



Contender Series

CE-DVR4

CE-DVR8

CE-DVR16



Digital Video Recorder User's Manual

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Important Safeguards

	WARNING RISK OF ELECTRIC SHOCK DO NOT OPEN!	
WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

COMPLIANCE NOTICE OF FCC:

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE, IN WHICH CASE USERS WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE.

CAUTION: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS OF DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

The information in this manual is believed to be accurate as of the date of publication. The information contained herein is subject to change without notice. Revisions or new editions to this publication may be issued to incorporate such changes.

Important Safeguards

1. Read Instructions All the safety and operating instructions should be read before the appliance is operated. 2. Retain Instructions The safety and operating instructions should be retained for future reference. 3. Cleaning Unplug this equipment from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning. 4. Attachments Never add any attachments and/or equipment without the approval of The manufacturer as such additions may result in the risk of fire, electric shock or other personal injury. 5. Water and/or Moisture Do not use this equipment near water or in contact with water. 6. Accessories Do not place this equipment on an unstable cart, stand or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer. 7. Power Sources This equipment should be operated only from the type of power source Indicated on the marking label. If you are not sure of the type of power, please consult your equipment dealer or local power company. 8. Power Cords Operator or installer must remove power and TNT connections before handling the equipment. 9. Lightning For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges. 10. Overloading Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock. 11. Objects and Liquids Never push objects of any kind through openings of this equipment as They may touch dangerous voltage points or short out parts that could Result in a fire or electric shock. Never spill liquid of any kind on the Equipment. 12. Servicing Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.	13. Damage requiring Service Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions: A. When the power-supply cord or the plug has been damaged. B. If liquid is spilled, or objects have fallen into the equipment. C. If the equipment has been exposed to rain or water. D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation. E. If the equipment has been dropped, or the cabinet damaged. F. When the equipment exhibits a distinct change in performance — this indicates a need for service. 14. Replacement Parts When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards. 15. Safety Check Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition. 16. Field Installation This installation should be made by a qualified service person and should conform to all local codes. 17. Correct Batteries Warning: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions. 18. Tmra A manufacturer's maximum recommended ambient temperature (Tmra) for the equipment must be specified so that the customer and installer may determine a suitable maximum operating environment for the equipment. 19. Elevated Operating Ambient Temperature If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra). 20. Reduced Air Flow Installation of the equipment in the rack should be such that the amount of airflow required for safe operation of the equipment is not compromised. 21. Mechanical Loading Mounting of the equipment in the rack should be such that a hazardous condition is not caused by uneven mechanical loading. 22. Circuit Overloading Consideration should be given to connection of the equipment to supply circuit and the effect that overloading of circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern. 23. Reliable Earthing (Grounding) Reliable grounding of rack mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).
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Chapter I – Installation

1.1 Connecting the Video Source

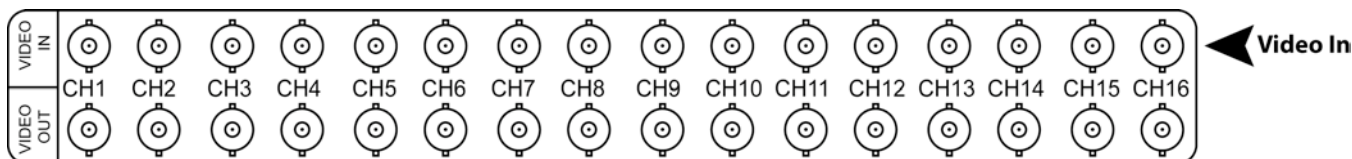


Figure 1 — Video input connectors.

Connect the coaxial cables from the video sources to the BNC Video In connectors.

1.2 Connecting the Loop Through Video

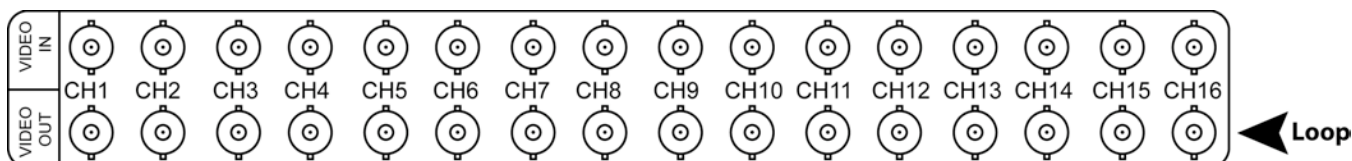


Figure 2 — Video Loop Through connectors.

If you would like to connect your video source to another device, you can use the Loop BNC connectors.

NOTE: The Loop BNC connectors are auto terminated. Do NOT connect a cable to the Loop BNC unless it is connected to another terminated device because it will cause poor quality video.

1.3 Connecting the Monitor

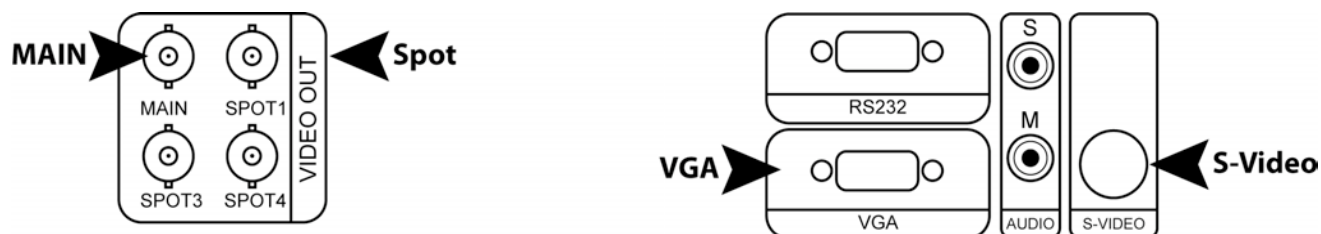


Figure 3 — Video Out connectors.

Connect the monitor to Main, VGA, or S-Video connector.
Connect the spot monitor to the SPOT connector if required.

1.4 Connecting Alarms

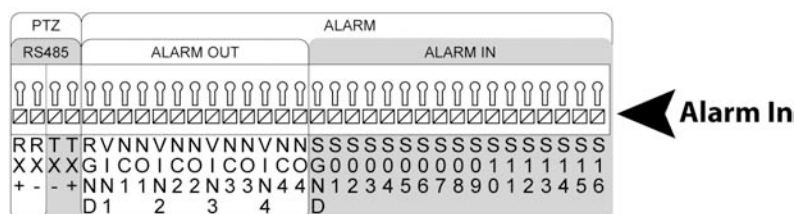


Figure 4 — Alarm Input connector strips.

NOTE: To make connections on the Alarm Connector Strip, press and hold the button and insert the wire in the hole above the button. After releasing the button, tug gently on the wire to make certain it is connected. To disconnect a wire, press and hold the button below the wire and pull out the wire.

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1.4 Connecting Alarms (continued)

You can use external devices to signal the DVR to react to events.

Mechanical or electrical switches can be wired to the AI (Alarm In) and GND (Ground) connectors. The threshold voltage is 4.3V and should be stable at least 0.5 seconds to be detected. See 3.4 *Alarm Type* for configuring alarm input.

NOTE: All the connectors marked GND are common.

Connect the ground side of the Alarm input and/or alarm output to the GND connector.

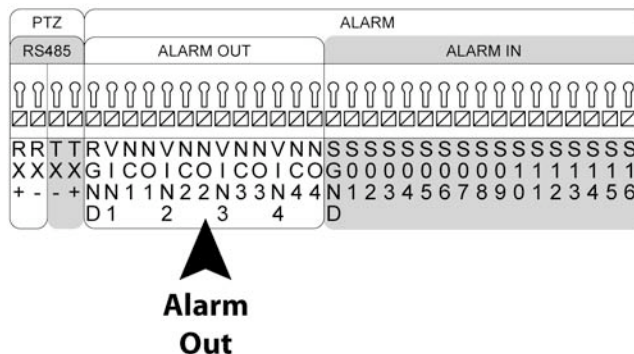


Figure 6 — Alarm Output connector strips.

The DVR can activate external devices such as buzzers or lights. Connect the device to the AO (Alarm Out) and GND (Ground) connectors. See 3.4 *Alarm Type* for configuring alarm output.

1.5 Connecting to the Network Port

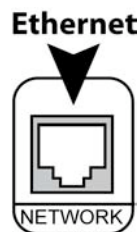


Figure 5 — Network connector.

The DVR can be networked using the 10/100Mb Ethernet connector. Connect a Cat5 cable with an RJ-45 jack to the DVR connector. The DVR can be networked with a computer for remote monitoring, searching, configuration and software upgrades. See 6.1 *Ethernet* for configuring the Ethernet connections.

1.6 Connecting Audio

NOTE: It is the user's responsibility to determine if local laws and regulations permit recording audio.

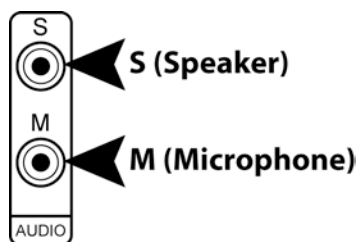


Figure 6 — Audio In and Out connectors.

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1.6 Connecting Audio (continued)

Your DVR can record audio. Connect the audio source to Audio In. Connect Audio Out to your amplifier.

NOTE: The DVR does not have amplified audio output, so you will need a speaker with an amplifier. The audio input can be from an amplified source or directly from a microphone.

1.7 Connecting to the USB Port

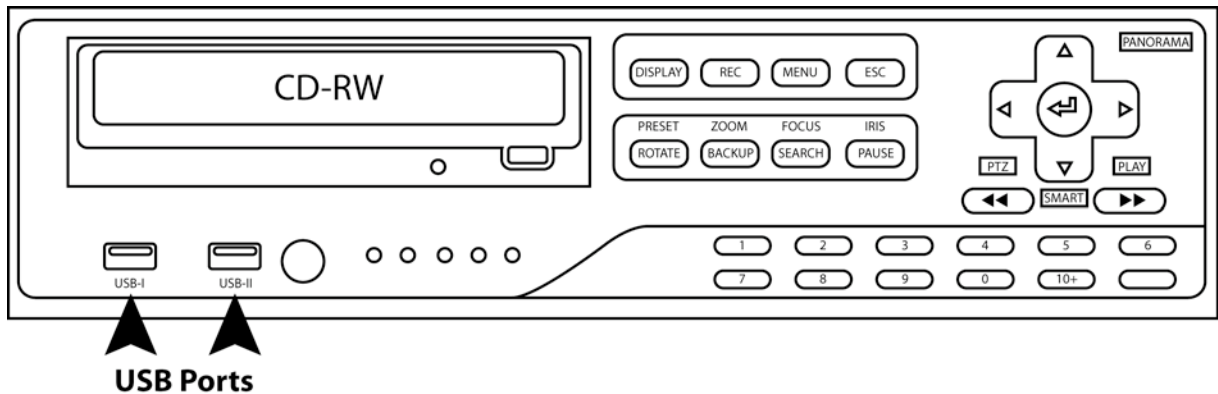


Figure 7 — USB connectors.

A USB port is provided to connect external hard disk drives or USB memory sticks for clip copying video.

1.8 Connecting to a PTZ Camera

Make a connection of PTZ unit to RS485 at the rear panel of DVR. PTZ units currently being supported are Clinton, Pelco-D/P, NVCC-Z42N, CyberDome (Kalatel), Samung, Samsung Techwin, Sungjin, Dongyang, DRX-500, Fastrax II, Sensormatic, PIH-7600, Eyeview dome.

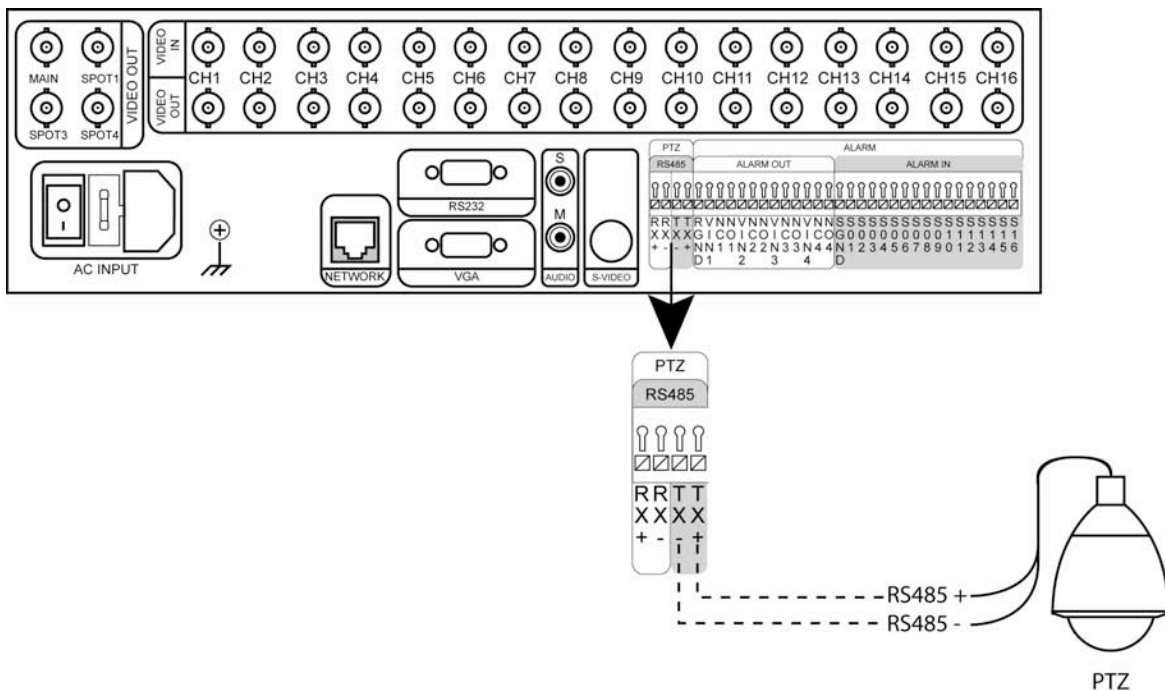
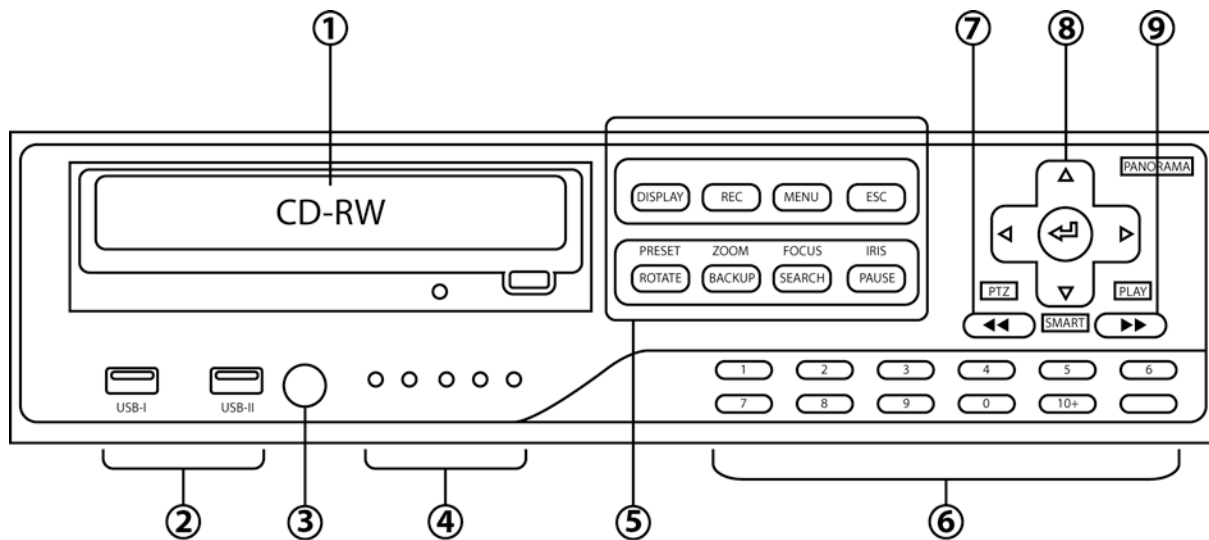


Figure 8 — DVR back panel.

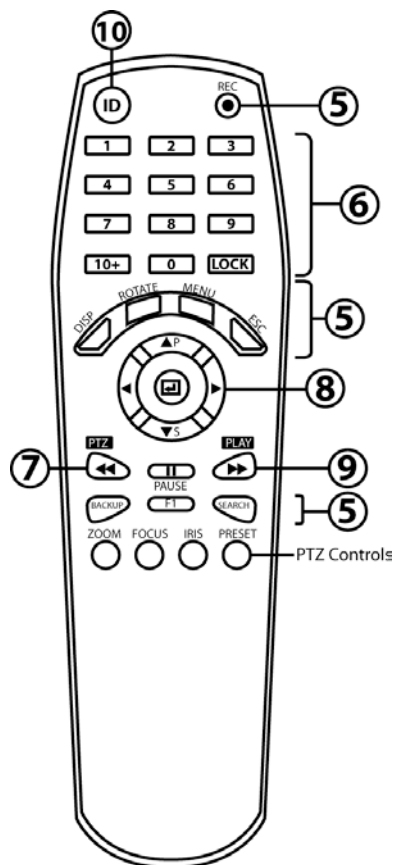
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Chapter 2 – DVR Layout

2.1 Front Panel



2.2 Remote



2.3 Front Panel and Remote Explained

1. **CD-RW:** Insert CD-RW to backup video.
2. **USB Ports:** Insert Flash Drive to backup video.
3. **IR Remote Sensor:** IR sensor for handheld remote
4. **LED Indicators:** Power, Fan, CD-RW, Record, Network
5. **Function Buttons:**

DISPLAY: Toggles between different display formats.

REC: When pressing the REC button in the live mode your DVR will start recording.

MENU: Enters setup screen. Pressing the button also closes the current menu or setup dialog box.

ESC: Exits the menu screens or moves to the upper menu.

ROTATE: Displays another screen.

BACKUP: Pressing the BACKUP button 3 times will display the Backup menu. Pressing again will exit backup menu.

SEARCH: Displays the Search menu. Pressing again will exit Search menu.

PAUSE: Pressing the PAUSE button while in live mode will freeze all live camera images.

Pressing the PAUSE button while in the playback mode will pause the video of selected cameras.

6. **Numeric Keypad (0-9, +10):** Pressing the individual numbered buttons will cause the corresponding camera to display full screen. These buttons are also used for entering user passwords. Use the +10 button to select numbers larger than 10. (For example: +10 + 6 = 16)

Log Out: Pressing the LOG OUT button locks all menu screens. You must re-enter the administrator password to access the setup menus.

7. **Fast Rewind:** Pressing the FAST REWIND button while in search mode plays video backward at a high speed. Pressing button again increases speed.
8. **Arrow Buttons:** These buttons navigate through menus. They are also used to control a PTZ when in PTZ mode. The arrows can be used to move the position of the active camera selection screen. These buttons also have the following functions in the Playback mode:

UP: Panorama playback by the hour and frame by frame.

DOWN: Time jump playback (Smart Search).

LEFT: Backward playback at regular speed.

RIGHT: Forward playback at regular speed.

9. **Fast Forward:** Pressing the FAST FORWARD button while in search mode plays video forward at a high speed. Pressing button again increases speed.
10. **ID Button:** Press and hold then enter the DVR ID number you want to select. (For example: To select DVR ID # 3 – Press and hold ID button then enter 0 + 3, the LED will go to solid to confirm. You must enter 0 then the number for ID numbers 0-9. (Note you must change each DVR ID - see *Unit ID in section 3.3*)

Chapter 3 – Initial Setup (System Menu)

3.1 Powering up the DVR for the First Time

Complete the steps in *Chapter 1- Installation* before continuing.

Once the DVR is installed properly: Turn on the DVR by pressing the rocker switch located on the back of the DVR.

Upon power-up the DVR will begin initialization, which will take approximately 60 seconds. As soon as the DVR completes its initialization process, it will begin showing live video on the attached monitor and playing live audio through the attached speaker. The default mode is to display all cameras at once. Pressing any camera button will cause that camera to display full screen. It displays live video and plays live audio until the user enters another mode.

Before using your DVR for the first time, you will need to establish the initial settings. Your DVR can be set up using the System Menu.

3.2 Admin Password

Press the MENU button to enter the setup screens. The Admin Password screen appears.



Figure 9 — Admin password.

Enter the password by pressing the appropriate combination of number buttons and then the ENTER button. The factory default password is **1111**.

3.3 General Setup

Select the GENERAL SETUP in the main menu – press ENTER.

Scroll through the menu using the UP and DOWN buttons on the DVR or Remote.

To change a menu item highlight the item and press the ENTER button.

Make sure that you select SAVE when done or all changes will be lost.

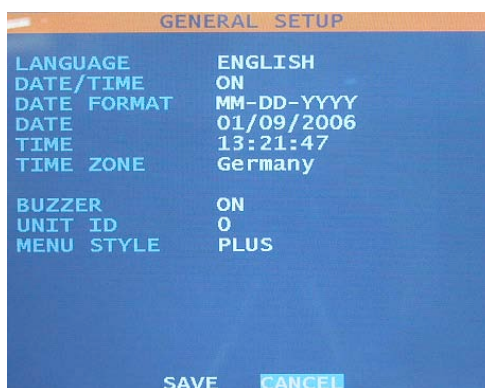


Figure 10 – General Setup.

3.3 General Setup (continued)

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From the GENERAL SETUP screen you can change the following:

Language: Select your desired language from the list.

Date/Time: Turns Date/Time ON or OFF (When turning off the DATE/TIME display, your DVR will not display the date and time information on the screen.)

Date Format: Select between: MM-DD-YYYY, DD-MM-YYYY, or YYYY-MM-DD

Date: Set date using either the number or the UP & DOWN buttons on DVR or Remote.

Time: Set time using either the number or the UP & DOWN buttons on DVR or Remote.

Time Zone: If your region recognizes DST (Daylight Savings Time) press ENTER and select your time zone from the list.

Use DST: If your region does not recognize DST leave DST OFF. If your region does recognize DST turn DST ON. (You must be connected to LAN to use this function)

Buzzer: Turn ON or OFF "beep" sound.

Unit ID: To use one remote for multiple DVRs first you must change each DVR ID number:

Select Unit ID – press ENTER.

Set a different UNIT ID for each DVR (0-19).

Select ok - press ENTER

Select save - press ENTER.

The DVR is now set for that UNIT ID.

Now you can use the remote to select that particular DVR ID by:

Holding the ID button (#10) down.

Enter the DVR ID number using the remote keypad (#4). (You must enter "0" then the number for IDs 0-9)

Release the ID button.

The remote controller is now set for that DVR.

Menu Style: Choose from BASIC or PLUS. Default menu style is PLUS. You can set up the DVR using the BASIC menu style however some features will be missing. To set in detail you have to change the menu style to PLUS again.

3.4 Alarm Type

Select the ALARM TYPE in the main menu and press the ENTER button. The ALARM TYPE screen displays the alarm inputs and outputs. Change TYPE from the ALARM IN to the ALARM OUT button by highlighting it and pressing the ENTER button.

Select the proper alarm type between NO (Normally Open) and NC (Normally Close) by highlighting the box below TYPE and pressing the ENTER button.

Save changes and return to the main menu by highlighting SAVE and pressing the ENTER button. Selecting CANCEL exits the screen without saving the changes.

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3.5 HDD Setup

Select the HDD SETUP in the main menu and press the ENTER button. The HDD SETUP screen will display three pages, INSTALL, OVERWRITE, CHECK, and SMART.

NOTE: The INSTALL, CHECK, and SMART setup screens are for factory use. Tampering with these settings may cause your DVR to not perform correctly.

Select the second page, HDD SETUP – OVERWRITE and the following screen will appear.



Figure 12 – HDD Setup – Overwrite.

You can turn ON or OFF the overwriting option by selecting the box beside HDD OVERWRITE.

NOTE: When turning off the overwriting, your DVR will stop recording when the disk is full.

When turning off the overwriting, the boxes beside REMAIN TIME and USED SPACE will be activated.

You can set up the HDD usage by changing the REMAIN TIME and USED SPACE.

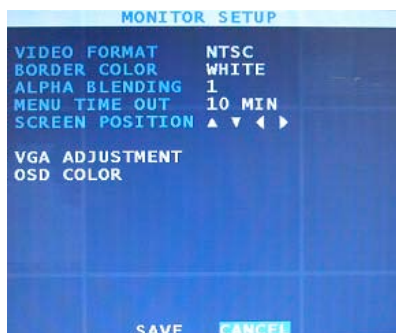
NOTE: When setting up the USED SPACE to 80%, your DVR will stop recording at 80%. Your DVR will check the settings of REMAIN TIME and USED SPACE automatically and record as long as possible.

Your DVR has 3 different warning methods when the disk is full but the DISK FULL WARNING must be turned on in the WARNING CONDITION menu.

You can assign an alarm out by selecting the box beside DISK FULL ALARM and turn on the buzzer or OSD warning message.

3.6 Monitor Setup

Select MONITOR SETUP in the main menu and press the ENTER button.



3.6 Monitor Setup (continued)

Video Format: Select AUTO or choose either NTSC (North American Standard) or PAL (European Standard).

Border Color: Select from Black, White, or Grey as the desired border color.

Alpha Blending: You can adjust the transparency of the menu screen by highlighting the box beside ALPHA BLENDING and pressing the ENTER button.

Menu Time Out: You can set up the menu time-out duration up to 10 minutes by highlighting the box beside MENU TIME OUT and pressing the ENTER button. Use the ARROW buttons to adjust the slide bar.

VGA Resolution: Select your VGA monitor's resolution. (You must enter your password to access this item)

Screen Position: You can change the screen position by highlighting the desired directional arrow and press ENTER.

VGA Adjustment: Highlight VGA ADJUSTMENT and press the ENTER button.



The ADJUSTMENT screen displays the brightness, contrast, and saturation.

Highlight values beside BRIGHT, CONTRAST or SATURATION and press the ENTER button.

Use the ARROW buttons to slide the bar to the desired setting.

Highlight the SAVE button and press the ENTER button to save your changes in the sub-menu.

OSD Color: You can change the color of the MENU and LIVE OSD.

Select the color you would like to change and enter a new RGB value using the ARROW buttons or enter the desired value using the NUMBER buttons

3.7 Password

An Administrator password is required to turn the system off, enter the setup screen, load default setups, clear all data, change system date and time and change the Administrator password. Highlight PASSWORD in the Main menu and press to enter the Password screen.

3.7 Password (continued)

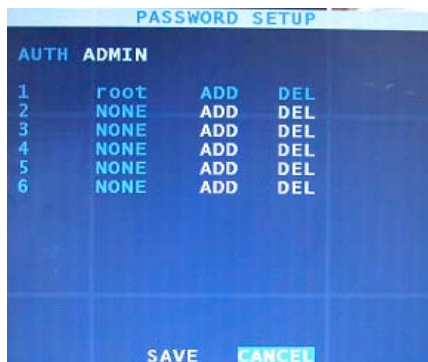


Figure 15 — Password Setup.

The PASSWORD SETUP screen displays three different user authorizations, ADMIN, Superuser and User. Superuser can use all functions but can't access the Menu to change the settings. The User can use PTZ and Status only. Highlight the ADD or DEL buttons and press the ENTER button to add or delete each user. When adding a new user account, you will be asked to enter the new password and to confirm it. When deleting a user account, you will be asked to confirm.

NOTE: The default Admin password is: 1111.

CAUTION: Don't delete the default Admin account, root before adding a new account. If deleting the default Admin, root before adding at least one Admin account, you can't reach to Menu to set up the system.

3.8 Configuration (password required)

You can save configurations to DVR system and load from DVR system. Highlight the CONFIG in the main menu and press the ENTER button. The following screen will appear.



Figure 16 – Config (1).

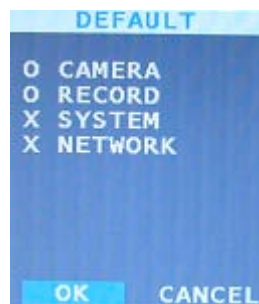


Figure 17 – Config (2).

Select SAVE and press the ENTER button. The virtual keyboard will appear and you can type the title and you can select the configurations for Camera, Record, System and Network. Press the ENTER button after selecting the configurations that you want to save. You can also load the saved configurations to the DVR system.

NOTE: The DEFAULT is the factory default.

Upgrade: You can upgrade the DVR software by using USB memory or CD.

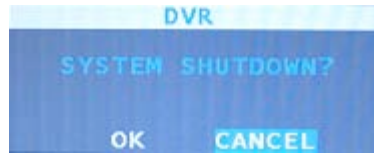
- Connect USB memory to DVR or insert CD.
- Highlight UPGRADE and press the ENTER button.
- Upgrade performs automatically.

3.9 Shutdown

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You can shutdown your DVR by highlight the SHUTDOWN in the SYSTEM menu and pressing the ENTER button.

When you highlight the SHUTDOWN and press the ENTER button. You have to input the Admin Password to confirm identification.



Highlight OK and press the ENTER button.

NOTE: To turn off the DVR, you have to power down after SHUTDOWN. The DVR power switch is at the back of the DVR.

Chapter 4 – Camera Menu

The camera Menu is used for general camera settings, camera image color, location control, or PTZ camera settings.

4.1 Camera Setup

Highlight CAMERA SETUP in the main menu and press the ENTER button. The SETUP screen appears.

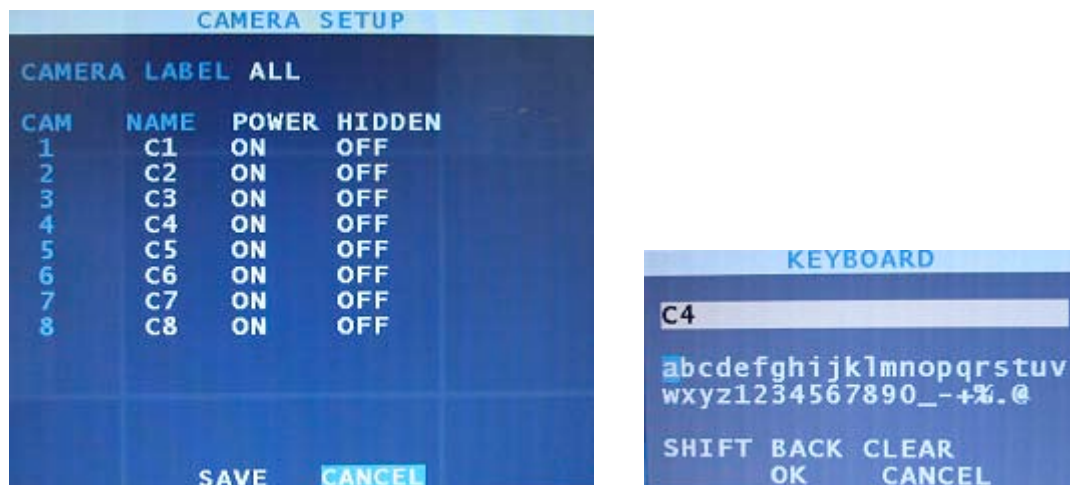


Figure 18 – Camera Setup.

The SETUP screen displays the camera label and the camera inputs.

You can turn on or off the camera number and camera name by highlighting the box beside CAMERA LABEL and pressing the ENTER button. Select one of the ALL, NAME, NUMBER, or OFF.

You can assign names to each camera by highlighting the boxes below NAME and pressing the ENTER button. A virtual keyboard allows you to enter camera names.

NOTE: When selecting the OFF, the DVR doesn't display the camera number and name.

You can connect or disconnect the video input by highlighting the boxes below POWER and pressing the ENTER button.

NOTE: The ENTER button allows you to select ON or OFF.

NOTE: When selecting the OFF, the DVR disconnects the video source so the camera can't be displayed and recorded.

You can hide or display the video of the camera by highlighting the boxes below HIDDEN heading and pressing the ENTER button. Select ON or OFF by pressing the ENTER button.

You can save your changes by highlighting SAVE and pressing the ENTER button. Selecting CANCEL exits the screen without saving the changes.

4.2 Adjustment

Highlight ADJUSTMENT in the main menu and press the ENTER button. The ADJUSTMENT screen appears.

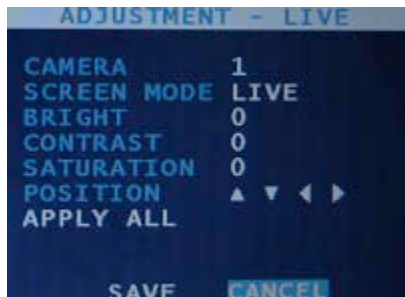


Figure 19 – Adjustment.

The ADJUSTMENT screen displays the brightness, contrast, saturation, hue, and position.

You can select the channel by highlighting the box right CAMERA and pressing the ENTER button.

You can select the live or recorded video by highlighting the box below LIVE and pressing the ENTER button.

You can adjust the brightness, contrast, saturation, and hue by highlighting the headings.

You can change the position of the screen by highlighting the arrow buttons of the POSITION and pressing the ENTER button.

You can apply your adjustments to all the channels by using the APPLY ALL button.

NOTE: Highlight the SAVE button and press the ENTER button to save your changes in the sub-menu.

4.3 PTZ Setup

Highlight PTZ SETUP in the main menu and press the ENTER button. The PTZ SETUP screen appears.

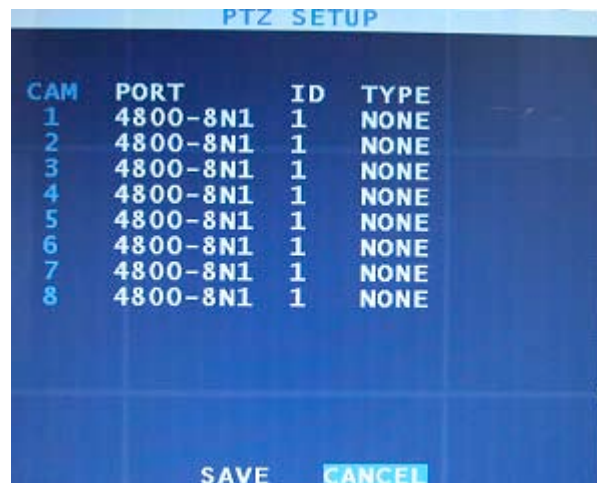


Figure 20 – PTZ Setup (1).



Figure 21 – PTZ Setup (2).

You can set up the baud rate, data bit, parity, and stop bit by highlighting the boxes below PORT and pressing the ENTER button.

4.3 PTZ Setup (continued)

You can set up IDs for each channel on the ID heading by highlighting the boxes below ID and pressing the ENTER button.

You can set up PTZ camera type by highlighting the boxes below TYPE and press the ENTER button.

Select your camera from the list and press the ENTER button

You will need to connect the camera to the RS485 terminal on the back of the DVR following the camera manufacturer's instructions.

4.4 Spot Setup

Your DVR can set up 3 spot monitors. Highlight the SPOT SETUP in the main menu and press the ENTER button. The following SPOT SETUP screen will appear.

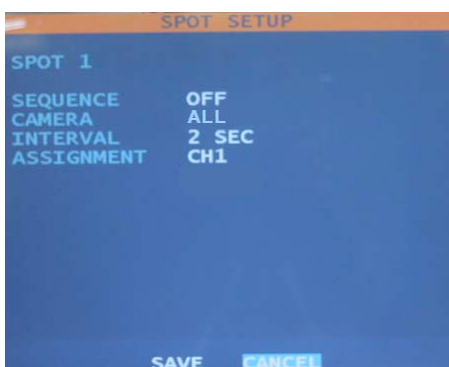


Figure 22 – Spot Setup.

You can turn on or off the SEQUENCE for cameras for spot. Turn on or off the SEQUENCE by highlighting the ON or OFF below SEQUENCE and pressing the ENTER button.

You can set up the rotating dwell time by highlighting the box below INTERVAL and pressing the ENTER button. It can be set up to 256 seconds.

4.5 Sequence

You can set up the dwell time and the sequence for rotation. Select the SEQUENCE in the main menu and press the ENTER button. The following screen will appear.

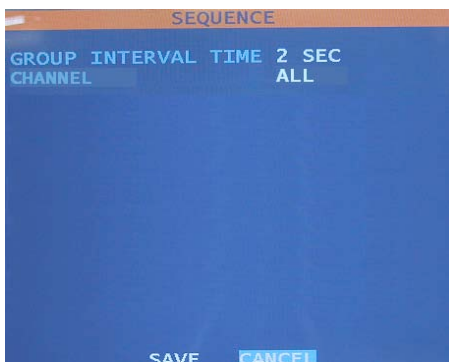


Figure 23 – Sequence.

Chapter 5 – Record Menu

Configuring Recording Settings

Your DVR offers a variety of flexible recording modes. You can set it up to record all the time or to only record events. It can be set up to continue recording once the hard disk drive is full by recording over the oldest video, or you can set it up alert you when the hard disk is full and stop recording.

5.1 Schedule Setup

Highlight SCHEDULE SETUP in the main menu and press the ENTER button. The SCHEDULE SETUP screen appears.



Figure 24 – Schedule Setup.

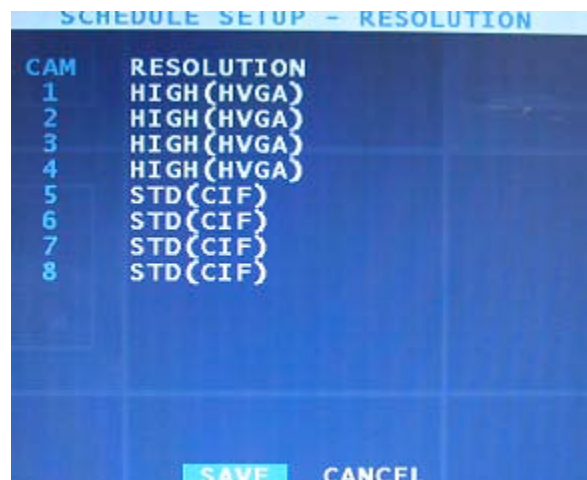


Figure 25 – Schedule Setup – Resolution.

You can set up daytime period by highlighting the boxes beside DAY and pressing the ENTER button.

NOTE: The night time period is changed automatically, according to the setting of the daytime.

You can set up weekend and add or delete holidays in the HOLIDAY SETUP menu by highlighting the ARROW icon in the HOLIDAY heading and pressing the ENTER button.

You can select the resolution between standard resolution and high resolution by highlighting the box beside RESOLUTION and pressing the ENTER button.

If you want to change the resolution of certain cameras, press the ARROW icon button in the RESOLUTION heading.

CAUTION: Your changes in the SETUP screens are applied to every channel, days and other items. If you want to change certain details, enter to the sub-menu by highlighting the ARROW icon button and pressing the ENTER button.

5.2 Time Record Setup

Highlight TIME RECORD SETUP in the main menu and press the ENTER button. The TIME RECORD SETUP screen appears.



Figure 26 – Time Record Setup.



Figure 27 – Time Record Setup (Speed & Quality).

Highlight the RECORD heading on DAY, NIGHT, or WEEKEND and press the ENTER button to toggle between ON and OFF.

You can set up the recording speed and select the recording quality between LOW, NORMAL, HIGH, & HIGHEST.

NOTE: To select the recording speed, use the ENTER button.

You can change the certain details by highlighting the DETAIL button (ARROW icon) and pressing the ENTER button.

5.3 Event Setup

Highlight EVENT SETUP in the main menu and press the ENTER button. The EVENT SETUP screen appears.

The DVR can be set to react to events differently. Each sensor can be assigned to a camera, recording speed, video quality, and dwell time.



Figure 28 – Event Record Setup.

Highlight the INPUT, MOTION or VIDEO LOSS in the EVENT INPUT menu and press the ENTER button to toggle between ON and OFF.

NOTE: When turning off the input, you can't select event inputs, MOTION, ALARM IN or VIDEO LOSS.

5.3 Event Setup (continued)

Highlight the ARROW icon in the EVENT INPUT menu to change the motion detection area for each camera, or change details for certain cameras. The following EVENT SETUP – INPUT screen will appear.

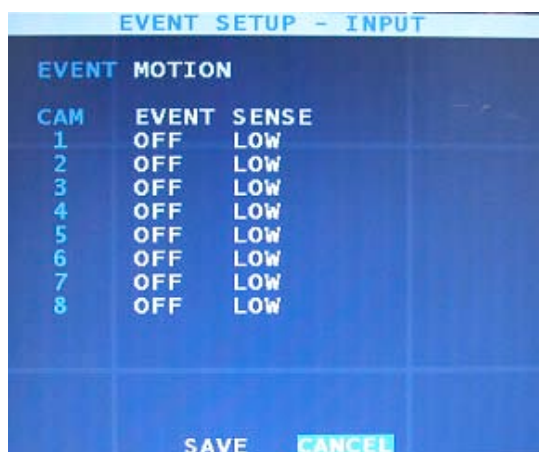


Figure 29 – Event Setup - Input.

NOTE: Highlight and press the ARROW icon beside of the EVENT to access MOTION, VIDEO LOSS and ALARM IN.

You can set up the motion event ON/OFF and sensitivity of each camera in the MOTION menu.

Highlight the MOTION beside of the EVENT and press the ENTER button to set up the alarm input. The following ALARM IN screen will appear.

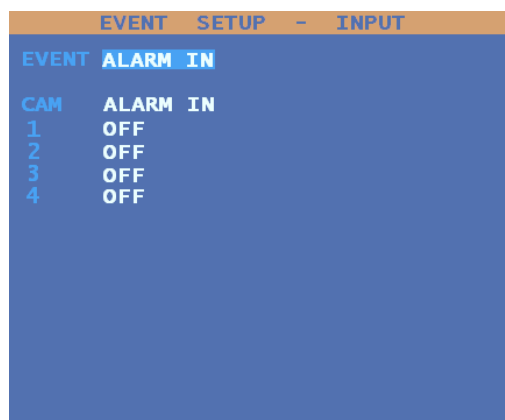


Figure 30 – Event Setup – Input – Alarm In.

You can select cameras that will be associated with the each alarm.

When the Record in EVENT OUTPUT menu is ON state, the video of associated camera will be recorded when alarm input event is occurred.

5.3 Event Setup (continued)

Highlight the ALARM IN beside of the EVENT and press the ENTER button to set up the VIDEO LOSS. The following VIDEO LOSS screen will appear.

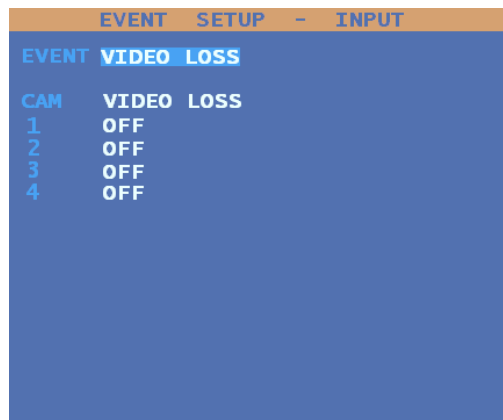


Figure 31 – Event Setup – Input – Video Loss.

You can select cameras that will be associated with the video loss.

To set up EVENT RECORD, highlight the INPUT beside EVENT SETUP on EVENT RECORD SETUP menu and press the ENTER button. The EVENT RECORD SETUP menu will be changed as below window. Select the RECORD ON/OFF, SPEED, QUALITY, or POST RECORDING dwell time.



Figure 32 – Event Record Setup

NOTE: The speed in the EVENT OUTPUT menu will be associated with the resolution setting in the SCHEDULE SETUP menu. When selecting the STD resolution in the SCHEDULE SETUP menu, the maximum speed will be 30fps. In case of selecting HIGH resolution, the maximum speed will be 15fps.

You can select the quality by toggling between LOW, NORMAL, HIGH, & HIGHEST. This selection is not affecting the recording frame per sec. When selecting Highest, it gives better image quality but the file size will be bigger than LOW, NORMAL, & HIGH.

You can set up the Post Recording time up to 100 seconds by highlighting the below box and pressing the ENTER button. Highlight the ARROW icon and pressing the ENTER button to change the details in the sub-menu.

5.3 Event Setup (continued)



Figure 33 – Event Setup - Record



Figure 34 – Event Setup – Record - Detail

You can turn ON or OFF recording, change the speed, and change the image quality for DAY, NIGHT, & WEEKEND. You can change the settings for individual cameras in the sub-menu by highlighting the ARROW icon and pressing the ENTER button.

To set up EVENT ACTION, Highlight the RECORD beside of the EVENT SETUP on EVENT RECORD SETUP menu and press the ENTER button. The EVENT RECORD SETUP menu will be changed as below window.

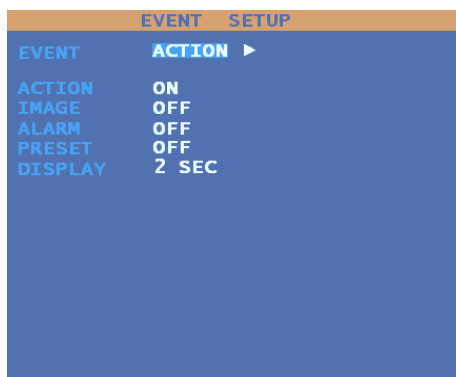


Figure 35 – Event Setup.

You can set up event actions by toggling between ON and OFF for Action, Image, Alarm, and Preset. You can also set up the popup screen dwell time by highlighting the DISPLAY button and press the ENTER button.

Highlight the ARROW icon and press the ENTER button to change certain details in the sub-menu. The following EVENT SETUP-ACTION screen appears.

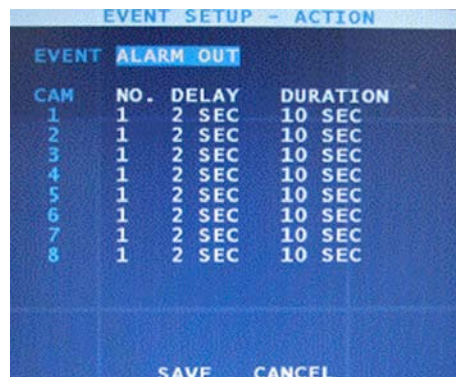


Figure 36 – Event Setup - Action.

5.3 Event Setup (continued)

You can associate the ALARM OUT, DELAY and DURATION for each camera by highlighting the action type beside of the EVENT and pressing the ENTER button and toggle ON or OFF.

NOTE: To associate the preset for each camera, *PRESET must be set in PTZ menu*

5.4 Audio Record Setup

Highlight the AUDIO RECORD SETUP in the main menu and press the ENTER button. The AUDIO RECORD SETUP screen appears.

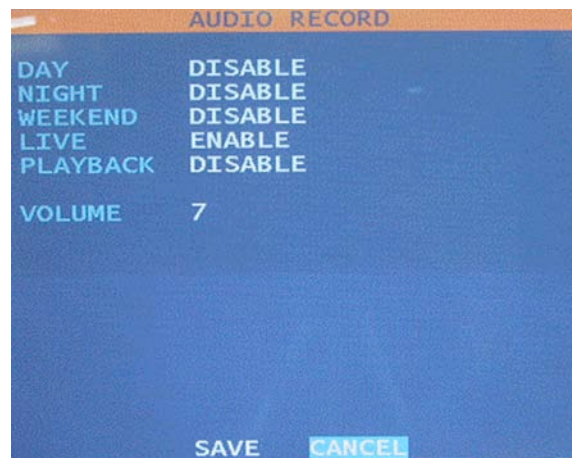


Figure 37 – Audio Record Setup.

You can turn ON or OFF the audio recording by highlighting the boxes beside DAY, NIGHT, WEEKEND, LIVE, or PLAYBACK by pressing the ENTER button.

You can also set up the volume by highlighting and pressing the ENTER button.

Chapter 6 – Network

Configuring Network Settings

Control communication related setting from DVR. It not only sets for commonly using Ethernet, but also monitors the status of server from a remote site through the Client and E-mail setting.

6.1 Ethernet Setup

You can turn ON or OFF the dynamic IP by highlighting the box beside the DYNAMIC IP and pressing the ENTER button.



Figure 38 – Ethernet Setup.

When turning off the Dynamic IP, you can enter the static IP information.

You can set HOST name using the virtual keyboard.

You can set IP ADDRESS, SUBNET MASK, GATEWAY and DNS using the UP, DOWN, LEFT, & RIGHT buttons or number buttons on DVR or remote.

6.2 DDNS Setup

Highlight the DDNS SETUP in the main menu and press the ENTER button. The following DDNS SETUP screen will appear.



Figure 39 – DDNS Setup.

6.2 DDNS Setup (continued)

Select the DDNS server. Your DVR already has been registered.

Input ID, PASSWORD and HOST NAME have been registered on the DDNS server using the virtual keyboard.

If you use PUBLIC IP, set the PUBLIC IP ON, if not, OFF.

If the connecting to DDNS server is not good, you can check the status of connecting to DDNS server by pressing the CHECK beside of STATUS.

6.3 Client Setup

Highlight the CLIENT SETUP in the main menu and press the ENTER button. The following CLIENT SETUP – CLIENT screen will appear.

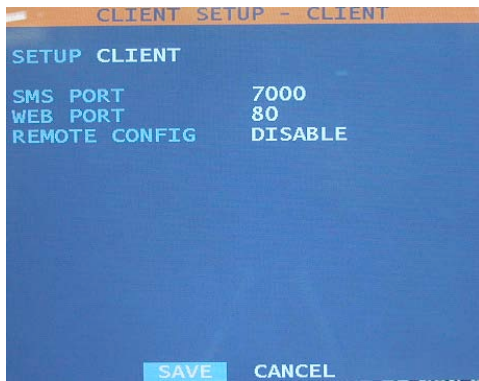


Figure 40 – Client Setup - Client.

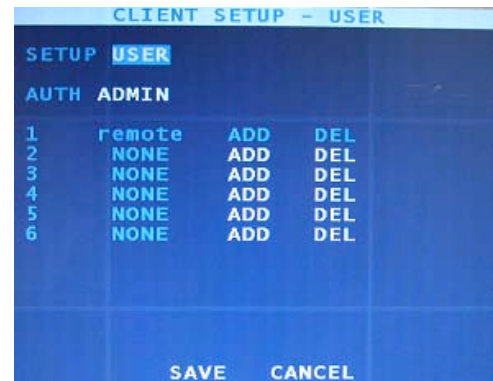


Figure 41 – Client setup – User.

- Enter the SMS Port for SMS client connection. The default TCP port is 7000.
- Enter the WEB Port for WEB client connection. The default TCP port is 80.
- You can select to use the remote configuration by highlighting the boxes beside and press the ENTER button.

Change the setup title beside of the SETUP to USER to add or delete accounts.

You can create new accounts by highlighting ADD button and pressing the ENTER button. Type the new account by using the virtual keyboard. When saving a new account, the password screen will appear. Type the password for the new account. The confirm screen will appear. Retype the password.

Change the setup title beside of the SETUP to ACCESS to define the IP access range from the client.

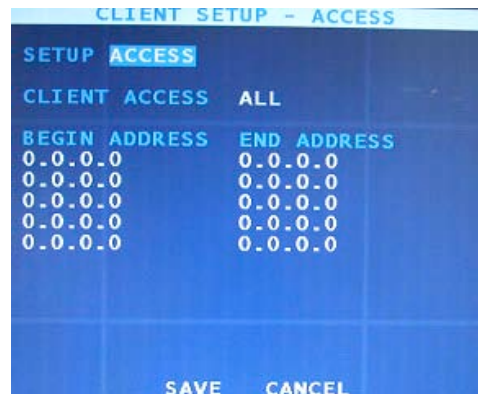


Figure 42 – Client Setup - Access.

6.3 Client Setup (continued)

When you change from ALL to RANGE, an IP address of client that is not in the access range can't access to the server the default range is ALL.

6.4 Email Setup

Your DVR can notify any event to assigned e-mail addresses and you can assign e-mail addresses up to 6.

Highlight the E-MAIL SETUP in the main menu and press the ENTER button. The following E-MAIL NOTIFICATION screen will appear.

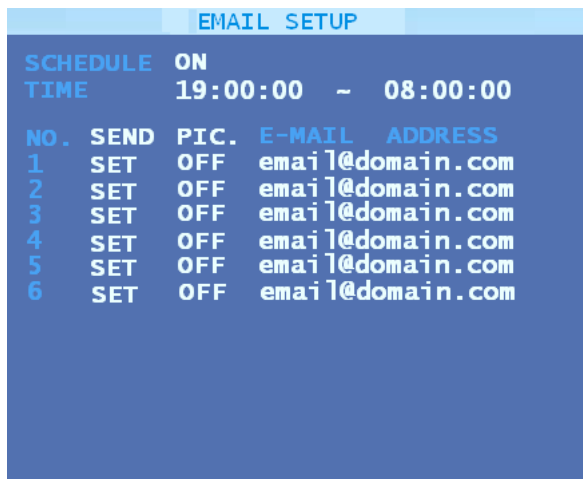


Figure 43 – E-Mail Setup (1).

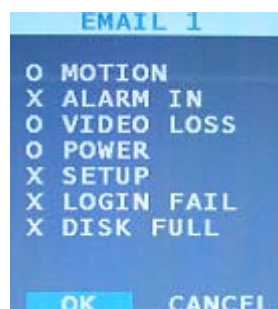


Figure 44 – E-Mail Setup (2).

You can associate events for the e-mail notification. Highlight the box below SEND and press the ENTER button. Then the event list will appear. If selected event is occurred, email will be sent to associate email address.

If the SCHEDULE is ON, the e-mail is available within setting time.

And, if the SCHEDULE is OFF, the e-mail is available always.

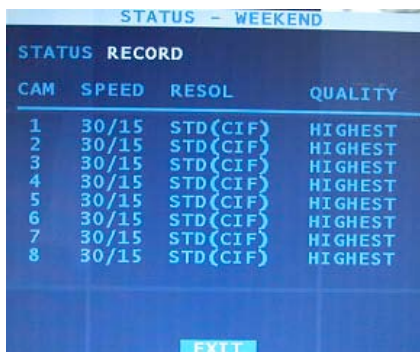
You can choose if the captured picture is attached or not by choice of ON/OFF under the PIC.

You can type the e-mail addresses you want to assign by using the virtual keyboard.

Chapter 7 – Information

7.1 Status

You can check the status of the DVR by pressing the STATUS button. The Status screen displays Recording, Event and Audio status and Disk and Key information.



STATUS - WEEKEND			
STATUS RECORD			
CAM	SPEED	RESOL	QUALITY
1	30/15	STD(CIF)	HIGHEST
2	30/15	STD(CIF)	HIGHEST
3	30/15	STD(CIF)	HIGHEST
4	30/15	STD(CIF)	HIGHEST
5	30/15	STD(CIF)	HIGHEST
6	30/15	STD(CIF)	HIGHEST
7	30/15	STD(CIF)	HIGHEST
8	30/15	STD(CIF)	HIGHEST

Figure 45 – Status.

7.2 Version

You can check the version of your DVR in the VERSION menu. Refer to the below screen. The VERSION screen will display the version information.

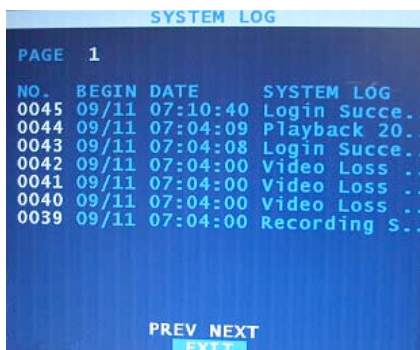


VERSION	
VIDEO FORMAT	NTSC
DVR PROGRAM	1.01.01
PTZ MODULE	0.19
DRIVER MODULE	2.04-8-N
FIRMWARE	0.00.00
MAC ADDRESS	0:6:27:1:4:17
VIDEO MUX	50725.0
VIDEO CODEC	41216.1
VIDEO I/O	40618.1

Figure 46 – Version.

7.3 System Log

You can check the system log by selecting the SYSTEM LOG in the main menu. The below screen will appear. You can move to the previous page or next pages by pressing PREV or NEXT button in the SYSTEM LOG menu.



SYSTEM LOG		
PAGE 1		
NO.	BEGIN DATE	SYSTEM LOG
0045	09/11 07:10:40	Login Succe..
0044	09/11 07:04:09	Playback 20..
0043	09/11 07:04:08	Login Succe..
0042	09/11 07:04:00	Video Loss ..
0041	09/11 07:04:00	Video Loss ..
0040	09/11 07:04:00	Video Loss ..
0039	09/11 07:04:00	Recording S..

Figure 47 – System Log.

Chapter 8 – Operation

NOTE: This chapter assumes your DVR has been installed and configured. If it has not, please refer to Chapters 1 - 7.

8.1 Login / Logout

Login

This system classifies user category as ADMIN, SUPERUSER, or USER limiting the access to system operation. Each login authority level and access level has been summarized as below, and ADMIN level overrides all. Press the MENU button to enter the setup screens. The Admin Password screen appears.



Figure 48 — Admin Password.

Enter the password by pressing the appropriate combination of Camera number buttons and then the Enter button. The factory default password is 1111.

The login window appears when the following buttons are pressed.

Button (Function)	Log-in Authority
MENU	Admin
SEARCH	Superuser
BACKUP	Superuser
PTZ	User

Logout

To log-out from the system click the LOCK button at front panel to brute force log-out.

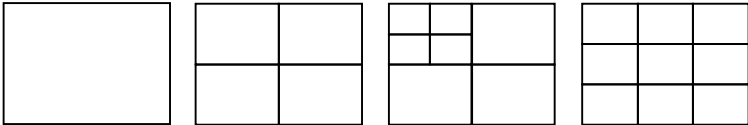
The DVR system automatically does log-out after a certain time is elapsed. Menu Timeout that has been set to System Setting is the time for predefined automatic log-out time.

Button	Function	Remarks
	Lock	It locks DVR as Logout stage

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8.2 Live Monitoring

The Front Panel Display and controls are described in 2.1 — Front Panel Layout.

Button (Function)	Remarks
DISPLAY	By repeatedly pressing the button you can cycle through the 1, 4, 7, & 9 screen grid displays. 
ROTATE	Pressing the button allows automatic sequential screen split for 1, 4, 9 etc. For example, press the button with 4-screen displays change into the next 4 different camera inputs automatically repeating the sequence.
FREEZE	Temporary stops the monitoring screen and press again to resume the original screen mode. (This button is also used to reset the USB module)
Enter	Selecting Cameo or displaying Cameo menu
Numeric Key (0-9)	Used for selecting the corresponding camera.
10+ Num. Key (10+)	Used for entering number greater than 10

Live Cameo Menu

When in live format, press the ENTER button and a green square cursor will appear. You can move the cursor by using arrow buttons and press the ENTER button again to pop up the cameo menu.

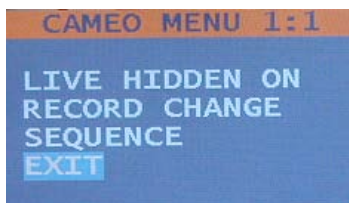


Figure 49 – Live Cameo Menu.

LIVE HIDDEN ON/OFF: You can hide ON or OFF the live camera to the selected channel. Press the ENTER button after highlighting the LIVE HIDDEN ON or LIVE HIDDEN OFF.

RECORD CHANGE: You can change the recording quality, resolution and recording speed to the selected channel in this menu.

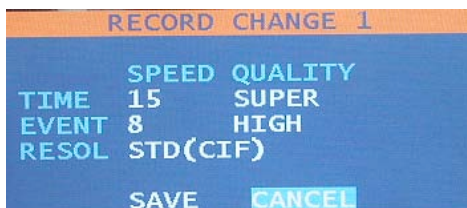


Figure 50 Cameo Record Changes.

Live Cameo Menu (continued)

SEQUENCE: When selecting the SEQUENCE on the above CAMEO menu, the following menu will show.

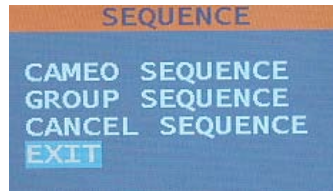


Figure 51 Cameo Sequence.

- CAMEO SEQUENCE: just selected cameo is rotated with the other channels out of monitor.
- GROUP SEQUENCE: all channels in monitor are rotated with the other channels out of monitor.
- CANCEL SEQUENCE: stop cameo sequence or group sequence.

NOTE: you can set rotate frequency on **SYSTEM MENU** with **PLUS MEMU TYPE**

Playback Cameo Menu

When in one of playback formats, press the ENTER button and green square cursor will appear. When moving the cursor to the bottom or top, the following pop-up menu will appear.

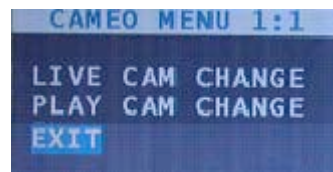


Figure 52 – Playback Cameo Menu.

Live and Playback Cameo Change

You can select a cameo camera and change the selected cameo viewer with live or playback channel that you want to watch.

If you want to change the selected cameo to Live Viewer, highlight the LIVE CAM CHANGE and press the ENTER button.

If you want to change the selected cameo to Playback Viewer, highlight the LIVE CAM CHANGE and press the ENTER button.

Then, you can select channel you want to view using below slide menu.



Figure 53 – Camera Change Slide.

NOTE: If you change cameos using **LIVE CAM CHANGE** or **PLAY CAM CHANGE**, changed cameos are preserved until you change cameos, and at next searching and playing also they are preserved. So, to watch default playback cameos you have to highlight the **DEFAULT** on the upper slide menu and press the **ENTER** button.

8.3 PTZ Control

The DVR will control cameras with Pan, Tilt, and Zoom capabilities. Press the PTZ button to enter the PTZ mode. The Mark 'P' is printed on the Cameos PTZ camera is set. And the lowest channel is selected among the PTZ Cameos.

NOTE: PTZ cameras have to already be set. Refer to 4.3 PTZ Setup.

NOTE: You have to select channel you want to control PTZ camera using numeric buttons.

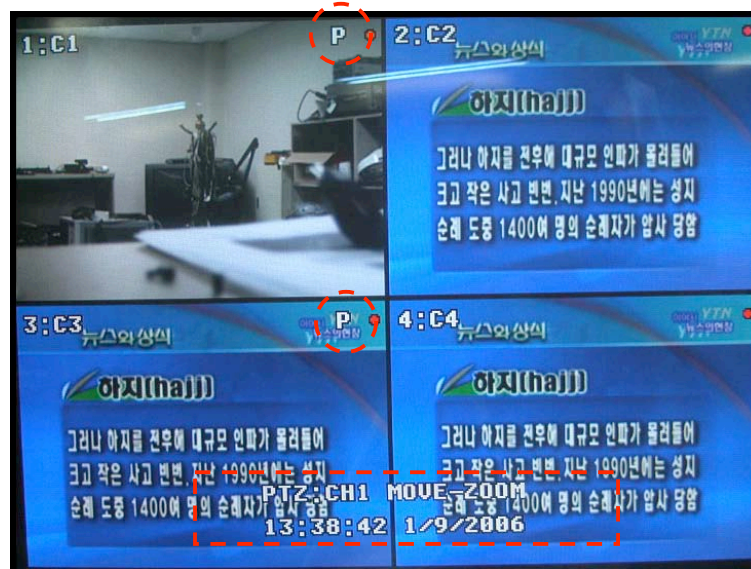


Figure 54 – PTZ Mode View.

You can control the camera using front panel buttons. Press the Left and Right arrow buttons to pan left and right. Press the Up and Down arrow buttons to tilt the camera up and down.

You can change PTZ mode using front panel buttons, PRESET, ZOOM, FOCUS and IRIS.

- PRESET: PTZ camera is moved to preset location and you can view the location.
- ZOOM: to zoom in or zoom out PTZ camera.
- FOCUS: to set focus manually.
- IRIS: to move iris in or iris out.

You can control the camera using front panel buttons or by setting up presets, tour, or Group.

Press the menu button on the front panel.

If you highlight the MOVE in the above menu and press the ENTER button, you can tilt the camera. Press the Left and Right arrow buttons to pan left and right. Press the Up and Down arrow buttons to tilt the camera up and down.

If you highlight the ZOOM in the above menu and press the ENTER button, you can zoom the camera. Press the Fast Forward and Rewind button to zoom in and out.

If you highlight the FOCUS in the above menu and press the ENTER button, you can set focus of camera using Left and Right arrow buttons.

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8.3 PTZ Control (continued)

If you highlight the SET beside of AUTO FOCUS in the above menu and press the ENTER button, camera focus will be set automatically.

You can toggle TOUR ON and TOUR OFF. If TOUR state is ON, camera will be moved along the already set PRESET GROUP until TOUR OFF. The PRESET GROUP has to be already set.

PRESET Setup

Your DVR can save 64 presets. Follow the next steps to set up presets. Select the preset number and move the camera by using the front panel buttons and select OK to save the preset location.

You can assign presets up to 6 to a preset group and set up the dwell time and speed. Select a preset number, press the Time button and set up the dwell time. When pressing the TIME again, the button will change to Speed. Press the Speed button and then you can set up the moving speed. Press the ADD button. After adding 6 presets or less, press the Save button to save the preset group.

To run the preset group, turn on the Tour in the upper menu. Your PTZ camera will tour the assigned preset group.

NOTE: The Time is the dwell time on a preset position.

NOTE: The preset recalls the preset location.

NOTE: The Group means the preset group.

NOTE: The Tour means the preset group tour.

8.4 Recording Video & Audio

Recording Video

Once you have installed the DVR it is ready to record.

The DVR will start recording when you press the REC button on the front keypad.

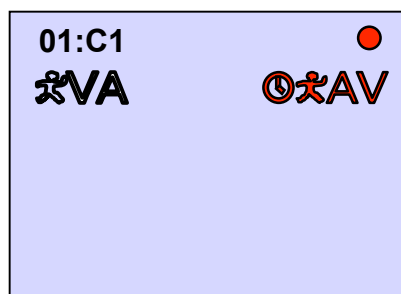
Recording Cameo Window

 : Time Recording

 : Motion Recording

 : Alarm Recording

 : Videoloss Recording



Button	Function	Remarks
REC	Record	Start and stop recording button for the current schedule setting

8.5 Searching Video

You can select the media by changing the device beside TARGET. You can playback the recorded video from HDD (Hard Disk Drive), CD or USB.

There are five ways of searching the recorded data on DVR.

- 1 QUICK SEARCH: Search for the recorded video data by date/time.
- 2 EVENT SEARCH: Search for the event occurred by search date.
- 3 OVERLAPPED LIST: Search for the data with overlapped date.
- 4 GO TO LAST: Search for data, recorded up to 10 minutes before the current time.
- 5 GO TO FIRST: Search for data, recorded at the earliest time in the Target device.
- 6 GO TO JUMP: Jump by hour or minute - this menu is only present on playing recorded video.

QUICK SEARCH

Days with recorded video listed. You can highlight number of the day with recorded video and press the ENTER button to select it.

A time bar will be displayed on the TIME SEARCH screen. You can use Left and Right arrow buttons to highlight the time bar. Once the time bar is highlighted, you can select time by using the Left and Right arrow buttons. After selecting hour, you can select the time by the three minutes by pressing the ENTER button.

To play the recorded video, highlight the PLAY and press the ENTER button.

EVENT SEARCH

Select the EVENT SEARCH in the SEARCH menu.

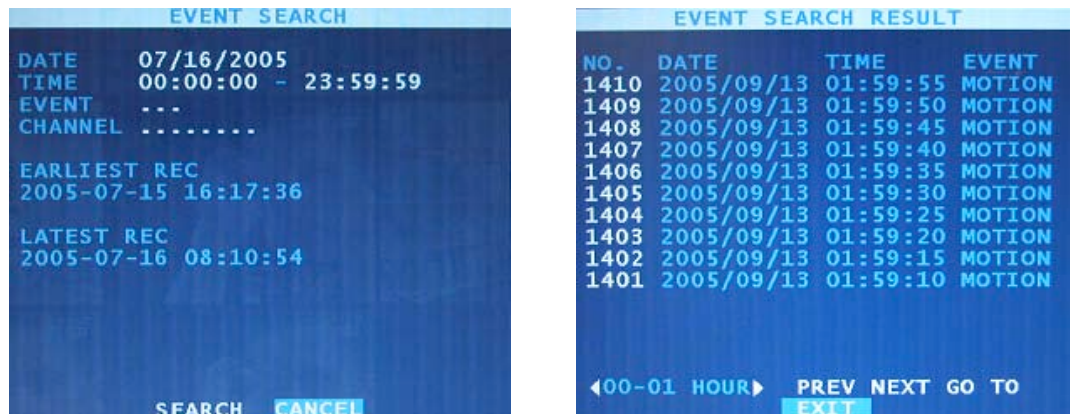


Figure 56 – Event Search.

The EVENT SEARCH screen will display changeable Date/Time, recorded information and channel selection. You can change the date/time and select the channels that you want to search.

You can search the recorded video by Motion, Alarm In and Video Loss by turning on or off. Once have selected the events and channels for searching, highlight the SEARCH and press the ENTER button.

You will have a recorded list with events that you can playback by selecting one of them on the list.

8.5 Searching Video (continued)

OVERAPPED LIST

You can have an overlapped list by selecting OVERAPPED LIST in the SEARCH menu. You can select one of the video files in the list and playback. Your DVR will create the overlapped video list caused by Date/Time changes or applying the DST (Daylight Saving Time).

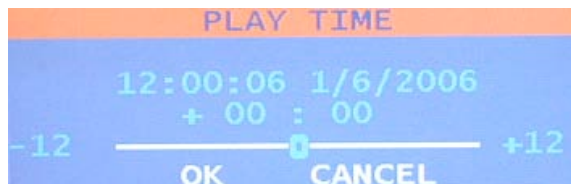
NO.	DATE	FROM	TO
1	05/07/15	05/07/16	05/07/15
2	05/07/16	05/07/16	05/07/15

FROM:08:24:01 TO:08:24:01
PREV NEXT
EXIT

Figure 57 – Overlapped List.

GO TO JUMP

This function allows to jump into the desired time frame. It is possible to jump by hour or minute. It is possible to perform the function on playing recorded video without PAUSE or STEP PLAYBACK.



8.6 Playing Video

Normal Playback

Standard video playback - supports forward/backward playback, playback speed, and pause.

Single Step Playback

Single step playbacks the screen display one frame at a time by pressing LEFT/RIGHT button during the pause stage. If you press the button again, it returns to Normal Playback mode. Single Step playback is useful for the viewing of specific video image in detail.

Smart Playback

Pressing the SMART button while in Normal Playback mode activates smart Playback.

Smart playback is a function that displays the Alarm In section after searching the video that has movement. Forward/Backward playback is possible and pressing SMART button during the playback changes to Normal Playback mode.

Pressing SMART button once again will resume the Smart Playback mode.

Panorama Playback

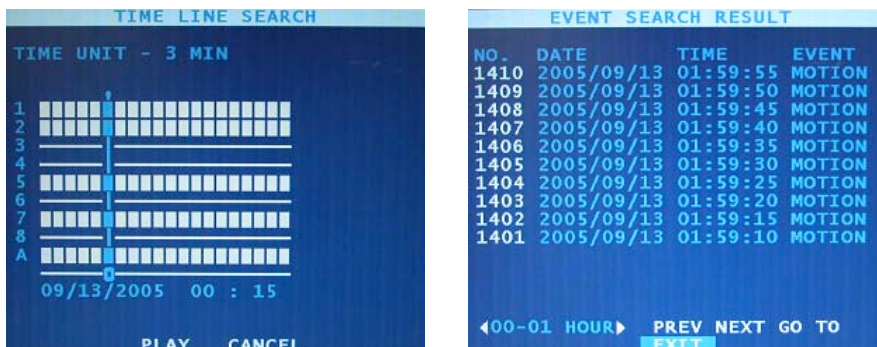
Pressing up direction key from a single screen playback mode changes to 4/9/16 screen panorama viewing mode. When the single screen is displayed, the mode is changed to Normal Playback.

Panorama playback displays a single frame of the video into several screens frame by frame.

8.6 Playing Video (continued)

Normal Playback

Normal playback means a steady speed playback. Pressing PLAY button allows to display the video that has been searched through Searching Video.

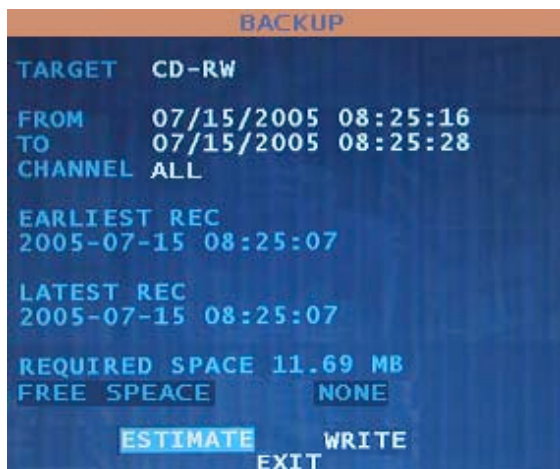


8.7 Copy Video Clip

This is the function that allows copying a part of video clip during play back into USB or other recording media. There are two ways of using it with cameo menu and front keys.

Using the front keys on PLAYBACK

- Click the BACKUP key for starting time
- Section to copy is made, click the BACKUP key again
- After that, click the BACKUP key of front keys



Make a copy after confirming the user selected channel and time frame.
Select CD or USB for storage media from TARGET.

Select Estimate then WRITE.

DvrPlayer is copied into backup CD or USB device automatically.

Backup video can be played using DvrPlayer.

DvrPlayer : Single channel video player similar to Windows Media Player

8.8 Backup Video Data

BACKUP TO THE INTERNAL CD-RW

You can backup the recorded video to the built-in CD-RW. Press the BACKUP button on the front or remote. The following Backup screen will appear. And you can select channel in sub menu on right fig. if you press the box beside CHANNEL.

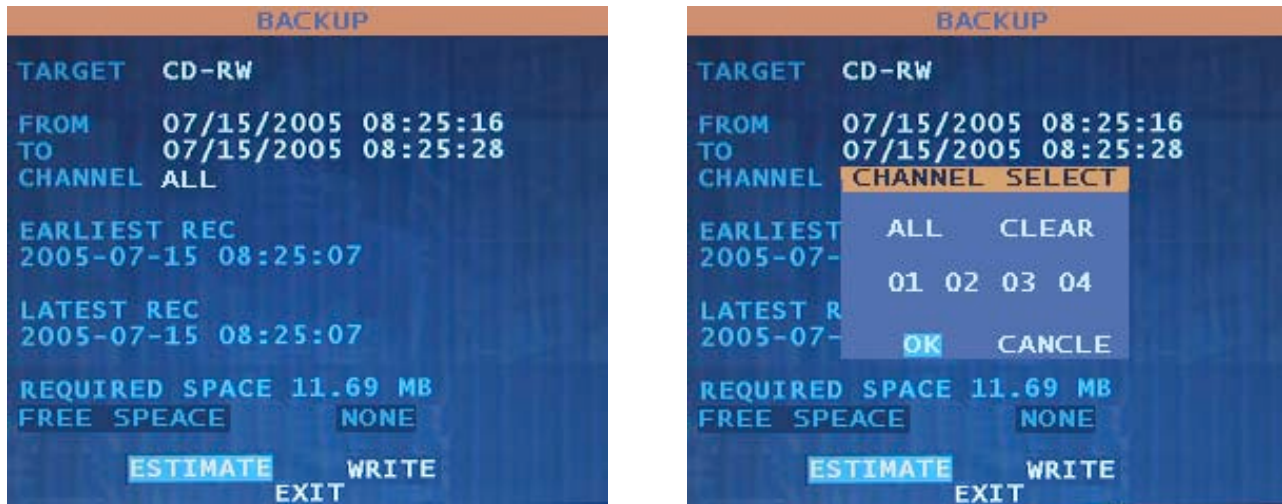


Figure 58 – BACKUP.

You can set up the Date/Time for backup and select the channels. Press the ESTIMATE button and your DVR will calculate the data size and display beside the REQUIRED SPACE. Press the WRITE button and your DVR will prepare the burning to a CD and the CD space is limited up to 650MB.

NOTE: When the data size is bigger than 650MB, you will be asked to put a new CD after burning the first CD.

You will be asked to confirm to backup the data to a CD.

DvrPlayer is copied into backup CD or USB device.

Backup video can be played using DvrPlayer.

DvrPlayer: Single channel video player similar to Windows Media Player

8.9 Print Image Frame

- Search video to the desired image frame that you want to print.
- Select the channel and enter the full screen mode by entering the channel number on the front panel or remote.
- Press the PAUSE button at the desired image frame that you want to print.
- Press the ENTER button twice.
- Select "Save JPEG" and save to desired target device.