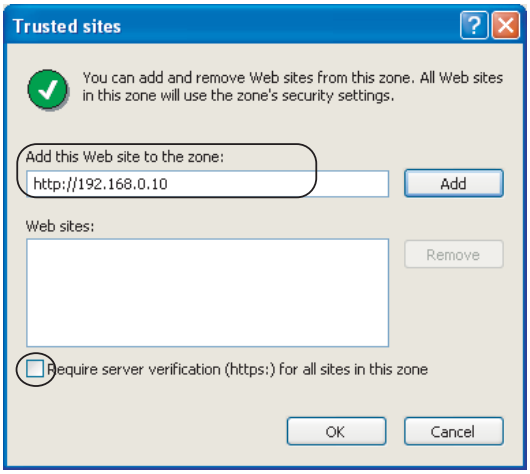
■ **Starting up Internet Explorer**

Select [Tools] → [Internet Options] → [Security], and then click on [Trusted Sites].

This will enable the [Trusted Sites [Site...]] window to be opened. Click on this to open the [Trusted Sites] window.

Enter the IP address that is set in the VR-509 [Setting up a Network] field in the [Add this Website to the zone:] field, and then press the [Add] button. (Note that the http://192.168.0.10 IP address listed in the following illustration is only an example.)

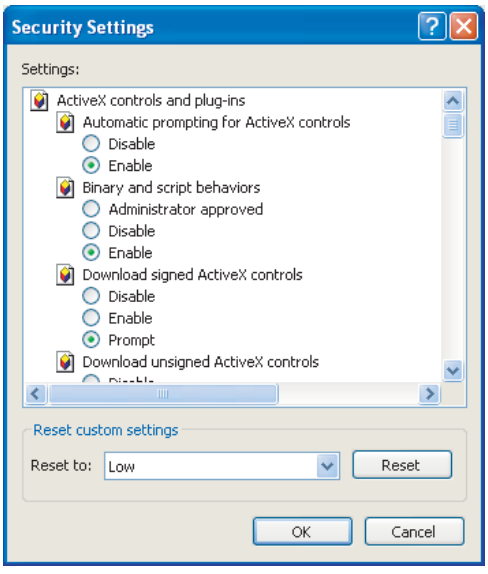
Remove the tick from the [Require server verification (https:) for all sites in this zone] check box.



■ **Select [Tools] → [Internet Options] → [Security], and then click on [Trusted Sites].**

Select the [Custom Level] button and open the [Security Settings] window.

Set all of the [ActiveX Controls and Plug-ins] fields to [Enable] on the open window.



Notes Related to Summer Time

The VR-509 makes use of Time Zone to perform automatic switching for Summer Time and Winter Time.

* The starting/ending time of Summer Time may differ from the actual time in your local area.

1. Changing the Time Zone

After changing the Time Zone during operations, make sure to format all the hard disks. If the hard disk is not formatted after changing the Time Zone, the following problems will arise.

- During playback on the main unit or a web browser, the time display will be different from the actual recorded time.
- The Alarm List will be different from the actual recorded time.
- The list for the DVD-R/RW copy will be different from the actual recorded time.

2. Changing the time

The Summer Time time change will be performed automatically according to the setting value of the selected area in “TIME ZONE” setting. On the day when switching from Summer time to Winter time, there is a duplicated period where the same time will be reached twice. During this period, do not amend the date/time setting (Menu/RS-232C/Front Display) and clock reset (rear terminal/Front Panel).

3. Searching

For the Alarm List of the duplicated period of Summer/Winter Time, the data will be displayed in the order the actual recording time starts.
On the day when switching from Winter time to Summer time, there are certain times that do not exist. Do not perform “SEARCH DATE” for these times.
When searching for images recorded during the duplicated period on the day when switching from Summer time to Winter time, two images with the same time will exist. The operation of the various searches is shown below.

1) “SEARCH DATE” in the “EVENT SEARCH” menu on the main unit
   It will search for Winter Time. When searching for the “Summer Time” of the duplicated period, search using the jog/shuttle dial or [SKIP] buttons after performing “SEARCH DATE”.
2) “ALARM LIST SEARCH” in the “EVENT SEARCH” menu on the main unit
   It will search for Winter Time. When searching for the “Summer Time” of the duplicated period, search using the jog dial or [SKIP] buttons.
3) Search using the web browser
   It will search for Winter Time. When searching for the “Summer Time” of the duplicated period, specify the starting time at an earlier period before the duplicated period to search.

4. Playback

1) Playback using the main unit
   When playing back recordings that straddle the Summer and Winter Time, the playback time (date/time displayed on the OSD) of this portion may differ from the actual time.
2) Playback using the web browser
   When playing back recordings that straddle Summer and Winter Time, the ending time and the clock counter displayed may differ from the actual time.

5. Timer Programming

When the time changes from Summer to Winter or vice versa during TIMER REC, the recording will be divided and recorded as a different event at the changing point. In addition, a few seconds will not be recorded at the changing point.
On the day when switching from Summer time to Winter time, there is a duplicated period where the same time will be reached twice.
Do not set the starting/ending time within the duplicated period on the day when switching from summer time to winter time.

6. DVD-R/RW COPY

1) Selecting the data list of the DVD-R/RW

- The specified starting time search of the Summer/Winter duplicated period will be searched as Winter Time.
- For the data list of the DVD-R/RW of Summer/Winter duplicated period, the data will be displayed in the order of the actual recording start time.
- On the day when switching from Winter Time to Summer Time, there are certain times that do not exist. Do not perform specified starting time search for these times.

2) Cutting of the DVD-R/RW record

- The starting/ending time of the data crossing the Summer and Winter cannot be changed. When copying, the original starting/ending time will be copied.

7. PC environment settings

When searching or playing back from the web browser, set the PC TIME ZONE setting to the same as the VR-509 “TIME ZONE” setting.

8. The alarm list for mail notification

- For the message content of the mail notification, the local time will be recorded.
- When duplicated times are recorded due to Summer Time, to differentiate the message recorded in Summer Time or Winter Time, check the time sent stated on the mail header.

Explanations

Recording Duration

Actual recording duration varies according to the input image as well as hard disk conditions. The table below is an example of detailed images (eg. in a convenience store) that illustrates the recording duration based on different modes of recording quality. Refer to the following table when recording detailed images.

Requirements: Upon setup of standard HDD (320 GB) (1/2)

VR-509記録時間 Repeat Rec off / Audio off

● 1CH記録の場合 [hour]

Total Framerate	SMOOTH High	SMOOTH Normal	SMOOTH Basic	SMOOTH Long	SMOOTH Long /High	HIGH-QUALITY High	HIGH-QUALITY Normal	HIGH-QUALITY Basic	HIGH-QUALITY Long	HIGH-QUALITY Long /High
30x1 ips	180	262	380	551	3.1	99	168	286	487	4.9
15x1 ips	292	424	615	893	3.1	160	273	464	789	4.9
10x1 ips	439	637	923	1339	3.1	240	409	696	1183	4.9
6x1 ips	615	892	1293	1875	3.0	337	573	974	1657	4.9
3x1 ips	683	991	1437	2084	3.1	374	637	1083	1841	4.9
2x1 ips	1025	1486	2155	3126	3.0	562	955	1624	2761	4.9
1x1 ips	2050	2973	4311	6252	3.0	1124	1911	3249	5623	4.9
0.5x1 ips	4101	5947	8623	10504	3.0	2248	3822	6498	11047	4.9
0.2x1 ips	10254	14868	21560	31262	3.0	5621	9556	16246	27619	4.9
0.1x1 ips	20508	29737	43120	62524	3.0	11243	19113	32493	55239	4.9

24~168 1日～1週間 / 169~720 1週間～1ヶ月 / 721~2160 1ヶ月～3ヶ月 / 2161~ 3ヶ月以上

● 4CH記録の場合 [hour]

Total Framerate	SMOOTH High	SMOOTH Normal	SMOOTH Basic	SMOOTH Long	SMOOTH Long /High	HIGH-QUALITY High	HIGH-QUALITY Normal	HIGH-QUALITY Basic	HIGH-QUALITY Long	HIGH-QUALITY Long /High
30x1 ips	45	65	95	137	3.0					
15x1 ips	73	106	153	223	3.1	40	68	116	197	4.9
10x1 ips	109	159	230	334	3.1	60	102	174	295	4.9
6x1 ips	153	223	323	468	3.1	84	143	243	414	4.9
3x1 ips	170	247	359	521	3.1	93	159	270	460	4.9
2x1 ips	256	371	538	781	3.1	140	238	406	690	4.9
1x1 ips	512	743	1077	1563	3.1	281	477	812	1380	4.9
0.5x1 ips	1025	1486	2155	3126	3.0	562	955	1624	2761	4.9
0.2x1 ips	2563	3717	5389	7815	3.0	1405	2389	4061	6904	4.9
0.1x1 ips	5127	7434	10780	15631	3.0	2810	4778	8123	13809	4.9

24~168 1日～1週間 / 169~720 1週間～1ヶ月 / 721~2160 1ヶ月～3ヶ月 / 2161~ 3ヶ月以上

● 6CH記録の場合 [hour]

Total Framerate	SMOOTH High	SMOOTH Normal	SMOOTH Basic	SMOOTH Long	SMOOTH Long /High	HIGH-QUALITY High	HIGH-QUALITY Normal	HIGH-QUALITY Basic	HIGH-QUALITY Long	HIGH-QUALITY Long /High
30x1 ips										
15x1 ips	48	70	102	148	3.1					
10x1 ips	73	106	153	223	3.1	40	68	116	197	4.9
6x1 ips	102	148	215	312	3.1	56	95	162	276	4.9
3x1 ips	113	165	239	347	3.1	62	106	180	306	4.9
2x1 ips	170	247	359	521	3.1	93	159	270	460	4.9
1x1 ips	341	495	718	1042	3.1	187	318	541	920	4.9
0.5x1 ips	683	991	1437	2084	3.1	374	637	1083	1841	4.9
0.2x1 ips	1709	2478	3593	5210	3.0	936	1592	2707	4603	4.9
0.1x1 ips	3418	4956	7186	10420	3.0	1873	3185	5415	9206	4.9

24~168 1日～1週間 / 169~720 1週間～1ヶ月 / 721~2160 1ヶ月～3ヶ月 / 2161~ 3ヶ月以上

● 9CH記録の場合 [hour]

Total Framerate	SMOOTH High	SMOOTH Normal	SMOOTH Basic	SMOOTH Long	SMOOTH Long /High	HIGH-QUALITY High	HIGH-QUALITY Normal	HIGH-QUALITY Basic	HIGH-QUALITY Long	HIGH-QUALITY Long /High
30x1 ips										
15x1 ips										
10x1 ips	48	70	102	148	3.1					
6x1 ips	68	99	143	208	3.1	37	63	108	184	5.0
3x1 ips	75	110	159	231	3.1	41	70	120	204	5.0
2x1 ips	113	165	239	347	3.1	62	106	180	306	4.9
1x1 ips	227	330	479	694	3.1	124	212	361	613	4.9
0.5x1 ips	455	660	958	1389	3.1	249	424	722	1227	4.9
0.2x1 ips	1139	1652	2395	3473	3.0	624	1061	1805	3068	4.9
0.1x1 ips	2278	3304	4791	6947	3.0	1249	2123	3610	6137	4.9

24~168 1日～1週間 / 169~720 1週間～1ヶ月 / 721~2160 1ヶ月～3ヶ月 / 2161~ 3ヶ月以上

VR-509記録時間 Repeat Rec off / Audio on

● 1CH記録の場合 [hour]

Total Framerate	SMOOTH High	SMOOTH Normal	SMOOTH Basic	SMOOTH Long	SMOOTH Long /High	HIGH-QUALITY High	HIGH-QUALITY Normal	HIGH-QUALITY Basic	HIGH-QUALITY Long	HIGH-QUALITY Long /High
30x1 ips	171	243	341	472	2.8	96	160	263	424	4.4
15x1 ips	269	376	519	703	2.6	153	252	407	637	4.2
10x1 ips	388	534	722	954	2.5	224	364	575	872	3.9
6x1 ips	518	702	930	1197	2.3	306	488	753	1104	3.6
3x1 ips	566	763	1002	1279	2.3	336	534	816	1183	3.5
2x1 ips	783	1026	1306	1608	2.1	480	741	1090	1506	3.1
1x1 ips	1266	1567	1873	2168	1.7	839	1212	1640	2071	2.5
0.5x1 ips	1833	2128	2394	2619	1.4	1339	1775	2194	2549	1.9
0.2x1 ips	—	—	—	—		—	—	—	—	
0.1x1 ips	—	—	—	—		—	—	—	—	

24~168 1日～1週間 / 169~720 1週間～1ヶ月 / 721~2160 1ヶ月～3ヶ月 / 2161~ 3ヶ月以上

● 4CH記録の場合 [hour]

Total Framerate	SMOOTH High	SMOOTH Normal	SMOOTH Basic	SMOOTH Long	SMOOTH Long /High	HIGH-QUALITY High	HIGH-QUALITY Normal	HIGH-QUALITY Basic	HIGH-QUALITY Long	HIGH-QUALITY Long /High
30x1 ips	44	64	92	132	3.0					
15x1 ips	71	102	147	209	2.9	39	66	112	186	4.8
10x1 ips	106	152	215	304	2.9	59	99	165	271	4.6
6x1 ips	146	208	294	410	2.8	82	137	227	368	4.5
3x1 ips	162	230	324	450	2.8	91	151	250	404	4.4
2x1 ips	237	334	463	632	2.7	134	222	361	571	4.3
1x1 ips	444	607	813	1062	2.4	259	417	652	974	3.8
0.5x1 ips	783	1026	1306	1608	2.1	480	741	1090	1506	3.1
0.2x1 ips	—	—	—	—		—	—	—	—	
0.1x1 ips	—	—	—	—		—	—	—	—	

24~168 1日～1週間 / 169~720 1週間～1ヶ月 / 721~2160 1ヶ月～3ヶ月 / 2161~ 3ヶ月以上

● 6CH記録の場合 [hour]

Total Framerate	SMOOTH High	SMOOTH Normal	SMOOTH Basic	SMOOTH Long	SMOOTH Long /High	HIGH-QUALITY High	HIGH-QUALITY Normal	HIGH-QUALITY Basic	HIGH-QUALITY Long	HIGH-QUALITY Long /High
30x1 ips										
15x1 ips	48	69	99	142	3.0					
10x1 ips	71	102	147	209	2.9	39	66	112	186	4.8
6x1 ips	99	142	202	285	2.9	55	92	154	254	4.6
3x1 ips	110	157	223	314	2.9	61	102	171	280	4.6
2x1 ips	162	230	324	450	2.8	91	151	250	404	4.4
1x1 ips	309	431	590	792	2.6	177	290	465	720	4.1
0.5x1 ips	566	763	1002	1279	2.3	336	534	816	1183	3.5
0.2x1 ips	—	—	—	—		—	—	—	—	
0.1x1 ips	—	—	—	—		—	—	—	—	

24~168 1日～1週間 / 169~720 1週間～1ヶ月 / 721~2160 1ヶ月～3ヶ月 / 2161~ 3ヶ月以上

● 9CH記録の場合 [hour]

Total Framerate	SMOOTH High	SMOOTH Normal	SMOOTH Basic	SMOOTH Long	SMOOTH Long /High	HIGH-QUALITY High	HIGH-QUALITY Normal	HIGH-QUALITY Basic	HIGH-QUALITY Long	HIGH-QUALITY Long /High
30x1 ips										
15x1 ips										
10x1 ips	48	69	99	142	3.0					
6x1 ips	66	96	137	196	3.0	37	62	104	174	4.7
3x1 ips	74	106	152	216	2.9	41	69	116	192	4.7
2x1 ips	110	157	223	314	2.9	61	102	171	280	4.6
1x1 ips	213	300	418	574	2.7	120	199	325	517	4.3
0.5x1 ips	400	550	743	979	2.4	232	376	592	895	3.9
0.2x1 ips	—	—	—	—		—	—	—	—	
0.1x1 ips	—	—	—	—		—	—	—	—	

24~168 1日～1週間 / 169~720 1週間～1ヶ月 / 721~2160 1ヶ月～3ヶ月 / 2161~ 3ヶ月以上

Recording Duration (continued)

Requirements: Upon setup of standard HDD (320 GB) (2/2)

VR-509記録時間　Repeat Rec off / Audio off

●1CH記録の場合 [hour]

Total Framerate	SMOOTH					HIGH-QUALITY				
	High	Normal	Basic	Long	Long /HIgh	High	Normal	Basic	Long	Long /HIgh
30x1 ips	170	247	358	519	3.1	93	158	270	459	4.9
15x1 ips	275	400	580	841	3.1	151	257	437	743	4.9
10x1 ips	413	600	870	1261	3.1	226	385	655	1114	4.9
6x1 ips	579	840	1218	1766	3.1	317	540	918	1560	4.9
3x1 ips	643	933	1353	1962	3.1	352	600	1020	1734	4.9
2x1 ips	965	1400	2030	2944	3.1	529	900	1530	2601	4.9
1x1 ips	1931	2800	4061	5888	3.0	1058	1800	3060	5202	4.9
0.5x1 ips	3863	5601	8122	11777	3.0	2117	3600	6120	10405	4.9
0.2x1 ips	9657	14004	20305	29443	3.0	5294	9001	15301	26013	4.9
0.1x1 ips	19315	28008	40612	58887	3.0	10589	18002	30603	52026	4.9

24~168 1日～1週間　169~720 1週間～1ヶ月　721~2160 1ヶ月～3ヶ月　2161~ 3ヶ月以上

●4CH記録の場合 [hour]

Total Framerate	SMOOTH					HIGH-QUALITY				
	High	Normal	Basic	Long	Long /HIgh	High	Normal	Basic	Long	Long /HIgh
30x1 ips	42	61	89	129	3.1					
15x1 ips	68	100	145	210	3.1	37	64	109	185	5.0
10x1 ips	103	150	217	315	3.1	56	96	163	278	5.0
6x1 ips	144	210	304	441	3.1	79	135	229	390	4.9
3x1 ips	160	233	338	490	3.1	88	150	255	433	4.9
2x1 ips	241	350	507	736	3.1	132	225	382	650	4.9
1x1 ips	482	700	1015	1472	3.1	264	450	765	1300	4.9
0.5x1 ips	965	1400	2030	2944	3.1	529	900	1530	2601	4.9
0.2x1 ips	2414	3501	5076	7360	3.0	1323	2250	3825	6503	4.9
0.1x1 ips	4828	7002	10152	14721	3.0	2647	4500	7650	13006	4.9

24~168 1日～1週間　169~720 1週間～1ヶ月　721~2160 1ヶ月～3ヶ月　2161~ 3ヶ月以上

●6CH記録の場合 [hour]

Total Framerate	SMOOTH					HIGH-QUALITY				
	High	Normal	Basic	Long	Long /HIgh	High	Normal	Basic	Long	Long /HIgh
30x1 ips										
15x1 ips	45	66	96	140	3.1					
10x1 ips	68	100	145	210	3.1	37	64	109	185	5.0
6x1 ips	96	140	203	294	3.1	52	90	153	260	5.0
3x1 ips	107	155	225	327	3.1	58	100	170	289	5.0
2x1 ips	160	233	338	490	3.1	88	150	255	433	4.9
1x1 ips	321	466	676	981	3.1	176	300	510	867	4.9
0.5x1 ips	643	933	1353	1962	3.1	352	600	1020	1734	4.9
0.2x1 ips	1609	2334	3384	4907	3.0	882	1500	2550	4335	4.9
0.1x1 ips	3219	4668	6768	9814	3.0	1764	3000	5100	8671	4.9

24~168 1日～1週間　169~720 1週間～1ヶ月　721~2160 1ヶ月～3ヶ月　2161~ 3ヶ月以上

●9CH記録の場合 [hour]

Total Framerate	SMOOTH					HIGH-QUALITY				
	High	Normal	Basic	Long	Long /HIgh	High	Normal	Basic	Long	Long /HIgh
30x1 ips										
15x1 ips										
10x1 ips	45	66	96	140	3.1					
6x1 ips	64	93	135	196	3.1	35	60	102	173	4.9
3x1 ips	71	103	150	218	3.1	39	66	113	192	4.9
2x1 ips	107	155	225	327	3.1	58	100	170	289	5.0
1x1 ips	214	311	451	654	3.1	117	200	340	578	4.9
0.5x1 ips	429	622	902	1308	3.0	235	400	680	1156	4.9
0.2x1 ips	1073	1556	2256	3271	3.0	588	1000	1700	2890	4.9
0.1x1 ips	2146	3112	4512	6543	3.0	1176	2000	3400	5780	4.9

24~168 1日～1週間　169~720 1週間～1ヶ月　721~2160 1ヶ月～3ヶ月　2161~ 3ヶ月以上

VR-509記録時間　Repeat Rec off / Audio on

●1CH記録の場合 [hour]

Total Framerate	SMOOTH					HIGH-QUALITY				
	High	Normal	Basic	Long	Long /HIgh	High	Normal	Basic	Long	Long /HIgh
30x1 ips	161	229	321	445	2.8	90	151	248	400	4.4
15x1 ips	253	354	489	662	2.6	144	237	383	600	4.2
10x1 ips	365	503	680	898	2.5	211	343	541	821	3.9
6x1 ips	488	662	876	1128	2.3	288	460	709	1040	3.6
3x1 ips	533	718	944	1205	2.3	317	503	768	1114	3.5
2x1 ips	737	966	1230	1515	2.1	452	698	1026	1418	3.1
1x1 ips	1193	1476	1764	2040	1.7	790	1141	1545	1950	2.5
0.5x1 ips	1726	2004	2254	2467	1.4	1261	1671	2067	2401	1.9
0.2x1 ips	—	—	—	—		—	—	—	—	
0.1x1 ips	—	—	—	—		—	—	—	—	

24~168 1日～1週間　169~720 1週間～1ヶ月　721~2160 1ヶ月～3ヶ月　2161~ 3ヶ月以上

●4CH記録の場合 [hour]

Total Framerate	SMOOTH					HIGH-QUALITY				
	High	Normal	Basic	Long	Long /HIgh	High	Normal	Basic	Long	Long /HIgh
30x1 ips	42	60	87	124	3.0					
15x1 ips	67	96	136	197	2.9	37	62	105	175	4.7
10x1 ips	100	143	203	286	2.9	55	93	155	255	4.6
6x1 ips	138	196	277	386	2.8	77	129	213	346	4.5
3x1 ips	153	217	305	424	2.8	85	143	235	380	4.5
2x1 ips	224	314	436	595	2.7	126	209	340	538	4.3
1x1 ips	418	571	766	1000	2.4	244	393	614	918	3.6
0.5x1 ips	737	966	1230	1515	2.1	452	698	1026	1418	3.1
0.2x1 ips	—	—	—	—		—	—	—	—	
0.1x1 ips	—	—	—	—		—	—	—	—	

24~168 1日～1週間　169~720 1週間～1ヶ月　721~2160 1ヶ月～3ヶ月　2161~ 3ヶ月以上

●6CH記録の場合 [hour]

Total Framerate	SMOOTH					HIGH-QUALITY				
	High	Normal	Basic	Long	Long /HIgh	High	Normal	Basic	Long	Long /HIgh
30x1 ips										
15x1 ips	45	65	93	134	3.0					
10x1 ips	67	96	138	197	2.9	37	62	105	175	4.7
6x1 ips	93	134	190	269	2.9	52	87	145	240	4.6
3x1 ips	103	148	210	296	2.9	57	96	161	264	4.6
2x1 ips	153	217	305	424	2.8	85	143	235	380	4.5
1x1 ips	291	406	556	746	2.6	167	273	438	678	4.1
0.5x1 ips	533	718	944	1205	2.3	317	503	768	1114	3.5
0.2x1 ips	—	—	—	—		—	—	—	—	
0.1x1 ips	—	—	—	—		—	—	—	—	

24~168 1日～1週間　169~720 1週間～1ヶ月　721~2160 1ヶ月～3ヶ月　2161~ 3ヶ月以上

●9CH記録の場合 [hour]

Total Framerate	SMOOTH					HIGH-QUALITY				
	High	Normal	Basic	Long	Long /HIgh	High	Normal	Basic	Long	Long /HIgh
30x1 ips										
15x1 ips										
10x1 ips	45	65	93	134	3.0					
6x1 ips	63	90	129	184	2.9	34	58	98	164	4.8
3x1 ips	69	100	143	203	2.9	38	65	109	181	4.8
2x1 ips	103	148	210	296	2.9	57	96	161	264	4.6
1x1 ips	200	282	394	540	2.7	113	187	306	487	4.3
0.5x1 ips	377	518	700	922	2.4	218	354	558	843	3.9
0.2x1 ips	—	—	—	—		—	—	—	—	
0.1x1 ips	—	—	—	—		—	—	—	—	

24~168 1日～1週間　169~720 1週間～1ヶ月　721~2160 1ヶ月～3ヶ月　2161~ 3ヶ月以上

* Recording duration may shorten by about 10% depending on the hard disk conditions as well as type of image.

* When in the Repeat Record mode, recording will be deleted from the oldest data to create recording space when it is running out on the hard disk.

* Recording duration may be shortened due to wear and tear of the hard disk over time.

* When new hard disks are added, recording duration may slow down proportionately in accordance with the capacity of the new disk.

* Recording duration will be reduced by half when the mirroring settings are activated. (Upon setup of a standard HDD)

Explanations

DVD Recording Time

The following charts provide guidelines to the recording time for one channel that can be recorded onto a single DVD.

The charts are listed by export format.

The conditions for all of these are as follows:

Tie Date Recording: No

Audio: Yes (however, audio will not be recorded for 0.2ips or 0.08ips.)

The following charts have been created under the assumption that only one channel will be used. Additionally, the times listed do not apply to multiple channels for which different frame rates and resolutions have been selected.

■ Export Format: DVD-Video (Intermittent Interpolation)

	Smooth				High Accuracy			
Framerate	High	Normal	Basic	Long	High	Normal	Basic	Long
30 ips								
15 ips								
10 ips								
6 ips								
3 ips								
2 ips								
1 ips								
0.5 ips								
0.2 ips								
0.1 ips								

■ Export Format: Self-Playing

	Smooth				High Accuracy			
Framerate	High	Normal	Basic	Long	High	Normal	Basic	Long
30 ips								
15 ips								
10 ips								
6 ips								
3 ips								
2 ips								
1 ips								
0.5 ips								
0.2 ips								
0.1 ips								

■ Export Format: Self-Playing + DVD-Video (Intermittent Interpolation)

	Smooth				High Accuracy			
Framerate	High	Normal	Basic	Long	High	Normal	Basic	Long
30 ips								
15 ips								
10 ips								
6 ips								
3 ips								
2 ips								
1 ips								
0.5 ips								
0.2 ips								
0.1 ips								

Time Required for DVD Exporting

The following chart provides guidelines to the amount of time required for exporting one hour's worth of recorded data for a single channel in the self-playing + DVD-Video (OPT) format. Note that the exporting times are merely estimates, and the actual times may differ greatly depending on the DVD media in use, and the status of the VR-509.

	Smooth				High-Precision			
Framerate	High	Normal	Basic	Long	High	Normal	Basic	Long
30fps	1h 50min	2h 30min	3h 20min	4h 10min	1h 10min	1h 50min	2h 50min	3h 40min
15fps	2h 30min	3h 20min	4h	4h 40min	1h 40min	2h 30min	3h 30min	4h 20min
10fps	3h	4h	4h 30min	5h 10min	2h 10min	3h 10min	4h 10min	5h
6fps	3h 40min	4h 30min	5h	5h 20min	2h 40min	3h 40min	4h 30min	5h 20min
3fps	3h 50min	4h 30min	5h	5h 20min	2h 50min	3h 50min	4h 40min	5h 20min
2fps	4h 30min	5h	5h 30min	5h 50min	3h 30min	4h 20min	5h	5h 40min
1fps	4h 30min	5h	5h 30min	5h 50min	3h 30min	4h 20min	5h	5h 40min
0.5fps	4h 30min	5h	5h 30min	5h 50min	3h 30min	4h 20min	5h	5h 40min
0.2fps	7h 30min	9h 10min	10h 50min	12h	5h	7h	9h 30min	11h 30min
0.1fps	7h 30min	9h 10min	10h 50min	12h	5h	7h	9h 30min	11h 30min

Note *: The High 30ips in the high-accuracy mode represents 30-minutes worth of data.
Note **: The High 15ips and Normal 30ips in the high-accuracy mode represents 50-minutes worth of data.

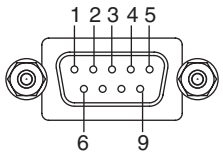
RS-232C Interface

1. Electrical Specifications

1. D-Sub 9-pin Connector Specifications

Pin No.	Signal	Operations	Signal Direction
3	TXD	Sending data	HDR → CPU
2	RXD	Receiving data	HDR ← CPU
6	DSR	Data set ready	HDR ← CPU
5	GND	Signal earth	
4	DTR	Data terminal ready	HDR → CPU

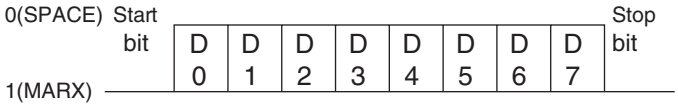
Output level
OFF: –5V or less
ON : +5V or more



2. Data Format

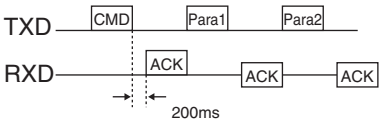
Mode: Asynchronous
Character Length: 8bit
Parity Check: None
Stop Bit: 1bit
Data Speed: 9600bps

Configuration



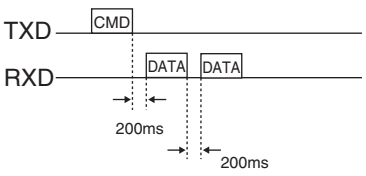
3. Command Format and ACK/NAK

Control: No control sequence



- The ACK (NAK) response will be returned within 200ms for a 1byte transmission command from the CPU.
- The NAK response is returned only when a non-defined command is received (however, NAK is returned for certain commands depending on the status.)
- The parameters for data that have elapsed for five or more seconds after the previous receipt are not recognized as parameters.
- Only one retry is made when a time-out is triggered. In this event, the resending is performed from the first byte of the relevant command.

4. SENS Commands



2. List of RS-232C Commands

BASIC TABLE

→Top ↓ Bottom	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				Data 0	*ENTER*							ALARM FWD				
1				Data 1	*CLEAR ERROR*							ALARM REV				
2	*ERROR*			Data 2												
3				Data 3												
4				Data 4												
5				Data 5								SHUTTLE FWD				
6				Data 6		CLEAR						SHUTTLE REV				JVC-1 TABLE
7				Data 7										STATUS SENSE		BASIC TABLE
8				Data 8												
9				Data 9												
A	*ACK*			PLAY	REV PLAY								REC			REC REQUEST
B	*NAK*			FWD x3	REV x3						FF					VTR/HDR INQ
C				FWD SLOW	REV SLOW						REW					
D				FWD STILL	REV STILL						FWD STEP					
E				FWD x15	REV x15				DATE SET		REV STEP	DATE SENSE				
F				STOP	STILL				TIME SET			TIME SENSE				

JVC-1 TABLE

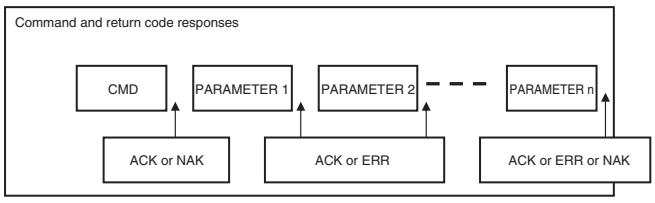
→Top ↓ Bottom	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				Data 0	*ENTER*		TIMER ON			TD SKIP FWD		ALARM FWD	OPE LOCK ON			
1				Data 1	*CLEAR ERROR*		TIMER OFF			TD SKIP REV		ALARM REV	OPE LOCK OFF	DEVICE TYPE		
2	*ERROR*			Data 2			PRG	ROM VER		TD SEARCH				HOUR METER SENSE		
3				Data 3			DOWN			EVENT SKIP FWD				NETWORK SENSE		
4				Data 4			RIGHT	ON SCREEN SELECT		EVENT SKIP REV						
5				Data 5			Vol +					SHUTTLE FWD				
6				Data 6		CLEAR	Vol -	CANCEL	HDR PB CAMERA SET			SHUTTLE REV		VR STATUS SENSE		JVC-1 TABLE ON
7				Data 7										STATUS SENSE		BASIC TABLE
8				Data 8			LEFT							RECMODE SENSE		
9				Data 9			UP							ALARM MODE SENSE		
A	*ACK*			PLAY			SEQ						REC	VR MODE SENSE		REC REQUEST
B	*NAK*						MENU ON				FF			MONITOR MODE SENSE		VTR/HDR INQ
C							MENU OFF				REW			MOTION DETECT SENSE		MAC SENSE
D							MENU ON/OFF				FWD STEP					
E									DATE SET		REV STEP	DATE SENSE		MONITOR OUT STATUS SENSE		
F				STOP	STILL	PB STOP			TIME SET			TIME SENSE		ACTIVE SENSE	MENU RESET	

3. Details of the Commands

The numbers within parenthesis indicate the corresponding table.

3.1. RETURN CODE

- ERROR (02H) [BASIC/JVC-1]
  The ERROR is returned when the VR-509E receives an un-receivable command related to a series of commands. This command will not be accepted when sent, and only the status SENS command will be returned (the status SENS command is also valid in error modes, and is returned.) Enter the CLEAR ERROR (41H) or CLEAR (56H) commands to clear this mode.
  Enter the CLEAR ERROR (41H) command to delete numerical commands entered (transmitted) at the end of TD SEARCH and other numerical commands, and enter the CLEAR (56H) command to clear all commands.
  Buffering will not be performed for other parameters that are received while the error mode is in progress.
- ACK (0AH) [BASIC/JVC-1]
  The return code that is returned when a command that is defined on the specified table is received, regardless of the operation.
- NAK (0BH) [BASIC/JVC-1]
  The return code that is returned when a non-defined command or a command belonging to a function with which the VR-509E is not equipped is received. NAK is returned and the system set at standby to receive the next command when five or more seconds elapse after parameter receipt.



3.2. Operation Commands

- PLAY (3AH) [BASIC/JVC-1]
  Activates the PLAY mode.
  * During EE: Displays the playback menu
    During playback menu display:
    Playback (when continual playback has been selected)
    During PB (when paused): Playback
    During PB (other situations): Pause
- SHUTTLE FWD x3 (3BH) [BASIC]
- SHUTTLE FWD SLOW (3CH) [BASIC]
- SHUTTLE FWD STILL (3DH) [BASIC]
- SHUTTLE FWD x15 (3EH) [BASIC]
  Activates the shuttle forward mode.
- STOP (3FH) [BASIC/JVC-1]
  Activates the STOP mode. Activates the REC mode when in the REC+PLAY mode (only playback stopped.)
  Does not stop recording.
  * During playback: Displays the playback menu.
    During playback menu display: To the EE screen
- REV PLAY (4AH) [BASIC]
  Activates the -x1 PLAY mode.
- SHUTTLE REV x3 (4BH) [BASIC]
- SHUTTLE REV SLOW (4CH) [BASIC]
- SHUTTLE REV STILL (4DH) [BASIC]
- SHUTTLE REV x15 (4EH) [BASIC]
  Activates the shuttle reverse mode.
- STILL (4FH) [BASIC/JVC-1]
  Activates the STILL mode during playback.
- PB STOP (5FH) [JVC-1]
  The STOP command for specific use during playback.
  Activates the REC mode when in the REC+PLAY mode.
  * During PB: Displays the playback menu.
    During playback menu display: To the EE screen.
- TIMER/MODE ON (60H) [JVC-1]
  Timer/Operation switch: Set of ON.
- TIMER/MODE OFF (61H) [JVC-1]
  Timer/Operation switch: Set of OFF.
- TD SKIP FWD (90H) [JVC-1]
  The command to jump in the forward direction for the time set in the MENU x the number of jumps. The number of jumps is a numerical command that is specified with two characters. Only valid during PB (maximum 99.)

  TXD [90H] [3□H] [3□H]
  RXD [0AH] [0AH] [0AH]
- TD SKIP REV(91H) [JVC-1]
  The command to jump in the reverse direction for the time set in the MENU x the number of jumps. The number of jumps is a numerical command that is specified with two characters. Only valid during PB (maximum 99.)

3. Details of the Commands (continued)

3.2. Operation Commands (continued)

- TD SEARCH(92H) [JVC-1]

  The command to queue up data in the specified date location. The date is specified by month, day, year, hour and minute in a numerical command with ten characters.

		Month	Day	Year				
TXD	92H	3□H	3□H	3□H	3□H	3□H	3□H	·····
RXD		0AH	0AH	0AH	0AH	0AH	0AH	0AH

		Hour	Minute		
TXD	3□H	3□H	3□H	3□H	
RXD		0AH	0AH	0AH	0AH

- EVENT SKIP FWD (93H) [JVC-1]

  The command to jump in the forward direction the x number of events (one event is from the start of recording to the end.) The number of events to jump is a numerical command with two characters. This is only valid during PB (maximum 10 times.)

TXD	93H	3□H	3□H
RXD	0AH	0AH	0AH

- EVENT SKIP REV(94H) [JVC-1]

  The command to jump in the reverse direction the x number of events (one event is from the start of recording to the end.) The number of events to jump is a numerical command with two characters. This is only valid during PB (maximum 10 times.)

- FF (ABH) [BASIC/JVC-1]

  When the VR-509E is in the EE mode: Moves to the most recent time stamp sector when loop recording is ON, and moves to the final address sector of the recording area's LBA when loop recording is OFF, and becomes STILL.
  When the VR-509E is in the PB mode: Jumps in the forward direction to the alarm, date/time or event in accordance with the skip setting.

- REW (ACH) [BASIC/JVC-1]

  When the VR-509E is in the EE mode: Moves to the oldest time stamp sector when loop recording is ON, and moves to the first address sector of the recording area's LBA when loop recording is OFF, and becomes STILL.
  When the VR-509E is in the PB mode: Jumps in the reverse direction to the alarm, date/time or event in accordance with the skip setting.

- FWD STEP (ADH) [BASIC/JVC-1]

  Advances approximately one frame in the forward direction when in the STILL mode, and becomes STILL.
  Enters the STILL mode when in any other playback mode.

- REV STEP (AEH) [BASIC/JVC-1]

  Advances approximately one frame in the reverse direction when in the STILL mode, and becomes STILL.
  Enters the STILL mode when in any other playback mode.

- ALARM FWD(B0H) [BASIC/JVC-1]

  The command to perform the alarm jump in the forward direction for the specified number of times. The number of jumps is a numerical command with two characters. This is only valid during PB with the VR-509E (maximum 10 times.)

TXD	B0H	3□H	3□H
RXD	0AH	0AH	0AH

- ALARM REV(B1H) [BASIC/JVC-1] (Maximum 10 times)

  The command to perform the alarm jump in the reverse direction for the specified number of times. The number of jumps is a numerical command with two characters. This is only valid during PB with the VR-509E (maximum 10 times.)

- SHUTTLE FWD(B5H) [BASIC/JVC-1]
- SHUTTLE REV(B6H) [BASIC/JVC-1]

  Activates the shuttle FWD/REV modes. The speed (30 - 3AH) is specified with a single character.

TXD	B5H	3□H	
RXD	0AH	0AH	

Data	30	31	32	33	34	35	36	37	38	39	3A
Speed	Still	Slow	—	—	—	1	3	5	15	60	360

- OPE LOCK ON (C0H) [JVC-1]

  Activates the lock for all of the VR-509e's key operations.
  The lock level is in accordance with the menu settings.
- OPE LOCK OFF (C1H) [JVC-1]

  Releases the operations lock status.

  * The passcode entry screen will be displayed when a passcode has been set.

- REC (FAH CAH) [BASIC/JVC-1]

  The recording mode is activated when this command is transmitted immediately after the REC/DUB REQUEST (FAH) command. However, the NAK (0BH) response is returned when loop recording is set at OFF and capacity is 0.
  Caution: Compatibility with older models is required for the REC/DUB REQUEST (FAH) command.

TXD	FAH	CAH
RXD	0AH	0AH

3. Details of the Commands (continued)

3.3. Setup Commands

- DOWN (63H) [JVC-1]
- RIGHT (64H) [JVC-1]
- LEFT (68H) [JVC-1]
- UP (69H) [JVC-1]
  Shifts the parameter settings when the timer PRG and the alarm search parameters have been set.
  Shifts the selection fields with the [UP] and [DOWN] keys when the menu is being displayed.
- Vol +, – (65H, 66H) [JVC-1]
  Changes the set values with + (ascending) and – (descending).
- SEQ (6AH) [JVC-1]
  Changes the monitor output screen mode.
- MENU ON (6BH) [JVC-1]
  Displays the menu.
- MENU OFF (6CH) [JVC-1]
  Clears the menu.
- MENU ON/OFF (6CH) [JVC-1]
  Switches between menu displays/clear.
- ON SCREEN SELECT (74H) [JVC-1]

	1st byte	2nd byte
TXD	74H	□□H
RXD	0AH	0AH

  Switches the contents displayed on screen (REMAIN display is not performed when loop recording is set at ON.)

Second byte		
Bit	Status	Detail
7	1 / 0	Stop recording notification : 1(ON) / 0(OFF)
6	1 / 0	Warning display : 1(ON) / 0(OFF)
5	1 / 0	Camera title display : 1(ON) / 0(OFF)
4	1 / 0	Mode display : 1(ON) / 0(OFF)
3	1 / 0	Remaining capacity display : 1(ON) / 0(OFF)
2	1 / 0	Alarm detection display : 1(ON) / 0(OFF)
1	1 / 0	Alarm count display : 1(ON) / 0(OFF)
0	1 / 0	Date/time display : 1(ON) / 0(OFF)

- CANCEL (76H) [JVC-1]
  Cancels the program data on the program timer setup screen.

- HDR PB CAMERA SET (86H) [JVC-1]
  Specifies the playback camera. The monitor output camera is specified during recording.

	1st byte	2nd byte	3rd byte
TXD	86H	□□H	□□H
RXD	0AH	0AH	0AH

Second byte		
Bit	Status	Detail
7 to 4	Fixed at “3”	
3 to 0	0 / 1 / 2	0: FULL size specification / 1: FULL size sequential display
	3 / 4 / 5	2: 4-screen specification / 3: 4-screen sequential display
	6	5: 6-screen specification / 6: 9-screen specification

* FULL size sequential display, 4-screen sequential display and 6-screen specification are invalidated when in the playback mode (include when recording and playback are performed at the same time.)

* The FULL size sequential display ⇔ 4-screen sequential display specifications are invalid.

Third byte		
Bit	Status	Detail
7 to 4	Fixed at “3”	
3 to 0	8 to 0	Second BYTEF: During FULL size specification 8: Camera 9 specification to 0: Camera 1 specification Second BYTEF: During 4-screen specification 2: Pattern C 1: Pattern B 0: Pattern A Values that do not correspond to each setting are invalidated.

* Invalid with Second Byte: FULL size sequential display, 4-screen sequential display, 6-screen screen and 9-screen specifications.

- DATE SET(8EH) [BASIC/JVC-1]
  Sets the month, day and year in the VR-509E.
  (Cannot be set when the NTP Client function is enabled, or when the VR-509E is in the recording mode.)

		Month	Day	Year			
TXD	8EH	3□H	3□H	3□H	3□H	3□H	3□H
RXD	0AH	0AH	0AH	0AH	0AH	0AH	0AH

- TIME SET(8FH) [BASIC/JVC-1]
  Sets the hours, minutes and seconds in the VR-509E.
  (Cannot be set when the NTP Client function is enabled, or when the VR-509E is in the recording mode.)

		Hours	Minutes	Seconds			
TXD	8FH	3□H	3□H	3□H	3□H	3□H	3□H
RXD	0AH	0AH	0AH	0AH	0AH	0AH	0AH

- MENU RESET (EFH) [JVC-1]
  Initializes the menu setup values.
  (Cannot be set when the VR-509E is in the recording mode, or when the operation lock has been activated.)

3. Details of the Commands (continued)

3.4. SENS Commands

- ROM VER (72H) [JVC-1]

  Returns the RS-232C software version.

  TXD [72H]
  RXD [21H] [01H] [10H]
  ↓ ↓ ↓
  RS-232C version is displayed
  Ver.1-10 in the above example

- STATUS SENSE (D7H) [BASIC/JVC-1]

  Returns the status data related to the VR-509E in 11 bytes.

  TXD [D7H]
  RXD [□□H] [□□H] [□□H] [□□H] ····· [□□H]
  1st byte 2nd byte 3rd byte ····· 11th byte

STATUS SENSE Return Data

byte No.	bit No.	
		PB STATUS
1	bit 7	Execution mode: 00H : PB STOP 01H : PLAY 02H : STILL 0BH : SHUTTLE FWD 0CH : SHUTTLE REV 0DH : JOG FWD 0EH : JOG REV
	bit 6	
	bit 5	
	bit 4	
	bit 3	
	bit 2	
	bit 1	
	bit 0	
2		REC STATUS (Camera 1)
	bit 7	Passcode error during REC, “1” output
	bit 6	During emergency REC, “1” output
	bit 5	During motion REC, “1” output
	bit 4	During normal REC, “1” output
	bit 3	During alarm REC, “1” output
	bit 2	(Not defined) “0” output
	bit 1	During pre-alarm REC, “1” output
	bit 0	During time REC, “1” output
		REC STATUS (Cameras 2 to 9)
3 to 11	bit7 to 0	Same content as the second byte (cameras 2 to 9)

- DATE SENSE (BEH) [BASIC/JVC-1]

  Returns the month, day and year currently set in the VR-509E.

  TXD [BEH]
  RXD [3□H] [3□H] [3□H] [3□H] [3□H] [3□H]
  Month Day Year

- TIME SENSE (BFH) [BASIC/JVC-1]

  Returns the hours, minutes and seconds currently set in the VR-509E.

  TXD [BFH]
  RXD [3□H] [3□H] [3□H] [3□H] [3□H] [3□H]
  Hours Minutes Seconds

- DEVICE TYPE (D1H) [JVC-1]

  Returns the type of equipment connected to the VR-509E in ASCII code.

  TXD [D1H]
  RXD [35H] [30H] [39H] [49H]
  5 0 9 1

- HOUR METER SENSE (D2H) [JVC-1]

  Returns the HOUR METER (time).

  TXD [D2H]
  RXD [3□H] [3□H] [3□H] [3□H] [3□H] [3□H]
  6th character 5th character 4th character 3rd character 2nd character 1st character

- NETWORK SENSE (D3H) [JVC-1]

  Returns the network setup data.

  TXD [D3H]
  RXD [□□H] [□□H] [□□H] [□□H] ····· [□□H]
  1st byte 2nd byte 3rd byte ····· 33rd byte

NETWORK SENSE Return Data

byte No.	bit No.	
		Host Name
1 to 16	bit 7 to 0	Host name (1st byte to 16th byte)
17	bit 7	Undefined (fixed at “0”)
	bit 6	Undefined (fixed at “0”)
	bit 5	Undefined (fixed at “0”)
	bit 4	Undefined (fixed at “0”)
	bit 3	Undefined (fixed at “0”)
	bit 2	Undefined (fixed at “0”)
	bit 1 bit 0	Setup method: 00: Off, 01: Fixed, 10: DHCP
		IP Address
18 to 21	bit 7 to 0	IP address value (00H to FFH: 4BYTE)
		Net mask
22 to 25	bit 7 to 0	Net mask address value (00H to FFH: 4BYTE)
		Gateway
26 to 29	bit 7 to 0	Gateway address value (00H to FFH: 4BYTE)
		Name Server
30 to 33	bit 7 to 0	Name server address value (00H to FFH: 4BYTE)

3. Details of the Commands (continued)

3.4. SENS Commands (continued)

- VR STATUS SENSE (D6H) [JVC-1]
  Returns the status data related to the VR-509E.

TXD D6H
RXD □□H □□H □□H □□H ····· □□H
1st byte 2nd byte 3rd byte ····· 8th byte

VR STATUS SENSE Return Data

byte No.	bit No.	
1		On-screen Settings
	bit 7	"1" output with the stop recording notification display at [ON].
	bit 6	"1" output with the warning display at [ON].
	bit 5	"1" output with the camera title display at [ON].
	bit 4	"1" output with the mode display at [ON].
	bit 3	"1" output with the remaining capacity display at [ON].
	bit 2	"1" output with the alarm detection display at [ON].
	bit 1	"1" output with the alarm count display at [ON].
	bit 0	"1" output with the date/time display at [ON].
		Buzzer Settings
2	bit 7	(Not defined) "0" output
	bit 6	(Not defined) "0" output
	bit 5	(Not defined) "0" output
	bit 4	"1" output with the button operation sound at [ON].
	bit 3	(Not defined) "0" output
	bit 2	(Not defined) "0" output
	bit 1	"1" output with the HDD full buzzer setting at [ON].
	bit 0	"1" output with the alarm buzzer display at [ON].
		Warning Buzzer Settings
3	bit 7	"1" output with stop recording at [ON].
	bit 6	"1" output with power failure detection at [ON].
	bit 5	"1" output with incorrect passcode entry at [ON].
	bit 4	"1" output with fan motor error at [ON].
	bit 3	"1" output with hard disk error at [ON].
	bit 2	"1" output with video loss at [ON].
	bit 1	Warning buzzer settings: 00: OFF, 01: User, 10: All
	bit 0	
		Buzzer Operations
4	bit 7	"1" output with stop recording buzzer at [ON].
	bit 6	"1" output with power failure detection buzzer at [ON].
	bit 5	"1" output with incorrect passcode entry buzzer at [ON].
	bit 4	"1" output with fan motor error buzzer at [ON].
	bit 3	"1" output with hard disk error buzzer at [ON].
	bit 2	"1" output with video loss buzzer at [ON].
	bit 1	"1" output with HDD full buzzer at [ON].
	bit 0	"1" output with alarm buzzer at [ON].
		Warning 1/4
5	bit 7	"1" output with Codec 1 error.
	bit 6	"1" output with fan motor error.
	bit 5	"1" output with initialization error.
	bit 4	"1" output with eeprom error.
	bit 3	"1" output with mirroring error.
	bit 2	"1" output with low HDD capacity.
	bit 1	"1" output with HDD FULL.
	bit 0	"1" output with HDD error.
		Warning 2/4
6	bit 7	"1" output with Ethernet access not possible.
	bit 6	"1" output with firmware update error.
	bit 5	"1" output with Flash memory error.
	bit 4	(Not defined) "0" output
	bit 3	(Not defined) "0" output
	bit 2	"1" output with DVD connection error.
	bit 1	"1" output with USB connection error.
	bit 0	"1" output with Codec 2 error.
		Warning 3/4
7	bit 7	Camera 1: "1" output with input error.
	bit 6	Camera 2: "1" output with input error.
	bit 5	Camera 3: "1" output with input error.
	bit 4	Camera 4: "1" output with input error.
	bit 3	Camera 5: "1" output with input error.
	bit 2	Camera 6: "1" output with input error.
	bit 1	Camera 7: "1" output with input error.
	bit 0	Camera 8: "1" output with input error.
		Warning 4/4
8	bit 7	Camera 9: "1" output with input error.
	bit 6	(Not defined) "0" output
	bit 5	(Not defined) "0" output
	bit 4	(Not defined) "0" output
	bit 3	(Not defined) "0" output
	bit 2	(Not defined) "0" output
	bit 1	(Not defined) "0" output
	bit 0	(Not defined) "0" output

- REC MODE SENSE (D8H) [JVC-1]
  Returns the status data for the input recording settings. (Current operating mode status. The status at the time of operations will be returned when in the timer mode.)

TXD D8H
RXD □□H □□H □□H □□H ····· □□H
1st byte 2nd byte 3rd byte ····· 10th byte

REC MODE SENSE Return Data

byte No.	bit No.	
1		Input Recording Settings (Audio)
	bit 7	(Not defined) "0" output
	bit 6	(Not defined) "0" output
	bit 5	(Not defined) "0" output
	bit 4	(Not defined) "0" output
	bit 3	(Not defined) "0" output
	bit 2	"1" output with audio recording during normal operations at [ON].
	bit 1	"1" output with audio recording at [ON].
	bit 0	Recorded image mode: Smooth: "0", High-resolution: "1"
2		Input recording Settings (Camera 1)
	bit 7	(Not defined) "0" output
	bit 6	Normal Operations: Recording frame rate:
	bit 5	0000: 0.08 0001: 0.2 0010: 0.4 0011: 0.8 0100: 1.7
	bit 4	0101: 2.5 0110: 5 0111: 8.3 1000: 12.5 1001: 25
	bit 3	1111: NotRec
	bit 2	Normal Operations: Recording resolution
	bit 1	
	bit 0	"1" output with camera 1 at [Connected].
		Input Recording Settings (Camera 2 to 9)
3 to 10	bit 7 to 0	The contents are the same as 2BYTE.

3. Details of the Commands (continued)

3.4. SENS Commands (continued)

- ALARM MODE SENSE (D9H) [JVC-1]

  Returns the status data for the alarm recording settings. (Current operating mode status. The status at the time of operations will be returned when in the timer mode.)

TXD [D9H]
RXD [□□H] [□□H] [□□H] [□□H] ····· [□□H]
1st byte 2nd byte 3rd byte ····· 19th byte

ALARM MODE SENSE Return Data

byte No.	bit No.	
		Alarm Recording Settings (All)
1	bit 7	Recording time during passcode input errors:
	bit 6	00: NotRec, 01: 10 seconds, 10: 20 seconds, 11: 30 seconds
	bit 5	Recording time during emergency detection:
	bit 4	000: NotRec, 001: 30 seconds, 010: 1 minute, 011: 5 minutes,
	bit 3	100: 10 minutes, 101: 20 minutes, 110: Continual, 111: Manual
	bit 2	"1" output with audio recording during alarm operations at [ON].
	bit 1	"1" output with audio recording at [ON].
	bit 0	Recorded image mode: Smooth: "0", High-resolution: "1"
2		Alarm Recording Settings 1/2 (Camera 1)
	bit 7	Not defined: "0" output
	bit 6	Alarm recording: Recording frame rate:
	bit 5	0011: 0.8 0100: 1.7 0101: 2.5 0110: 5 0111: 8.3
	bit 4	1000: 12.5 1001: 25 1110: Auto 1111: NotRec
	bit 3	
	bit 2	Recording resolution: 00 : L 01 : B 10 : N 11 : H
	bit 1	
	bit 0	Not defined: "0" output
3		Alarm Recording Settings 2/2 (Cameras 2 to 9)
	bit 7	Not defined: "0" output
	bit 6	Not defined: "0" output
	bit 5	Recording time:
	bit 4	000 : 10 001 : 15 010 : 30 011 : 60 100 : 180 101 : 300
	bit 3	110: Manual
	bit 2	Pre-sensor recording time:
	bit 1	00: 10, 01: 30, 10: 60 (seconds), 11: [OFF]
	bit 0	"1" output with pre-alarm recording at [ON].
		Alarm Recording Settings 1/2 (Cameras 2 to 9)
4/6/,, ,/18	bit 7 to 0	The contents are the same as 2BYTE.
		Alarm Recording Settings 2/2 (Cameras 2 to 9)
5/7/,, ,/19	bit 7 to 0	The contents are the same as 3BYTE.

- VR MODE SENSE (DAH) [JVC-1]

  Returns the status data for the operation settings.

TXD [DAH]
RXD [□□H] [□□H] [□□H] [□□H] ····· [□□H]
1st byte 2nd byte 3rd byte ····· 6th byte

VR MODE SENSE Return Data

byte No.	bit No.	
		Skip Settings
1	bit 7	Not defined: "0" output
	bit 6	Continuous skip playback:
	bit 5	00: OFF, 01: 1 second, 10: 5 seconds, 11: 10 seconds
	bit 4	Time jump settings:
	bit 3	000: 1minute, 001: 5 minutes, 010: 10 minutes, 011: 30 minutes,
	bit 2	100: 1 hour, 101: 4 hours, 110: 1 day, 111: 1 week
	bit 1	Skip button settings:
	bit 0	00: Time, 01: Alarm, 19: Event, 11: Motion detection
2		Operation Settings 1/5
	bit 7	Loop recording:
	bit 6	00: OFF, 01: Alarm lock, 10: All
	bit 5	"1" output with the operation lock release method at [Passcode].
	bit 4	Range of operation lock activation:
	bit 3	00: OFF, 01: Prohibit stop recording, 10: Prohibit all, 11: User settings
	bit 2	"1" output with recording display lamp at [ON].
	bit 1	Power failure restoration operations:
	bit 0	00: OFF, 01: Maintained prior to power failure, 10: Enforced recording
3		Operation Settings 2/5
	bit 7	Not defined: "0" output
	bit 6	Not defined: "0" output
	bit 5	Recorded image storage period:
	bit 4	0000: 1 day, 0001: 3 days, 0010: 5 days, 0011: 1 week,
	bit 3	0100: 2 weeks, 0101: 3 weeks, 0110, 1 month, 0111: 3 months,
	bit 2	1000: 6 months
	bit 1	Loop recording:
	bit 0	00: OFF, 01: Alarm lock, 10: All
4		Operation Settings 3/5
	bit 7	Not defined: "0" output
	bit 6	Not defined: "0" output
	bit 5	"1" output with DVD operations at [ON].
	bit 4	"1" output with normal mode at [ON].
	bit 3	"1" output with monitor switch at [ON].
	bit 2	"1" output with amend settings at [ON].
	bit 1	"1" output with playback at [ON].
	bit 0	"1" output with stop recording at [ON].
5		Operation Settings 4/5
	bit 7	Audio 2 link destination:
	bit 6	0000: No specification, 0001: Camera 1; 0010: Camera 2;
	bit 5	0011: Camera 3; 0100: Camera 4; 0101: Camera 5; 0110: Camera 6;
	bit 4	0111: Camera 7; 1000: Camera 8; 1001: Camera 9
	bit 3	Audio 1 link destination:
	bit 2	0000: No specification, 0001: Camera 1; 0010: Camera 2;
	bit 1	0011: Camera 3; 0100: Camera 4; 0101: Camera 5; 0110: Camera 6;
	bit 0	0111: Camera 7; 1000: Camera 8; 1001: Camera 9
6		Operation Settings 5/5
	bit 7	Not defined: "0" output
	bit 6	Not defined: "0" output
	bit 5	Not defined: "0" output
	bit 4	Not defined: "0" output
	bit 3	"1" output with mirroring operation at [ON].
	bit 2	"1" output with auto scandisk at [ON].
	bit 1	When no selection of audio output link specification:
	bit 0	00: OFF, 01: Audio 1, 10: Audio 2

3. Details of the Commands (continued)

3.4. SENS Commands (continued)

- MONITOR MODE SENSE (DBH) [JVC-1]

  Returns the status data for the monitor display settings.

  TXD DBH
  RXD □□H □□H □□H □□H ····· □□H
  1st byte 2nd byte 3rd byte ····· 7th byte

MONITOR MODE SENSE Return Data

byte No.	bit No.	
1		Monitor Display Settings 1/11
	bit 7	Not defined (fixed at "0")
	bit 6	Not defined (fixed at "0")
	bit 5	Border color: 00: Black, 01: Light gray, 10: Gray, 11: Bright gray
	bit 4	
	bit 3	"1" output with VGA output at [ON].
	bit 2	"1" output with auto scandisk at [ON].
	bit 1	Alarm detection display: 00: OFF, 01: Fixed, 10: Sequential
	bit 0	
		Monitor Display Settings 2/7
2	bit 7	Not defined (fixed at "0")
	bit 6	Not defined (fixed at "0")
	bit 5	Not defined (fixed at "0")
	bit 4	Not defined (fixed at "0")
	bit 3	4-screen automatic switch setting: 0001: 1, 0010: 2, 0011: 3, 0100: 5, 0101: 10 (seconds)
	bit 2	
	bit 1	
	bit 0	
		Monitor Display Settings 3/7
3	bit 7	Automatic switch setting (camera 2): 0000: OFF, 0001: 1, 0010: 2, 0011: 3, 0100: 5, 0101: 10 (seconds)
	bit 6	
	bit 5	
	bit 4	
	bit 3	Automatic switch setting (camera 1): 0000: OFF, 0001: 1, 0010: 2, 0011: 3, 0100: 5, 0101: 10 (seconds)
	bit 2	
	bit 1	
	bit 0	
		Monitor Display Settings 4/7 to 6/7
4 to 6	bit7 to 0	Contents the same as 3BYTE (cameras 3 to 8)
		Monitor Display Settings 7/7
7	bit 7	Not defined (fixed at "0")
	bit 6	Not defined (fixed at "0")
	bit 5	Not defined (fixed at "0")
	bit 4	Not defined (fixed at "0")
	bit 3	Automatic switch setting (camera 9): 0000: OFF, 0001: 1, 0010: 2, 0011: 3, 0100: 5, 0101: 10 (seconds)
	bit 2	
	bit 1	
	bit 0	

- MOTION DETECT SENSE (DCH) [JVC-1]

  Returns the status data for the motion detection settings. (Current operating mode status. The status at the time of operations will be returned when in the timer mode.)

  TXD DCH
  RXD □□H □□H □□H □□H ····· □□H
  1st byte 2nd byte 3rd byte ····· 9th byte

MOTION DETECT SENSE Return Data

byte No.	bit No.	
1		Motion Detection Settings 1/9
	bit 7	Operation setting (camera 1): 00: OFF, 01: ON
	bit 6	
	bit 5	Detection sensitivity (camera 1): 00H: Standard, 01H: User, 02H: Entrance/Exit (high), 03H: Entrance/Exit (low), 04H: Aisle (high), 05H: Aisle (low), 06H: Register (high), 07H: Register (low), 08H: ATM (high), 09H: ATM (low), 0AH: Lobby (high), 0BH: Lobby (low), 0CH: Gate (high), 0DH: Gate (low), 0EH: Parking lot (high), 0FH: Parking lot (low), 10H: Low lighting (high), 11H: Low lighting (low), 12H: Elevator, 13H: Counter
	bit 4	
	bit 3	
	bit 2	
	bit 1	
	bit 0	
		Motion Detection Settings 2/9 to 9/9
2 to 9	bit7 to 0	Contents the same as 1BYTE (cameras 2 to 9)

- MONITOR OUT STATUS SENSE (DEH) [JVC-1]

  Returns the status data for monitor output.

  TXD DEH
  RXD □□H

7	6	5	4	3	2	1	0
0:Live 1:PLAY	Split-screen mode*			Camera number*			

* Split-screen mode

000: 9-screen, 001: 4-screen A, 010: 4-screen B,
011: 4-screen C, 101: 6-screen, 110: Single screen monitor

* Camera number

Displays the relevant camera number when a single-screen monitor is in use. (0 to 9) Displays the top left-hand camera number when split-screen monitors are in use.

- MAC SENSE (FCH) [JVC-1]

  Acquires the MAC address (6 bytes.)

  TXD FCH
  RXD □□H □□H □□H □□H □□H □□H
  1st byte 2nd byte 3rd byte 4th byte 5th byte 6th byte

3. Details of the Commands (continued)

3.5. Other Commands

- Data “0” to “9” (30H to 39H) [BASIC/JVC-1]
  Used for numeral input.

- ENTER (40H) [BASIC/JVC-1]
  This command is used as the input end mark when the transmission of all numerical commands has been completed.

- CLEAR ERROR (41H) [BASIC/JVC-1]
  Clears only the last numerical command entered (transmitted.) Also clears the error status.

- CLEAR (56H) [BASIC/JVC-1]
  Clears the current mode, and clears the error status. The system is ready to receive new commands after this command has been received.

- ACTIVE SENSE (DFH) [JVC-1]
  Returns the ACK response. (This is the command to check that the connected equipment is operating normally.)

- JVC TABLE 1 ON (F6H) [BASIC/JVC-1]
  The command to activate the JVC TABLE 1. JVC TABLE 1 is maintained until F7H is output once this has been set.

- BASIC TABLE ON (F7H) [BASIC/JVC-1]
  The command to set the BASIC TABLE to ON.

- REC/DUB REQUEST (FAH) [BASIC/JVC-1]
  This command must be sent before the REC command is transmitted.

- VTR/HDR INQ (FBH) [BASIC/JVC-1]
  Returns the ACK response. (This is the command to check that the connected equipment is the VR-509E.)

CAUTION

The only method of clearing the warning mode when an error occurs with the VR-509E is to switch the power supply OFF and then ON again.

Specifications

<General>

Video compression:	MPEG-2 (Conformity)
Capacity:	160 GB × 2
Interface:	RS-232C, SERIAL, LAN
Power supply:	220 V - 240 V to 50 Hz/60 Hz
Power consumption:	0.5 A
Allowable operating temperature:	5°C to 40°C
Allowable storage temperature:	-20°C to 60°C
Allowable operating humidity:	30% to 80 %
Mass:	Approx, 7.0 kg

<Video signal>

Video input:	9 lines (supports asynchronous input)
Video output:	9 lines (Through)
Video output × 3 lines (Front × 1, rear × 2)	
Line input:	1.0 V (p-p), 75Ω (BNC unbalanced)
Line output:	1.0 V (p-p), 75Ω (BNC unbalanced)
Number of effective pixels:	720 × 288 (HIGH-QUALITY)
:	360 × 288 (SMOOTH)

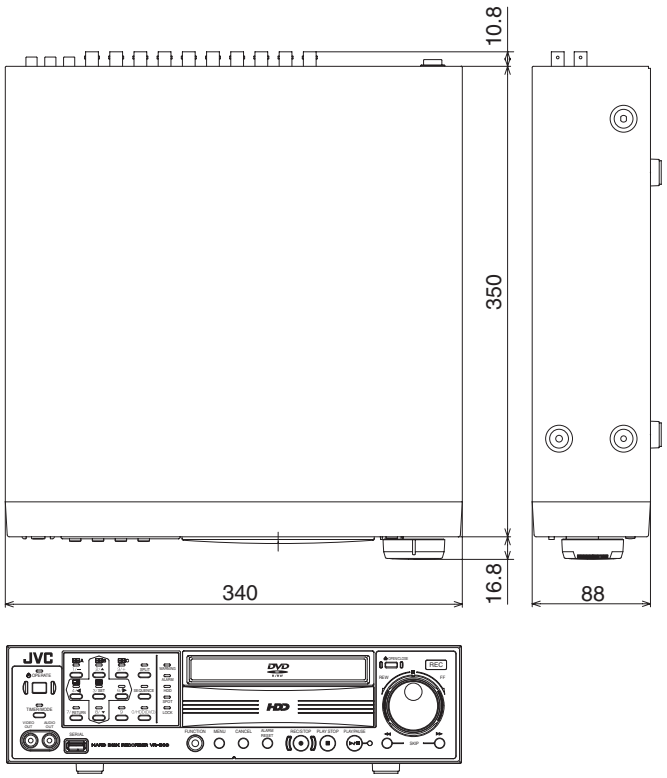
<Audio signal>

Audio input:	2 line
Audio output:	2 lines (Front × 1, rear × 1)
Line input level:	-8 dBs, 50 kΩ (Unbalanced)
Line output level:	-8 dBs, 1 kΩ (Unbalanced)
Frequency:	100 Hz to 10 kHz
Audio recording format:	PCM (8-bit 12 kHz sampling)

<Accessories>

Instructions	× 1
Power cord	× 2

<Appearance>



[unit: mm]

* Specifications and appearance of this unit are subject to change for improvement purposes without prior notice.

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VR-509E DIGITAL VIDEO RECORDER

JVC®

Printed in Japan
LLT0094-001A