

# Sanyo DSR - 300 Instruction Manual

Digital video recorder



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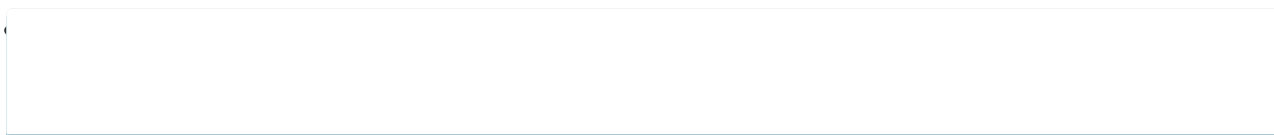
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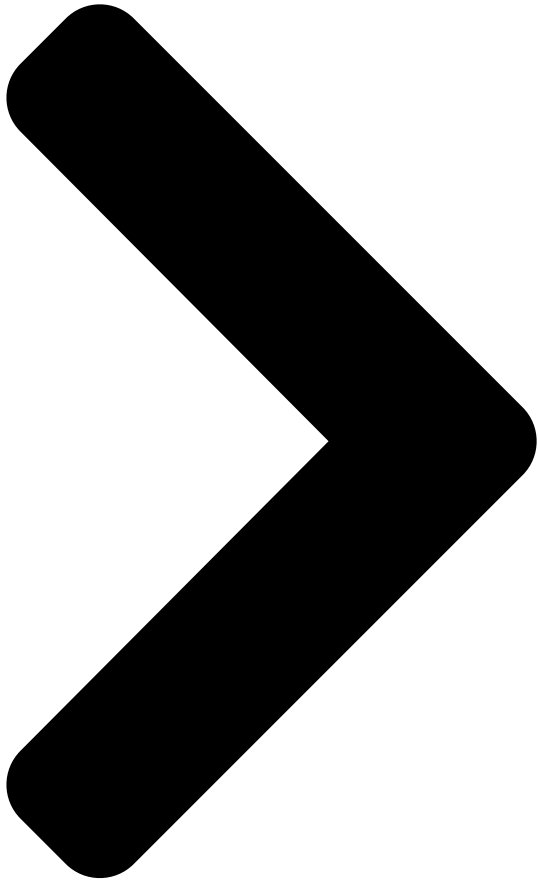


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# INSTRUCTION MANUAL



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Sanyo digital video recorder manual for remote operation by network connection  
dsr-3016, dsr-3009 (36 pages)

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Digital video recorder with multiplexer function (96 pages)

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With multiplexer function (110 pages)

### [DVR Sanyo DSR-3506 Service Manual](#)

Digital video recorder with multiplexer function (32 pages)

## Summary of Contents for Sanyo DSR - 300

### [Page 2: Declaration Of Conformity](#)

English Declaration of Conformity Model Number : DSR-300 Trade Name : SANYO Responsible party : SANYO FISHER COMPANY Address : 21605 Plummer Street, Chatsworth, California 91311 Telephone No. : (818) 998-7322 This device complies with Part 15 of the FCC Rules.

### [Page 3: Main Features](#)

Check that you have all the parts below. Power cord AC adapter \* Do not use the AC adapter with other equipment. Ferrite core (2) 1 pc.: For the DVR power cord (accessory) 1 pc.: For the

LAN connection cable (packaged together with the option RS-485/...

## [Page 4: Symbols Used In This Manual](#)

(→P. xx) indicates the page to be referred to. Copyright This manual and software are copyrighted by Sanyo Electric Co., Ltd. Brand and product names used in this manual are the trademarks or registered trademarks of their respective companies.

## [Page 5: Table Of Contents](#)

CONTENTS INTRODUCTION 1 BEFORE USE ...8 Notes on handling removable HDDs ...8 Conditions to avoid ...8 The hard disk and cooling fan are expendable items ...8 Installation conditions ...8 For important recordings ...8 Hard disk protection ...9 Care ...9 During extended disuse ...9 Backup battery ...9 MENU button ...9 AC adapter ...9...

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## [Page 9: Before Use](#)

BEFORE USE Notes on handling removable HDDs This unit uses removable hard disk drives (HDD). Be sure to observe the following points carefully when operating, setting-up and servicing the unit. Do not subject the unit to shocks or vibration. If the unit is subjected to shocks or vibration, it may damage the HDD or cause corruption of the data stored in the HDD.

## [Page 10: Hard Disk Protection](#)

30 days after the power plug is disconnected. When disposing of the digital video recorder, contact a Sanyo service centre for information on how to dispose of the lithium battery. MENU button The [MENU] button is disabled when the unit is connected to a PC.

## [Page 11: Replacing A Removable Hdd](#)

It is treated as a new HDD. The recorded contents will be initialized. About the HDD; Install an HDD provided by Sanyo. If an HDD supplied by a company other than Sanyo is used, Sanyo cannot be responsible for failures in performance or operation.

## [Page 12: Removal](#)

Correct operation cannot be guaranteed with HDDs not recorded to using a DSR-300. If you want to use a HDD that has been recorded on by a different DVR, be sure to initialize it before use. Even if the tray to which the HDD has been attached is connected directly to a PC, the playback of images will not be possible.

[Page 13](#) REPLACING A REMOVABLE HDD Pull the HDD tray out using the handle. Pulling the handle causes the HDD tray lock to be released. Pull the clasp, release the lock, and remove the cover. Remove the 4 screws, take the removable HDD out of the tray, and release the connector.

## [Page 14: Names And Functions Of Parts](#)

NAMES AND FUNCTIONS OF PARTS Front panel [STILL] button Pauses the screen image when pressed during playback. Pressing the button again restarts playback. [PLAY/STOP] button and indicator Plays back the normal image (indicator lights). When pressed during playback, stops playback. [REC/STOP] button and indicator Starts normal recording.



[Page 15](#) NAMES AND FUNCTIONS OF PARTS 17. [ ] button Used to move the cursor in menu screens up. Also used to change setting values. Used for frame advance (forward) and adjusting the CUE/ REVIEW speed. 18. [CUE/ENTER] button When pressed during playback, lets you fast-forward the image while watching it on-screen.

### [Page 16: Rear Panel](#)

NAMES AND FUNCTIONS OF PARTS Rear panel RS-232C terminal (when option board is installed) RS-485 terminal A (when option board is installed) RS-485 terminal B (when option board is installed) Do not connect the RS-485 A and RS-485 B connectors to a phone line.

### [Page 17: Installation And Connections](#)

RMN01, sold separately) to the wired remote control terminal. The DSR-300 will function as follows in response to VA- RMN01 key operations. VA-RMN01 VA-RMN01 key DVR operation MENU MENU ↓ SHIFT/SHIFT → TIMER/SEARCH ↓ REC/PLAY SPEED ↑ ↓ / ↑...

### [Page 18: Connecting A Multiplexer](#)

INSTALLATION AND CONNECTIONS Connecting a multiplexer Monitor (sold separately) Analog input Multiplexer (sold separately) Alarm output terminal Ground (C) Switch input terminal Making analog series connections Monitor (sold separately) CCTV camera (sold separately) RS232C DC IN ALARM NON-REC REMOTE COM IN RESET OUT OUT Amp (sold separately) Amp (sold separately) English...

### [Page 19: Operation](#)

If there is a problem at power ON or during operation, the type of problem is indicated by how rapidly the CHANGE DISK indicator flashes. Contact a Sanyo Authorized Service Centre if the CHANGE DISK indicator flashes. 4 flashes per second: The hard disk is checked automatically at power ON.

### [Page 20: Preparing For Use](#)

PREPARING FOR USE Operation display area Whenever the power is turned ON, the operation display area will be displayed at the top left of the monitor screen. This area indicates the date and time, the image quality, the recording rate, and other information needed for operation.

### [Page 21: Changing The Position Of The Operation Display Area](#)

You can check the recording areas of a set hard disk by selecting "3. RECORDING AREA SET" from the menu. When installing a hard disk that was used by another DVR, check the recording area settings. [B] Alarm recording area [C] Archive area [A] Normal recording area Hard disk's recording area...

### [Page 22: Setting The Language/Clock](#)

SETTING THE LANGUAGE/CLOCK This section describes how to set the language displayed on the monitor and how to set the digital video recorder's internal clock. [Settings] ( indicates default setting.) Item Setting ENGLISH Sets the language to English. (1)LANGUAGE FRANCAIS Sets the language to French. ESPAÑOL Sets the language to Spanish.

### [Page 23: Setting The Time](#)

SETTING THE LANGUAGE/CLOCK Setting the time (Default setting: 01-01-2004 THU 00:00:00) Be sure to set the correct date and time. The digital video recorder stores the times of recordings for use in operations such as playback and search/playback. Example: Setting May 20, 2004, 8:30 Press the [MENU] button.

### [Page 24: Normal Recording/Timer Recording](#)

NORMAL RECORDING/TIMER RECORDING [REC/STOP] button [TIMER] button Normal recording Follow the procedures below to record the monitored image in the normal recording area. Press the [REC/STOP] button. The REC/STOP indicator lights. " " appears on the screen (i.e., the recording symbol), and recording starts. Recording 05- 10- 04 symbol...

### [Page 25: Alarm And Pre-Alarm Recording](#)

ALARM AND PRE-ALARM RECORDING [EXIT/OSD] button Alarm recording Follow the procedures below to have the digital video recorder record an alarm image only when alarm input is

detected. Confirm that the cable of the device required for alarms is connected to the ALARM terminal. ( P. 16) When the motion sensor is set, an alarm image is recorded when a moving subject is detected.

### [Page 26: Pre-Alarm Recording](#)

ALARM AND PRE-ALARM RECORDING Pre-alarm recording Follow the procedures below to have the digital video recorder record an image from before detection of an alarm and the start of alarm recording. Set pre-alarm recording. Follow the procedures on P. 64 to set "8. ALARM REC MODE SET"...

### [Page 27: Normal Recording/Timer Recording Playback](#)

NORMAL RECORDING/TIMER RECORDING PLAYBACK Follow the procedures below to playback images stored in the normal recording area (by normal recording or timer recording). Normal recording area [PLAY/STOP] button ] button ] button ] button Playback Press the [PLAY/STOP] button. The PLAY/STOP indicator lights, and " " appears in the operation display area.

### [Page 28: Viewing Still Images](#)

NORMAL RECORDING/TIMER RECORDING PLAYBACK Viewing still images [STILL] button During playback, press the [STILL] button. " " appears in the operation display area and the image is still. The PLAY/STOP indicator flashes in green. Still symbol 05-10-04 10: 50: 00 EN To resume playback Press the [STILL] button.

### [Page 29: Playback With A Channel Specified For The Camera Image](#)

NORMAL RECORDING/TIMER RECORDING PLAYBACK Playback with a channel specified for the camera image If a multiplexer (sold separately) is connected to this unit and images are recorded from multiple cameras, you can specify the number (or channel) of the camera whose recording is to be played back using the following procedure.

### [Page 30: Searching For Recorded Images](#)

SEARCHING FOR RECORDED IMAGES Images stored in the alarm recording area or archive area can be located by searching and then played back. Five different search methods are available. Alarm recording area [SEARCH] button [ALARM] button Image to search for Search in <SEARCH>...

### [Page 31: Alarm Search](#)

SEARCHING FOR RECORDED IMAGES ALARM SEARCH Lets you search and play back all the alarm images stored in the alarm recording area. If pre-alarm images are being recorded, playback will start from immediately before the alarm. [SEARCH] button ] button [ALARM] button ] button Press the [SEARCH] button while the...

### [Page 32: Alarm Thumbnail Search](#)

SEARCHING FOR RECORDED IMAGES ALARM THUMBNAIL SEARCH All alarm images stored in the alarm recording area can be displayed as thumbnails. [SEARCH] button ] button Press the [SEARCH] button while the digital video recorder is recording or stopped. The <SEARCH> screen is displayed. Press the [ ] or [ ] button to select...

[Page 33](#) SEARCHING FOR RECORDED IMAGES Press the [ ] button. The <TIME/DATE SEARCH> screen is displayed. The cursor is positioned on the date and time item. (1) RECORDING TOP: Displays the date/time of the image recorded first. (2) RECORDING END: Displays the date/time of the image recorded last (latest image).

### [Page 34: Archive Area Search](#)

SEARCHING FOR RECORDED IMAGES ARCHIVE AREA SEARCH Follow the procedures below to playback images from the archive area. Press the [SEARCH] button while the digital video recorder is recording or stopped. The <SEARCH> screen is displayed. Press the [ ] or [ ] button to select "ARCHIVE AREA SEARCH".

[Page 35](#) SEARCHING FOR RECORDED IMAGES Press the [ ] or [ ] button to select the searching range, then press the [ ] button. (Example: Normal) The cursor moves to "CHANNEL". When "NO USE" is set for "MULTIPLEXER" ( P. 52) in "2.

[Page 36](#) SEARCHING FOR RECORDED IMAGES Press the [ ] button. The motion sensor setting screen is displayed. Motion sensors should be set at locations where movement is to be detected and viewed. See “Setting the motion sensor” ( P. 67) for details. Setting example Move the cursor to “EXIT”...

### [Page 37: Saving & Copying Recorded Images](#)

The application DVR Viewer will be needed in order to playback images and audio copied to a CompactFlash card on a PC. Version 1.4.7 of this application can be installed from the CD-ROM supplied with this digital video recorder.

[Page 38](#) SAVING & COPYING RECORDED IMAGES Example: Copying a specified 10-minute image Press the [COPY] button. The copy setting screen appears. The cursor moves to “COPY TO”. Press the [ ] button, then the [ ] button to set the copy destination to “ARCHIVE AREA”.

### [Page 39: Copying An Archive Area Image To A Compactflash Card Or Microdrive](#)

SAVING & COPYING RECORDED IMAGES Copying an archive area image to a CompactFlash card or Microdrive Copying to a Microdrive and to a CompactFlash card are carried out in the same way. [COPY] button Insert the CompactFlash card. Insertion method (1) Open the cover.

### [Page 40: Recording Area In Compactflash Cards](#)

SANYO 02032101 IMG00001 IMG00002 IMG00003 INDEX.HTM (1) A folder is created with the name SANYO inside the root directory. (2) Within this, folders are created based on the date of copied images. (3) Within each date folder, sub-directories are created in sequence starting with IMG00001.

### [Page 41: Saving Menu Settings](#)

SAVING MENU SETTINGS Use the following procedure to save menu settings on a CompactFlash card or to load settings from a CompactFlash card back into the unit. These functions make it easy to use the same settings on a number of different digital video recorders.

[Page 42](#) SAVING MENU SETTINGS Press the [ ] or [ ] button to select “YES”, then press the [ ] button. (1) The loading process begins. (2) When this process has been completed, “LOADING FINISHED!!” is displayed and the digital video recorder is restarted.

### [Page 43: Menu Configuration And Operations](#)

MENU CONFIGURATION AND OPERATIONS This section describes the menu configuration, and which menu item to select for each operation. Displaying menu screens and setting screens Press the [MENU] button to display the menu screen. This unit uses two different types of menu screen. <MAIN MENU 1>...

### [Page 44: To Restore Menu Setting Items To Their Default Values](#)

MENU CONFIGURATION AND OPERATIONS Entering settings in sub-menu screens Use the [ ], [ ], [ ] and [ ] buttons to change settings in setting screens. (1) To move the cursor up/down Press the [ ] or [ ] button. (2) To move the cursor right or left to a setting item Press the [ ] or [ ] button.

### [Page 45: Overview Of](#)

## Sub-Menus

MENU CONFIGURATION AND OPERATIONS (4)  
RECORDING CONDITIONS SET ( P. 56) Used to make settings when multiple units are connected together. In addition, this sub-menu also allows you to indicate whether recording is to be stopped or continued in overwrite mode

when the available space for recorded data has been filled during recording.

[Page 46](#) MENU CONFIGURATION AND OPERATIONS (4) SECURITY LOCK SET ( P. 72) Lets you set passwords to prevent unauthorized users from operating the digital video recorder. (5) NETWORK SET ( P. 76) Lets you make settings when connecting with PCs via a local-area network (LAN).

[Page 47: Table Of Recording Rate And Times](#)

MENU CONFIGURATION AND OPERATIONS  
Table of recording rate and times This unit's recording time can be changed by modifying the recording rate and the recording picture quality. The following table provides reference values for picture quality and recording rate in a situation where images are field recorded and frame recorded to the normal recording area on this unit's removable HDD.

[Page 48](#) MENU CONFIGURATION AND OPERATIONS When recording with a 160-GB hard disk at 100% capacity Field recording  
Recording rate BASIC (fields per second)  
15kB 60.00 30.00 20.00 127H 15.00 170H  
10.00 255H 7.50 340H 6.00 425H 5.00 510H  
4.29 595H 3.75 680H 3.33 765H...

[Page 49](#) MENU CONFIGURATION AND OPERATIONS Recording time This table shows the recording times for pre-alarm recording. Refer to this table when setting pre-alarm recording. ( P. 66) Recording rate (fields per second) (5s) (10s) 20.00 15.00 10.00 7.50 6.00 5.00 4.29 3.75 3.33 3.00...

[Page 50: Language/Clock Set](#)

LANGUAGE/CLOCK SET <MAIN MENU 1>

You can perform the following functions:  
Change the language used to display on-screen information.\* Set the date and time displayed on the normal screen.\* Set the clock to adjust automatically for daylight savings time. Set all the devices to the same time automatically when multiple devices are connected.

[Page 51: Ext. Clock Set> Settings](#)

CLOCK IN terminal on the second digital video recorder. 1st DVR 2nd DVR To 3rd DVR Do not use a loop connection. Press the [ ] or [ ] the cursor to "ADJUST. TIME".

[Page 52](#) LANGUAGE/CLOCK SET Press the [ ] button. "01" flashes. Press the [ ] or [ ] button to select the desired time, then press the [ ] button. Set the time Press the [EXIT/OSD] button. The display returns to the normal screen. Repeat procedures 2 to 5 to set the time on the second digital video recorder.

[Page 53: Video Input Set](#)

[Settings] ( indicates default setting.)  
Setting NO USE No multiplexer will be used.  
SANYO A Sanyo multiplexer will be used.  
OTHERS1 A Sony multiplexer will be used.  
OTHERS2 A Robot or DM multiplexer will be used.  
OTHERS3 Other multiplexers Press the [EXIT/OSD] button.

[Page 54: Recording Area Set](#)

RECORDING AREA SET <MAIN MENU 1>

Displaying the recording area Follow the procedures below to confirm all recording

areas on the hard disk and the allocation for each recording area. Press the [MENU] button. The <MAIN MENU 1> screen appears. Select "3.

[Page 55: Changing Recording Areas](#)

RECORDING AREA SET Changing recording areas Recording area allocations The highest possible allocation for the normal recording area and the alarm recording area is 99%. The allocation for the archive area cannot be set manually. This allocation will be automatically set to at least 1%.

[Page 56: Setting Overwrite Permission](#)

RECORDING AREA SET Setting overwrite permission By default, when all of the space in the hard disk's normal recording area and alarm recording area has been used up, repetitive overwriting is automatically started (resulting in the older data being replaced). However, it may be desirable to prevent overwriting in such a case when recorded images are to be checked or edited.

[Page 57: Recording Conditions Set](#)

[ select "ON", and press the [ ] button. The cursor moves to "OVERWRITE" for the normal recording area. The second DVR can perform recording even when TIMER STANDBY mode has been activated. ] button Description ] or [...

[Page 58: Setting Normal Recording Area Overwriting And Remaining Capacity On The Operation Display Area](#)

RECORDING CONDITIONS SET Setting normal recording area overwriting and remaining capacity on the operation display

area Settings can be made to indicate whether overwriting is to be performed (deleting old images) recording is to be stopped when any of the hard disk's recording areas become full.

[Page 59: Setting Auto Delete](#)

RECORDING CONDITIONS SET When the normal recording area or the alarm recording area become full Set the "NORMAL RECORDING AREA" and/or the "ALARM RECORDING AREA" on the <RECORDING AREA SET> screen again. ( P. 55) Setting AUTO DELETE You can set a storage period for recorded data as described below.

[Page 60: Normal Rec Mode Set](#)

NORMAL REC MODE SET <MAIN MENU 1> Follow the procedures below to select the recording picture quality, recording method (i.e., frame or field), audio recording, and recording rate for the normal recording area. Press the [MENU] button. The <MAIN MENU 1> screen appears. Select "5.

[Page 61: Timer Set](#)

TIMER SET <MAIN MENU 1> You can set recording start/stop times using the timer function. Timer setting items You can set times at which to start and stop recording on each specified day of the week in addition to the corresponding recording rate.

[Page 62: To Cancel All Set Timer Reservations](#)

TIMER SET Press the [ ] or [ ] button to change "SUN" to "DLY". If "DLY" is set for any row, timer recording on Sundays will



also be carried out in accordance with that row's settings. In other words, "DLY" includes Sundays and is given priority over other settings.

[Page 63: Timer Reservations Spanning More Than 24 Hours](#)

**TIMER SET** Timer reservations spanning more than 24 hours Follow the procedures below to set timer recordings spanning more than 24 hours. These settings are made using lines 7 (default: "SAT") and 8 (default: "DLY") of the <TIMER SET> screen. Example: Timer recording from 10:30 on Monday to 20:30 on Wednesday...

[Page 64: Holiday Set](#)

**HOLIDAY SET <MAIN MENU 1>** You can set specific dates as holidays to have the operation for Sunday used on those days also. Dates such as national holidays and company off days should be set as holidays when you want those dates to have the same security as Sundays.

[Page 65: Alarm Rec Mode Set](#)

**ALARM REC MODE SET <MAIN MENU 1>** Setting alarm recording Follow the procedures below to select the recording picture quality, recording method (i.e., frame or field), audio recording, and recording rate for the alarm recording area. Press the [MENU] button. The <MAIN MENU 1>...

[Page 66](#) **ALARM REC MODE SET [Settings]** ( indicates default setting.) Setting  
Description Audio recording is not carried out Audio recording is carried out [Setting conditions] This can be set whenever the



recording rate is 10.00 FPS or more for field recording, or 5.00 FPS or more for frame recording.

[Page 67: Setting Pre-Alarm Recording](#)

ALARM REC MODE SET Setting pre-alarm recording Move the cursor to “PRE-ALARM RECORDING” and press the [ ] button, then press the [ ] or [ ] button to change the setting. [Settings] ( indicates default setting.) Setting Description Pre-alarm recording is not carried out Pre-alarm recording is carried out Move the cursor to “REC RATE” ...

[Page 68: Setting The Motion Sensor](#)

ALARM REC MODE SET This unit’s motion sensors cannot be used when a multiplexer is connected. In such a case, please use the multiplexer’s motion sensors. When using the multiplexer’s motion sensors, connect the alarm output on the multiplexer to this unit’s alarm input.

[Page 69: Display/Video Loss Set](#)

DISPLAY/VIDEO LOSS SET <MAIN MENU 2> The <DISPLAY SET> screen lets you turn off the display of the date, time, or other information in the operation display area on the screen. Use this screen to make settings as needed. <DISPLAY SET> and <VIDEO LOSS SET>...

[Page 70: Rs-232C/Rs-485 Set](#)

RS-232C/RS-485 SET (when optional interface board is installed) <MAIN MENU 2> Settings for RS-232C and RS-485 This section describes the settings to be made for communicating using an RS-232C or

RS-485 cable. (A separately-sold option board will be required in such a case.) Press the [MENU] button twice.

[Page 71](#) RS-232C/RS-485 SET (when optional interface board is installed) When RS-485 is selected Connect the digital video recorder's RS-485 (A, B) control terminals in series to the system controller, multiplexer, digital video recorder, or similar device. RS-485 RS-485 Select "RS-485" and press the [ ] button.

[Page 72: Buzzer Set](#)

BUZZER SET <MAIN MENU 2> The <BUZZER SET> screen lets you set a warning buzzer to sound when events occur such as alarms being generated or the remaining hard disk space reaching zero. Use this screen to make settings as needed. <BUZZER SET>...

[Page 73: Security Lock Set](#)

SECURITY LOCK SET <MAIN MENU 2> You can set passwords that restrict use of the digital video recorder to administrators and designated users, thus preventing unauthorized operation. When the security lock is set, a buzzer sounds when an unauthorized user presses any of the digital video recorder's operation buttons.

[Page 74: Setting Passwords](#)

SECURITY LOCK SET Setting passwords [MENU] button ] button Passwords can be between 4 and 8 alphanumeric characters. Characters that can be entered in passwords: 0 to 9, A to Z Example: Setting "123456AB" as a password Press the

[MENU] button twice. The <MAIN MENU 2>...

[Page 75: Setting The User Password](#)

SECURITY LOCK SET Setting the user password Example: Setting "AB123456"  
Carry out procedures 1 and 2 from P. 73. Press the [ ] and [ ] buttons to move the cursor to "USER". Press the [ ] button. The first password entry bar "-" flashes. Example: A Press the [ ] and [...

[Page 76: Setting The Security Lock](#)

SECURITY LOCK SET Setting the security lock [MENU] button ] button [EXIT/OSD] button With the normal monitoring screen displayed, press the [ about 3 seconds. A confirmation tone sounds and the security lock is set. To check the security lock, press any button.

[Page 77: Network Set](#)

NETWORK SET (when optional interface board is installed) You can make digital video recorder menu settings and monitor images from a PC via a network (LAN). To do this, a VZU-COM300 option board (sold separately) must be installed. Making network connections Connecting to a PC directly (without using an Ethernet hub) 1 to 16...

[Page 78: Making Network Settings](#)

NETWORK SET (when optional interface board is installed) <MAIN MENU 2> Making network settings Press the [MENU] button twice. The <MAIN MENU 2> screen appears. Press the [ ] or [ ] button to select "5.

NETWORK SET”, then press the [ ] button.

[Page 79: Password Setting](#)

NETWORK SET (when optional interface board is installed) Move the cursor to “GATEWAY” and press the [ ] button, then press the ], [ ], [ ], and [ ] buttons to change the setting. (Example: 0.0.0.0) Move the cursor to “PORT” and press the [ ] button, then press the [ and [ ] buttons to change the setting.

[Page 80: Hdd Set](#)

HDD SET <MAIN MENU 2> This section describes how to initialize the hard disk. Initializing the hard disk Press the [MENU] button twice. The <MAIN MENU 2> screen appears. Press the [ ] or [ ] button to select “6. HDD SET” and press the [ ] button. The <HDD SET>...

[Page 81: Power Failure/Used Time](#)

POWER FAILURE/USED TIME <MAIN MENU 2> You can check the date/time of power failures and the amount of hard disk operation time. Press the [MENU] button twice. The <MAIN MENU 2> screen is displayed. Press the [ ] or [ ] button to select “7.

[Page 82](#) To set the data transmission speed, address and termination switch, see “Settings for RS-232C and RS- 485” ( P. 69). Communication protocol A proprietary Sanyo protocol (SSP: Security Serial Protocol) is used. Use of a Sanyo system controller is recommended. Connector B signal Not used Not used...

[Page 83](#) INTERFACE SPECIFICATIONS (when optional interface board is installed)  
Connection Sanyo digital video recorders support both straight type and crossed type connection cables. When using a straight type connection cable, connect the RS-485 connector's pin A to the pin A socket, or pin B to the pin B socket.

[Page 84](#) INTERFACE SPECIFICATIONS (when optional interface board is installed)  
Commands The received data/transmitted data (RXD/TXD) signal diagrams below are given from the point of view of the recorder. Some commands consist only of a single byte. The RXD/TXD signal diagrams for single-byte commands are as shown below.

[Page 85](#) INTERFACE SPECIFICATIONS (when optional interface board is installed)  
Commands for setting the recorder CLOCK ADJUST (E0H) If sent with the recorder stopped, resets the minutes and seconds of the clock display to 00. For example, if sent between 13:30:00 and 14:29:59, sets the clock to 14:00:00.

[Page 86](#) INTERFACE SPECIFICATIONS (when optional interface board is installed) Bit assignments in STATUS SENSE (D7H) data bytes  
Byte 1 00 : REC STOP 01 : NORMAL REC 10 : TIMER REC 11 : TIMER ST-BY NORMAL REC FULL 00 : STOP 01 : PRE REC 10 : ALARM REC 11 : Reserved...

[Page 87](#) INTERFACE SPECIFICATIONS (when optional interface board is installed)  
Commands (RS-485 only) GROUP SET (6CH)

Sent when grouping (appending group numbers). Send the 2-byte group number after confirming the ACK (0AH) signal has been sent from the recorder. Example: Setting group number 5 GROUP CHECK (6DH) Returns the group number.

[Page 88](#) INTERFACE SPECIFICATIONS (when optional interface board is installed) Return codes When the recorder is operated with the RS-485 interface in use, it sends a 2-byte code indicating its setting. First byte: Header (BEH or BFH) Second byte: Mode change information Bit assignments in second byte When first byte is BFH Bits 0, 1, 2, and 3 indicate the status.

[Page 89](#) If this unit has no function corresponding to a command, no action will be taken when such a command is received. Left digit Right digit Left digit Right digit CHANNEL COPY OSD/EXIT Note: The command is only used during RS-485 control. T/D SEARCH PLAY SEARCH (DVR) PLAY/STOP STILL T/D SEARCH ALARM ALARM STATUS REC STOP LOG1 TIMER ON/OFF MENU...

[Page 91](#) Manual for Remote Operation by Network Connection...

[Page 92](#) Users with user level ID1: 3 PCs Users with user level ID2 or ID3: 1 PC Control of the DVR can be freely switched from the unit itself to the PC and vice versa. Note that operation of the unit will not be affected by simply connecting a cable.

[Page 93](#) NETWORK CONTROL FUNCTION (when

optional interface board is installed)  
Minimum system requirements Operating system: Windows 98/98SE/Me/2000/XP  
Browser: Internet Explorer Ver. 5.0 or later  
Video: 65,000 colors, resolution 800 x 600 dpi or higher  
Audio playback requirements DirectX or compatible sound card  
Speaker  
For Windows XP The following example applies to Windows XP.

[Page 94](#) Up to four PCs can be connected simultaneously to a single DVR. Note, however, that users with user level ID2 or ID3 are restricted to use of one PC. When four PCs are connected and access is made from...

[Page 95](#) Connection will not be possible when a menu screen is being displayed on the DVR unit or when playback-related operations are being carried out. In such a case, cancel the menu screen selection or stop the playback operation before attempting to remake connection.

[Page 96: Network Operation](#)

Access from the PC will not be permitted for a period of 10 seconds after access has been canceled. Display on the PC When disconnected from the network When access cannot be made to a connected DVR When accessing a DVR that is already connected to another 4 PCs...

[Page 97: Operation Panel Functions And Restrictions](#)

OPERATION PANEL FUNCTIONS AND RESTRICTIONS (when optional interface board is installed)  
Channel and screen selection buttons  
Channel selection (ID2/3)

When a multiplexer is connected, this button selects the channel for the monitoring camera (--, 1, 2, 3--, or 16). This button sets the channel corresponding to the number selected using 1.

[Page 98](#) **SETTINGS** (when optional interface board is installed) Before using the unit, settings should be made for recording conditions, installation environment, and other similar factors. The corresponding menu items are displayed in a two-level structure comprising main menus and sub-menus. For more details regarding setting methods, see “2. MENU-SPECIFIC SETTINGS” ...

[Page 99: Menu Structure](#)

**SETTINGS** (when optional interface board is installed) Menu structure Main menu 1. CLOCK SET 2. DAYLIGHT SAVING/ EXT. CLOCK SET 3. VIDEO INPUT SET 4. RECORDING AREA SET 5. RECORDING CONDITIONS SET Recording conditions 6. NORMAL REC MODE 7. TIMER SET 8.

[Page 100: Clock Set](#)

**MENU-SPECIFIC SETTINGS** (when optional interface board is installed) 1. CLOCK SET Set the unit's time and date as described below. Select the “Month/Day/Year Hour/Minutes” field. The day of the week will be set automatically based on the date. Click [SET]. The current time is set.

[Page 101: Video Input Set](#)

**OTHERS3** multiplexer that has not been manufactured by Sanyo, Sony, DM, or Robot. When a Sanyo, Sony, DM, Robot



multiplexer or any other multiplexer capable of decoding channel information is connected, it will be possible to specify channel numbers for playback. For details regarding the playback method, see “Playing back recorded images” ...

[Page 102: Recording Area Set](#)

MENU-SPECIFIC SETTINGS (when optional interface board is installed) 4. RECORDING AREA SET The unit's hard disk is separated into three independent recording areas. Furthermore, five different recording modes can be used for these three areas. The memory capacity for each area is allocated as a percentage. (Setting units: 1%)  
Recording area Recording mode Normal...

[Page 103: Recording Conditions Set](#)

MENU-SPECIFIC SETTINGS (when optional interface board is installed) 5. RECORDING CONDITIONS SET Set the permission for overwriting to recording areas or the remaining-space warning level as described below. Setting overwriting permission for the normal recording area When the normal recording area has been filled with data, this setting dictates whether recording will be stopped or continued by overwriting the recorded images currently stored on the hard disk.

[Page 104: Normal Rec Mode Set](#)

MENU-SPECIFIC SETTINGS (when optional interface board is installed) 6. NORMAL REC MODE SET Set conditions for normal recording and timer recording as described below. Setting the picture quality for recording Set the picture quality for

recording to the normal recording area as follows.

[Page 105: Timer Set](#)

MENU-SPECIFIC SETTINGS (when optional interface board is installed) 7. TIMER SET  
Set timer operation duration and timer recording conditions on a day-specific basis as shown below. Setting timer recording conditions for different days of the week. (1) WEEK These fields specify the days of the week for timer recording.

[Page 106: Holiday Set](#)

MENU-SPECIFIC SETTINGS (when optional interface board is installed) 8. HOLIDAY SET  
Set specific days as holidays using the procedure described below. When a day is specified as a holiday, timer recording for that day will be carried out as if it were a Sunday. Dates such as national holidays and company off days should be set as holidays when you want those dates to have the same security as Sundays.

[Page 107](#) MENU-SPECIFIC SETTINGS (when optional interface board is installed) Setting audio recording Audio can be recorded together with images when performing alarm recording. Note, however, that since this audio data will also be stored in the alarm recording area, the recording time for this area will be reduced. Select "AUDIO RECORDING".

[Page 108](#) MENU-SPECIFIC SETTINGS (when optional interface board is installed) Setting pre-alarm recording Set the recording conditions to be used for pre-alarm

recording as described below. ( P. 112)  
Select “ON” or “OFF” using “PRE- ALARM RECORDING”. [Settings] Setting Description Performs pre-alarm recording. Does not perform pre-alarm recording.

[Page 109](#) MENU-SPECIFIC SETTINGS (when optional interface board is installed) Setting motion sensors You can specify the position of motion sensors on screen as described below. Alarm images are recorded when a moving subject is detected at the specified position. 12 Setting example Set the motion sensor level.

[Page 110: Buzzer Set](#)

Create a folder named BUZZER in the PC’s root directory, and save the sound file to use as the buzzer tone as C:\BUZZER\BUZZER.WAV. When a PC-monitored DVR generates an alarm, the PC also sounds a buzzer, using the saved sound file. Item...

[Page 111](#) MENU-SPECIFIC SETTINGS (when optional interface board is installed) 13. NETWORK SET Network settings must be made in advance on the unit whenever it is to be controlled via a network. Once this has been done, settings can then be changed from the controlling PC.

[Page 112: Power Failure/Used Time](#)

MENU-SPECIFIC SETTINGS (when optional interface board is installed) 14. HDD SET This screen displays the total capacity of the hard disk. (1) Hard disk capacity Displays the total capacity of the hard disk. 15. POWER FAILURE/USED TIME Check the

date and time of power failures and the amount of hard disk usage as described below.

[Page 113: Recording Images](#)

RECORDING IMAGES (when optional interface board is installed) This section will describe the way in which monitored images and alarm images can be stored on the unit's internal hard disk. Before any of these operations can be carried out, it will be necessary to make menu settings to match the installation environment.

[Page 114: Watching Images](#)

WATCHING IMAGES (when optional interface board is installed) Monitored live images and recorded images can be viewed freely and whenever so required. Note that switching to live or playback images, modifying the screen display, and other similar operations have absolutely no effect on timer recording and alarm recording.

[Page 115: Specifying The Channel \(Camera Number\)](#)

WATCHING IMAGES (when optional interface board is installed) Specifying the channel (camera number) When using multiple cameras and a multiplexer that can decode channel information (camera Nos.), you can specify the channel No. of the monitoring camera for monitor display. Select the channel.

[Page 116: Adjusting The Image And Audio](#)

WATCHING IMAGES (when optional interface board is installed) Live mode image Adjusting the image and audio The images displayed on screen can be adjusted in a

number of ways. To make an adjustment, select the adjustment value from the menu and then click [SET]. (1) READ INTERVAL (Default setting: 1) This item allows you to select one of five image display speeds.

[Page 117: Settings For Downloading Live Images](#)

WATCHING IMAGES (when optional interface board is installed) (8) NORMAL RECORDING MODE This item displays the current condition for normal recording. STOP RECORDING TIMER STANDBY TIMER RECORDING AREA FULL (in normal recording area) (9) ALARM RECORDING MODE This item displays the current condition for alarm recording.

[Page 118](#) WATCHING IMAGES (when optional interface board is installed) Click [BROWSE]. A dialog box for selecting save location will be displayed, and a suitable location should be set. It is also acceptable to input a location for saving directly into "DESTINATION FOLDER". Click [OK].

[Page 119: Search Mode](#)

SEARCH MODE (when optional interface board is installed) Images stored in the recording areas can be searched and played back in search mode. Furthermore, five different search methods are available for doing so. Basic operation In live mode (When playback is stopped), click the button on the operation panel.

[Page 120: Operations In Search Modes \(When Optional Interface Board Is Installed\)](#)

OPERATIONS IN SEARCH MODES (when optional interface board is installed) 1.

**ALARM SEARCH** In alarm search mode, images recorded in the alarm recording area are presented as a list of alarm numbers. Accordingly, alarm images from the recording list can be searched and played back.

[Page 121: Time/Date Search](#)

**OPERATIONS IN SEARCH MODES** (when optional interface board is installed) 3.

**TIME/DATE SEARCH** In date/time search mode, images from the alarm recording area can be played back by specifying the corresponding date and time. (1)

**RECORDING TOP:** Displays the date and time of the oldest recording (2)

**RECORDING END:** Displays the date and time of the newest recording...

[Page 122: Motion Detection Search](#)

**OPERATIONS IN SEARCH MODES** (when optional interface board is installed) 5.

**MOTION DETECTION SEARCH** By setting images recorded in the hard disk's normal recording area or alarm recording area to the motion sensor, variations from these images as a result of the presence of an intruder or the like can be detected, and the corresponding images can be played back.

[Page 123: Saving Recorded Images \(When Optional Interface Board Is Installed\)](#)

In certain cases where network-busy is detected as a result of hardware conditions, the network may be forcibly disconnected in order to protect DVR recording operations. Furthermore, the network will be forcibly disconnected in response to a command to

send a...

[Page 124: Downloading To A Pc](#)

SAVING RECORDED IMAGES (when optional interface board is installed) Downloading to a PC Use the following procedure to download recorded images to a PC. (1) Recording date/time: The recording date and time for the image currently being played back (2) PLAYBACK AREA: The area in which the image currently being played back is recorded NORMAL...

[Page 125: Image Viewer Screen](#)

SAVING RECORDED IMAGES (when optional interface board is installed) \* Image viewer screen This screen allows you to check images that have been downloaded. (10) (14) (15) (1) [TOP] Displays the first image. (2) [PREV.] Moves to the previous image. (3) [R.PLAY] Starts reverse playback.

[Page 126: Dvr Viewer](#)

DVR VIEWER (when optional interface board is installed) The DVR Viewer is a program designed specifically for DVRs of all series. It can be used to play back image and sound data that has been copied onto media such as computer hard disk drives, CompactFlash cards and CD-Rs.

[Page 127: Opening And Closing Dvr Viewer](#)

→ [DVR Viewer] in the sequence to start the program. When DVR Viewer starts up, the following default window appears. If you create a shortcut icon for DVR Viewer on the desktop, you can open DVR Viewer quickly by double- clicking the shortcut icon.

#### [Page 128: Opening Files](#)

(2) Corresponds to the [Print (P)] command in the [File (F)] menu. (3) Corresponds to the [Help (H)] command. Opening files  
When DVR Viewer is opened, you can open files to be played back by the following procedure. Click [Open (O)] in the [File (F)] menu. Alternatively, click the icon on the toolbar.

#### [Page 129: Viewing Images](#)

DVR VIEWER (when optional interface board is installed) Viewing images  
When image files are opened, the images that have been loaded appear. The display window consists of a main window and a thumbnail window, and you can use various operations in these windows such as a slideshow.

[Page 130](#) DVR VIEWER (when optional interface board is installed) (3) Control panel This is used for playback operations in the main window and to adjust the images. (10) (11)  
(1) [TOP] Moves to the start of a slideshow.  
(2) [PREV] Moves to the previous image in a slideshow regardless of the setting for “(8) SKIP”.

#### [Page 131: Printing Images](#)

DVR VIEWER (when optional interface board is installed) Printing images  
Specified images can be printed as full images together with date and time information. To print the image in the main window Select [Print (P)] from the [File (F)] menu, or click the icon on the toolbar.

#### [Page 132: Saving Images](#)

DVR VIEWER (when optional interface board



is installed) Saving images In the case of images on a CD-R, the control panel includes buttons that can be used for saving images, so that images can be saved on another storage medium as described below.

[Page 133](#) SPECIFICATIONS Specifications  
Television system Picture resolution  
Compression Picture quality Recording type  
Recording rate Recording areas Playback  
Date/time search Alarm search Search  
mode Alarm thumbnail search Archive area  
search Motion detection search Menu  
language Clock settings Video input  
terminal Video output terminal Video loop  
output terminal Audio input terminal Audio  
output terminal...

[Page 134](#) SPECIFICATIONS Dimensions Units:  
mm Front Side English...

[Page 135](#) DSR-300 DIGITAL VIDEO RECORDER  
WARRANTY In order to obtain warranty  
service, the product must be delivered to  
and picked up from an Authorized Sanyo  
Service Center at the user's expense, unless  
specifically stated otherwise in this  
warranty. The names and addresses of  
Authorized Sanyo Service Centers may be  
obtained by calling the toll-free number  
listed below.