



Model #: CVDVR900

MPEG-4 Embedded DVR
User Manual

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INSTALLATION GUIDELINE

A. Installation Environment

In order to ensure the safety with the DVR product and maximize product performance, please notice the following while/ before you install the product:

- i. Only use with AV220V voltage supply, please check with the power supply with correct voltage before installation. **DO NOT USE WITH ANY OTHER ADAPTER (DO NOT PLUG INTO AC380V HIGH VOLTAGE SUPPLY!)**
- ii. Away from a humid place or exposure with rain.
- iii. DVR should be install in a horizontal position.
- iv. Avoid placing the DVR in a location where electric conductivity is high.
- v. Avoid exposure to direct sunlight for prolonged periods and do not store in areas with extreme temperature conditions.
- vi. For the heat transfer and ventilation purposes, locate the DVR at least 15cm from another object (such as a wall) while installing the device.
- vii. Avoid placing the DVR near any chemical product. Accidental contact may harm the device.
- viii. Avoid placing the device in areas that are dusty and unkept. Dust may damage the unit.
- ix. Use correct grounding for the DVR device while operating.

B. Other notices

- i. Do not operate the device with wet hands.
- ii. Keep away from any wet place, fire hazard can occur by short circuit damage by any liquid dropped to device.
- iii. Do not place anything on the top of device;
- iv. Use a clean cloth to clean the device. Do not use chemicals to clean the device.
- v. Live voltage does exist while the device is connected to a power supply, even when the device is not turned on.
- vi. Disconnect the DVR when not in use for an extended period.

This device had been certified with the international safety standard.

PRODUCT FUNCTIONS/ FEATURES

- High speed embedded CPS and real time embedded control operation system are adapted with the product. It provides operation stability, no hang-up error, more reliability and ease for maintainance.
- Operation with front panel and remote control, menu language also available in English/Chinese/Simplified Chinese. Security with double password lock. System management requires authority code in order to provide safety system.
- Uses a hardware MPEG-4 encoder to provide better streaming quality, it also supports D1, 1/2D1, CIF resolution, and has an adjustable frame rate and provides space efficiency with compact video size.
- Video storage using FAT32 format, suitable for 1~4 IDE hard drive connections, there are 3 types of storage methods in use here: individual, compound and mixed;
- Provides multi-channel operation, such as 4 channel video/audio input capture, 2 channel video (monitor and reply) output, with VGA reply output.
- 4-channels alarm input with programmable setting.
- Time setting to activate recording system with auto switching, system re-activate after power shut down. Alert system for any video signal loss or disturbance.
- Available with manual, time setting, alert playing, this will make the unit more effectively and hard space efficient. The motion detect function is available with a setting for 16x12 detect region area, with adjustable sensitivity detect level.
- Pre-setting record function and extended alert function, in order to ensure alert information capture with user requirement.
- Has fastforward/backward x2 and x4 function and slow motion rate at x1/2, x1/4 and x1/8 as well as pause and frame-by-frame function.
- PAL/NTSC system compatible.
- Individual setting for each capture channel for brightness, contrast, color, motion detect setting.
- Complete daily report for alarm record and operation record. Good for monitor records and analysis;
- RJ-45 network inlet/outlet available for the internet function for ADSL, ISDN, intranet, etc, setting with local IP and hosting address.
- Optimized with Internet Explorer browser for remote viewing.
- RS-485 connection for the platform decoder, available for difference frequency setting and decoder parameter, as well as extendable function for the decode function.
- VGA output provides video quality and progressive scan option.
- Supports Compact Flash card storage and IBM Microdrive disk.
- Upgradeable with latest firmware and backup file system provide reliable storage solution.

FRONT PANEL



Front Panel and key definition:

1. LED Indicator status area

- [1-8]LED Indicators: indicate 8 different channels for recording status, (for the 4-channel model: only works for LED[1-4], others will be off). LEDs that are on indicate recording in progress, and LEDs that are off indicate that the system is in standby.
- [1-4]HD: indicate 4 different hard disk working status. LEDs that are on indicate hard disk work in progress, and LED off indicate that the hard disk is in standby.
- LINK/ACT: Lights on when the internet is connected and blinks for data transferring.
- 100M/ 10M : indicates internet speed: LED will be on when transmitting 100M bps, LEDs will be off for 10M bps.
- VGA : indicates VGA connection status: LED will be on when the VGA is connected, LED off when disconnected.

2. Menu Operation

- Up, Down directional keys.
- Left, Right directional keys.
- [ENTER]Key: Confirm OR Time display while in monitor mode.

3. Playback function

Key	Definition
[Playback]	Playback function activate
[Slow]	Playback with slow motion with speed at 1/2x, 1/4x, 1/8x, resume at normal speed with [Playback]pressed
[Pause /Play]	Pause video while press once, frame-to-frame at re-press.
[Playback]	Key for resume to normal
[Fast Forward]	2x, 4x Speed available, Playback Key for resume at reg. play
[Fast Backward]	2x, 4x Speed available, Playback Key for resume at reg. play
[Recording]	Available for 4 channels recording, single online monitor system can play with manual recording.
[Stop]	Stop manual recording

4. Platform Control Key

Key	Definition
[0-9]	Numeric buttons, for number key-in or video swapping. For non-menu screen, 1, 2, 3 and 4 represent for the video channel 1, 2, 3 and 4 respectively
[Zoom In +], [Zoom Out -]	Zooming adjustment
[Brightness +], [Brightness -]	Brightness adjustment
[Focus +], [Focus -]	Image Sharpness adjustment
[Auto]	Auto Mode activate
[Manual]	Manual Adjustment Platform
[Default]	Use with Default configuration
[Window Wiper/Lighting]	Control with window rain wiper and lighting

FRONT PANEL ...continued

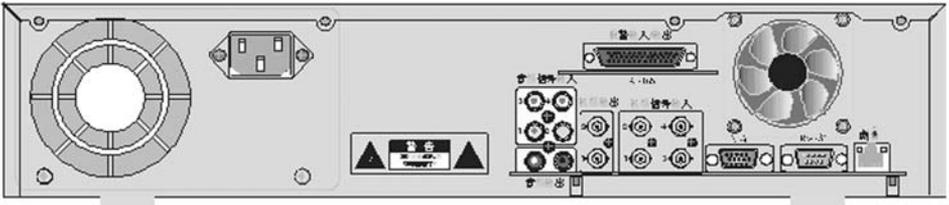
5. Other options

Key	.Definition
[Power ON /Power Off]	.System turn on and off(Stand-by and start)
[Login/Locked]Key	.Login to enter to operate mode with require password and lock current setting activation
[Status]	.Checking with record information store inside of hard drive.
[Display Swap]	.Swapping between multi-channel and single channel monitor system
[Channel Config]	.Channel configuration
[Adjustment]	.Display with the setting of brightness, colour, contrast, motion detect sensitivity, adjust with[+], [-]
[Return]	.Return back to operating screen from setup menu
[CF Card]	.While CF card inserted, this button can activate for the CF function, for more details please refer with your CF Card operation instruction manual
[Language]	.English, Simplified Chinese, Tradition Chinese selectable
[Network]	.Network parameter setting
[Record]	.For 4 channels monitor system. Can activate 4 manual records or for single channels the monitor system can activate 1 manual record
[Stop]	.Stop manual recording
[Setting]	.Setting with system configuration and parameters
[F1]	.Time select while in Playback mode
[F2]	.For single channel system, control menu activation while this key being pressed. While left/right, up/down key pressed, adjusted with station recorder left/right, up/down direction movement,press[ENTER]return to original position.
[Zoom In +], [Zoom Out -]	.Zooming adjustment
[Brightness +], [Brightness -]	.Brightness adjustment
[Focus +], [Focus -]	.Image Sharpness adjustment
[Auto]	.Auto Mode activate
[Manual]	.Manual Adjustment Platform
[Default]	.Use with Default configuration
[Window Wiper/Lighting]	.Control with window rain wiper and lighting Control menu quit with re-press[F2]
[F3]	.No specific function set for this key [can be reserve for other function]
[F4]	.While in monitor system, swap with BNC / VGA output

6. Connection

CF Card: Compact Flash Card slot for upgrade and backup function;
IR: Infra red receiver

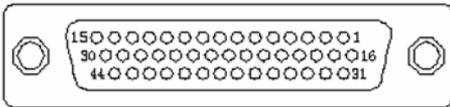
BACK PANEL ...continued



Back Panel and connection outlet:

- 1 Ventilation fan
 - 2 AC220V power in
 - 3 Power switch
 - 4 Alert signal in/out/ RS-485: 4 channels input/ output
 - 5 Audio input: provide 4 channels audio input
 - 6 Audio output: 2 channels for audio out, left side for replay output, right side for the surveillance output
 - 7 Video output: 2 channels for video signal output, channel 1 for surveillance output, channel 2 for mixed video output
 - 8 Video input: Channel 1~4 for video signal input
 - 9 VGA: output with external computer monitor, only for Playback screen or on time recording screen, not for surveillance review
- Method: Press[F2]in remote control after key in password, then switch the screen from display output with monitor screen*
- 10 RS-232: Standard RS-232 connection
 - 11 Ventilation fan for main unit

MPEG4 Alarm connector pin definition:



Pin definition:

PIN	DEF	FUNCTION	PIN	DEF	FUNCTION
1	IN0	Channel 1 Alarm input	16	.4COM	Channel 2 Alarm output
2	IN1	Channel 2 Alarm input	17	.4NO	
3	IN2	Channel 3 Alarm input	18	.4NC	
4	IN3	Channel 4 Alarm input	19	.COM	
5	IN4	.NC	20	.NO	
6	IN5	.NC	21	.NC	Power fault report output
7	IN6	.NC	22	.COM	
8	IN7	.NC	23	.NO	
9	OUT0	Channel 3 Alarm output	24	.NC	Fault report output
10	OUT1	Channel 4 Alarm output	25	.485A	.485A
11	OUT2		26	.485B	.485B
12	OUT3		27-38	.GND	Ground
13	3COM	Channel 1 Alarm output	39-44	..+12V	..+12V
14	3NO				
15	3NC				

2, 4 channels alert layout definition

- 1-2 channels for open socket switch output, no need for additional alarm driver.
- 3-4 channels for power levels output(OUT for low power out), require additional alarm drive add in here.

REMOTE CONTROL

Remote Control Key Definition / Function:

1. Numeric Key

[0-9]Keys : Numeric, for number key-in or video swapping. For non-menu screen, 1, 2, 3 and 4 represent for the video channel 1, 2, 3 and 4 respectively.

[+], [-]Keys : Use for volume control, or while checking can play as next/pervious page, even changing some parameters for configuration.

2. Menu Operation

▲ ▼ : Up, Down directional keys;

◀ ▶ : Left, Right directional keys;

[ENTER]Key: Confirm OR Time display while in monitor mode;

3. Platform Control Key

Key	Definition
[Zoom In +], [Zoom Out -]	.Zooming adjustment
[Brightness +], [Brightness -]	.Brightness adjustment
[Focus +], [Focus -]	.Image Sharpness adjustment
[Auto]	.Auto Mode activate
[Manual]	.Manual Adjustment Platform
[Default]	.Use with Default configuration
[Window Wiper/Lighting]	Control with window rain wiper and lighting

4. Playback function

Key	Definition
[Playback]	.Playback function activate
[Slow]	.Playback with slow motion with speed at 1/2X, 1/4X, 1/8X, resume at normal speed with [Playback] pressed
[Pause /Play]	.Pause video while press once, frame-to-frame at re-press. [Playback] Key for resume to normal
[Fast Forward]	.X2, X4 Speed available, [Playback] Key for resume at normal play.
[Fast Backward]	.X2, X4 Speed available, [Playback] Key for resume at normal play.



REMOTE CONTROL

Remote Control Key Definition / Function:

5. Other options

Key	Definition
[Power ON /Power Off]	System turn on and off (Stand-by and start)
[Login /Locked]Key	Login to enter to operate mode with require password and lock current setting activate
[Status]	Checking with record information store inside of hard drive
[Display Swap]	Swapping between multi-channel and single channel monitor system
[Channel Config]	Channel configuration
[Adjustment]	Display with the setting of brightness, colour, contrast, motion detect sensitivity, adjust with [+], [-]
[Return]	Return back to operating screen from setup menu
[CF Card]	While CF card inserted, this button can activate for the CF function, details please refer with CF Card operation instruction
[Language]	English, Simplified Chinese, Tradition Chinese selectable
[Network]	Network parameter setting
[Record]	For 4 channels monitor system, can activate 4 manual record, or for single channels monitor system, can activate 1 manual record
[Stop]	Stop manual recording
[Setting]	Setting with system configuration and parameters
[F1]	Time select while Playback mode
[F2]	For single channel system, control menu activate while this key being pressed While left/right, up/down key pressed, adjusted with station recorder left/right, up/down direction movement, press[ENTER]return to original position
[Zoom In +], [Zoom Out -]	Zooming adjustment
[Brightness +], [Brightness -]	Brightness adjustment
[Focus +], [Focus -]	Image Sharpness adjustment
[Auto]	Auto Mode activate
[Manual]	Manual Adjustment Platform
[Default]	Use with Default configuration
[Window Wiper/Lighting]	Control with window rain wiper and lighting Control menu quit with re-press [F2]
[F3]	No specific function set for this key [can be reserve for other function]
[F4]	While in monitor system, swap with BNC / VGA output



SYSTEM START-UP/SHUT DOWN

1. System Start up

Plug in your AC power, turn on the main unit, the red light will turn on while the system boots up.

The system will be in standby mode. Press the [ON/OFF] button in front panel or remote control, the red light will turn off, then the monitor will be activated to show as 4-channel windows status. There will be channel numbers shown to indicate each input signal. Also, the top of screen will show the system time, number of hard disk and CF card status (if applicable) shown in the center of the screen (there would be an alert warning for no hard-disk installed), all of the information will be shown on the screen for 5~6 seconds. There will be a count down from 100 to 0 seconds (shown in red color font). The system will be locked up after the count down reaches 0 seconds.

Notice: If the device is being set for timer record function, there is no need for standby status after the system turns on, the system will go to multi-channel screen.

2. System Login

While the system is in lock-in status, press the [Login/Logoff] button in the front panel or remote control, then the screen will have pop-up window appear stating "Unit ID: *****, Unit ID : 000". Select the desired unit ID. "Password required: " then key in your login password to enter into the system (The DVR will accept User password or Administrator password).

1. After the user password is keyed in correctly, the message "USER PASSWORD CORRECT" will be shown. Then the user can enter into restricted functional/feature level functions with the device. (default password is : 00000000)
2. After the Administrator password is keyed in correctly a message "ADMIN PASSWORD CORRECT" will appear, then the administrator can enter into all functional/feature levels with the device. (default password is : 88888888)

Remark: There will be a difference between administrator and user level authorizations:

1. User can only playback all existing files, however, they can not stop the recording, or access record setup. While the administrator can access all setup features.
2. After the password key in correctly, the count down timing (shown in top right corner) will change from red to green color, this indicates that the user can access different operations. There will be a 100 seconds operation time allowance after each key-in button is pressed before system locked. The user will be required to re-enter their password to return to normal operation level once the "LOCK" indicator shown in top right corner;
3. The user must key-in unit ID and password to enter into the operation system while in LOCK status.

3. System Logoff

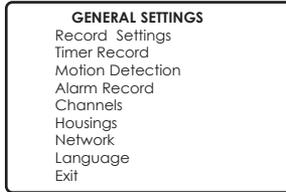
Press [Login/Logoff] button in the front panel or remote control after the record stop, the system will go into standby mode.

Remark: Please make sure the system status is in standby mode before powering off. Please do not power off the machine while it is in recording or playback system setting.

OPERATION INSTRUCTION

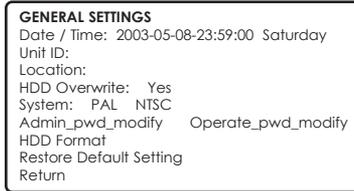
A. Menu Setup

While system is powered up, select [General Setting] to alter the system setup. The setup menu can be seen below, highlight the item for selection and then press [Enter] to confirm. (while system recording, not allow to change any setting for current channel)



A-1 General Parameter Setting:

Highlight and select "General Settings", then press [Enter] for this selection, the sub-menu will be shown (as below), then select the desired area.



Date/ Time: Highlight and press [Enter] to confirm for change for date and time, range will apply following:

- YEAR: from 2000 to 2099, only change the last 2 digits (eg. "03" for Year 2003);
- MONTH: Range 01 ~12;
- DAY: Range 01~31;
- HOUR: Range 00~23;
- MINUTE: Range 00~59;
- SECOND: Range 00~59;

After the [Return] key is pressed, the settings will be saved while power is on. However, the settings will not be saved when the system restarts.

Unit ID: Changing the ID from 000 to 999, this ID used for the login identification.

Location: Key in the address for the location of the unit.

HDD Overwrite: Select one of two options: *ON* and *OFF*. When *ON* is selected, this will allow recording continuously even if the hard disk space fills up. The video will be recording into FIFO (First-In-First-Out) format. When *OFF* is selected, the recording function will stop once the HDD has filled up.

System: Select one of two options: "PAL" and "NTSC", then press [Enter] to confirm. NTSC is the standard for North American video systems while PAL is standard for European recording systems.

Admin_pwd_modify: Allows the you to change the administrator password, press[Enter] to enter this function. It will require you to key-in the new password twice to confirm the new password (this option only available with the administrator authorization level).

Operate_pwd_modify: Allows the you to change the operator password, press[Enter] to enter this function. Require the user to key-in the new password twice to confirm.

HDD Format: This will allow you to format the hard disk drive while non-recording status, while this option being selected, select with [START] and press [Enter] to confirm this function.

Restore Default Setting: Restore all the settings to the factory level settings. A confirmation option will appear to reconfirm system restore. A sample chart is shown on the next page.

Return: Go back to previous menu.

OPERATION INSTRUCTION

Example: below is the record default setting:

Record Settings				
Channel	Quality	Definition	Frame	Mode
1	14	CIF	25	CBR
2	02	CIF	25	CBR
3	03	CIF	25	CBR
4	04	CIF	25	CBR
HDD Store Mode				
Centralize	Individual	Compound		
Return				

A-2 Record Parameter Setup:

While system operated, select "Record Setting" to changing some setting in here:

GENERAL SETTINGS
Record Settings
Timer Record
Motion Detection
Alarm Record
Channels
Housings
Network
Language
Exit

Record Settings				
Channel	Quality	Definition	Frame	Mode
1	14	CIF	25	VBR
2	02	D1	12	CBR
3	03	HD1	6	VBR
4	04	D1	3	VBR
HDD Store Mode				
Centralize	Individual	Compound		
Return				

Channel (4 Channels): Move the cursor to enable channel recording function. If there is an "X" to the left of a channel, recording is not allowed. Pressing [Enter] will enable the channel.

HDD Format: This will allow you to format the hard disk drive while in non-recording status. Select [START] and press [Enter] to confirm this function.

Image Quality: From 1 to 8 levels, 1 is the best quality. Use the cursor to select and press [Enter] to confirm this function, with [+] and [-] to move the level.

Definition/Sharpness: From "D1, HD1, CIF" 3 difference levels. Using the cursor to select and press [Enter] to confirm this function:

D1: DVD picture sharpness quality;

HD1: SVCD picture sharpness quality;

CIF: VCD picture sharpness quality;

Frame Rate: While in PAL video system choose from "25, 12, 06, 03, 01, 0.5" frame rate levels. While in NTSC video system, choose from "30, 15, 08, 04, 02, 01" 6 difference frame rate levels. Using the cursor to select and press [Enter] to confirm this function, and with [+] and [-] to move the level.

PAL video system:

D1: Provided with totally 25 frame/ second in 4 channels;

HD1: Provided with totally 50 frame/ second in 4 channels;

CIF: Provided with totally 100 frame/ second in 4 channels;

NTSC video system:

D1: Provided with totally 30 frame/ second in 4 channels;

HD1: Provided with totally 60 frame/ second in 4 channels;

CIF: Provided with totally 120 frame/ second in 4 channels;

Mode: "VBR, CBR" are the 2 different encoding methods available in here. Using the cursor to select and press [Enter] to confirm this function:

VBR: Variable Bit Rate encoding method;

CBR: Constant (non-variable) Bit Rate encoding method;

OPERATION INSTRUCTION continued

Conversion Table for Image Quality and Encoding Rate

			Image Quality (Encode Rate Kbit/Second)								
			Sharpness	1	2	3	4	5	6	7	8
Encode Method	CBR	D1	Fixed	2400	2200	2000	1800	1600	1200	1000	800
		HD1	Fixed	1200	1100	1000	900	800	600	500	400
		CIF	Fixed	900	800	700	600	500	400	300	200
	VBR	D1	MAX	2400	2200	2000	1800	1600	1200	1000	800
			MIN	2000	1800	1400	1200	1000	800	600	400
		HD1	MAX	1200	1100	1000	900	800	600	500	400
CIF	MIN	900	800	700	600	500	400	300	200		
	MAX	900	800	700	600	500	400	300	200		
		MIN	600	600	500	400	300	200	200	100	

HDD Store Mode: "Centralize, Individual, Compound" are 3 different hard disk storing modes available in here. Using the cursor to select and press [Enter] to confirm this function:

- **Centralize:** All video signal and sound signals are stored into same one hard disk, and then continuously with the next hard disk after the current one becomes full.
- **Individual:** Each channel of video signal and sound signals are stored into a different hard disk, for example channel 1 recording into HDD1, and channel 2 recording into HDD2.
- **Compound:** Channel 1 and 2 video and sound signal only record into HDD1 and HDD2, taking into HDD1 first and then using HDD2 after the HDD1 is full. At the same meaning that, Channel 3 and 4 video signal and sound signal only recording into HDD3 and HDD4, taking into HDD3 first and then using HDD4 after HDD3 full.

Return: Using the cursor to select and press [Enter] to confirm back to main menu.

A-3 Timer Record Setting:

Highlight and select "Timer Record", then press [Enter] for this selection, the sub-menu will shown (as below).

GENERAL SETTINGS	
Record Settings	
Timer Record	
Motion Detection	
Alarm Record	
Channels	
Housings	
Network	
Language	
Exit	

Timer Record Settings		
Ch	Timer	Motion Mode
1	On Off	On Off
2	On Off	On Off
3	On Off	On Off
4	On Off	On Off

Timer Record: "On, Off" are the 2 different status settings. Use the cursor to select and press [Enter] to confirm this function. While timer selected, there will be 16 different setting tasks for timer setup in each channel (8 different day types, and 2 different period settings available for each type):

Channel 1 Timer Record Settings		
Date	Period 1	Period 2
Everyday	08:00-12:00	14:00-18:00
Mon	08:00-12:00	14:00-18:00
Tue	08:00-12:00	14:00-18:00
Wed	08:00-12:00	14:00-18:00
Thurs	08:00-12:00	14:00-18:00
Fri	08:00-12:00	14:00-18:00
Sat	08:00-12:00	14:00-18:00
Peak	08:00-12:00	14:00-18:00
Return		

OPERATION INSTRUCTION continued

- **Date:** Select either "Everyday", "Sun", "Mon", "Tue", "Wed", "Thu", "Fri", "Sat" and "Peak", when "Peak" time selected, the device will not use the stand-by function.
- **Period 1 and Period 2:** Select start time and end time.

Motion Mode: "On, Off" are the 2 different status settings to enable and disable this function respectively. Using the cursor to select and press [Enter] to confirm this function.

A-4 Motion Detection Setting:

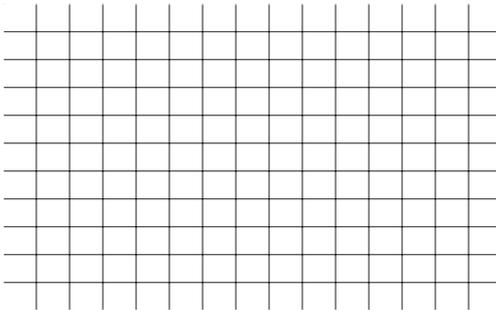
Highlight and select **Motion Detection**, then press [Enter] for this selection, the sub-menu will shown (as below), then select the required area.

GENERAL SETTINGS		
Record Settings		
Timer Record		
Motion Detection		
Alarm Record		
Channels		
Housings		
Network		
Language		
Exit		

Motion Detection		
Channel	Effective Region	Alarm
1	Settings	On
2	Settings	On
3	Settings	Off
4	Settings	Off
Return		

Effective Region: Use the cursor to select *Settings* and press [Enter] to confirm this function. Then there will be a region setting screen with full of square grid (as picture shown below), press [Setting] to get the detect area as full screen (all the grid squares will turn a light green square as selected) re-press [Setting] to cancel the selected areas (all grid squares will turn back to clear, and there will be purple flashing cursor right in the centre of screen for selection).

- Using the directional key to move purple cursor for selection. When the grid block being selected (press [Enter] to select), the block will turn light green.
- Cancel with re-press [Enter] key in the block.
- When there are objects moving in the selected region, the block will turn yellow and flashing. (This will activate the recording, if there had been pre-set already).



- **Alarm:** "On, Off" 2 different status settings. Using the cursor to select and press [Enter] to confirm this function.

A-5 Alarm Record Setting:

Highlight and select *Alarm Record*, then press [Enter] for this selection, the sub-menu will shown (as below), then select the required area.

GENERAL SETTINGS Record Settings Timer Record Motion Detection Alarm Record Channels Housings Network Language Exit		Alarm Record Settings	
Ch	Alarm	In_Mode	
1	On	Close	Alarm_Delay: 005s
2	Off	Open	Out_Delay: 005s
3	On	Open	Keep_Delay: 005s
4	Off	Open	Multi_Ch_Rec: On
			Multi_Ch_Output: On
Return			

Alarm: "On, Off" are the 2 different status settings available. Use the cursor to select and press [Enter] to confirm this function. While "On" is selected, there will be 16 different task settings for timer setup in each channel (8 different day types, and 2 different period settings available for each type):

Channel 1 Alarm Record Settings		
Date	Period 1	Period 2
Everyday	08:00-12:00	14:00-18:00
Mon	08:00-12:00	14:00-18:00
Tue	08:00-12:00	14:00-18:00
Wed	08:00-12:00	14:00-18:00
Thurs	08:00-12:00	14:00-18:00
Fri	08:00-12:00	14:00-18:00
Sat	08:00-12:00	14:00-18:00
Peak	08:00-12:00	14:00-18:00
Return		

- **Date:** Select either "Everyday", "Sun", "Mon", "Tue", "Wed", "Thu", "Fri", "Sat" and "Peak". When "Peak" time is selected, the device does not have the stand-by function.
- **Period 1 and Period 2:** Available to select the start time and end time.

In_Mode: "Open, Close" are the 2 different input modes for alarm signal input. When the alarm system is set to the "Close" option, when open signal starts, the alarm signal is produced. The input mode in here should be set as "Open".

Alarm_Delay: Key in the number key to setup the time delay (range from 0 to 300 seconds) for alarm recording (default setting as 10 seconds).

Out_Delay: Key in the number key to setup the time delay (range from 0 to 300 seconds) for alarm output (default setting as 10 seconds).

Keep_Delay: Key in the number key to setup time delay (range from 0 to 300 seconds) for alarm warning signal (default setting as 10 seconds).

For example: If an alarm is produced at 23:30:50 the device should start the recording from time 23:30:40 since the system per-recording time was set as 10 seconds. The system will release the alarm warning signal. Whole recording depends on the alarm time, per-recording alarm time and alarm warning signal to perform recording

Multi_Ch_Rec: "On, Off" are the 2 different status settings available. Use the cursor to select and press [Enter] to confirm this function. While "On" is selected, there will be 4 multiple channels interface display as shown below:

OPERATION INSTRUCTION continued

Multi_Ch_Rec: "On, Off" are the 2 different status settings available. Use the cursor to select and press [Enter] to confirm this function. While "On" is selected, there will be 4 multiple channels interface display as shown below:

Alarm Record Settings			
Ch	Alarm	In_Mode	
1	On	Close	Alarm_Delay: 005s
2	Off	Open	Out_Delay: 005s
3	On	Open	Keep_Delay: 005s
4	Off	Open	Multi_Ch_Rec: On
Multi_Ch_Output: On			
Return			

Multiple Channel Alarm Recording setting								
Alarm Channel								
	1	2	3	4	5	6	7	8
1	*	*						
2		*						
3	*		*					
4				*				
5								
6								
7								
8								
Return								

- **Horizontal Row:** Channel "1~8" (for 4 channels device only 4 available)
- **Vertical Column:** Alarm Channel "1~8" (for 4 channels device only 4 available)
- **"*"** : Press [Enter] to select and cancel this;
- **Example:** As seen from above, for the row 1, while alarm channel 1 received signal, the channel 1 and 2 start recording, channel 3 and 4 not taking any action.
- **Example:** For the row 2, while alarm channel 2 received signal, only channel 2 start recording, other channels not taking any action.

Multi_Ch_Output: "On, Off" 2 difference status setting. Using the cursor to select and press [Enter] to confirm this function. While "On" selected, there will be 4 multiple channels interface display as shown above.

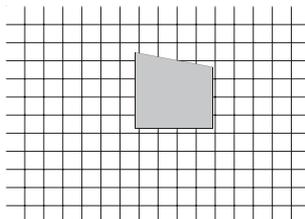
A-6 Channel Setting:

Highlight and select *Channels*, then press [Enter] for this selection, the sub-menu will shown (as below), then select the required area.

GENERAL SETTINGS
Record Settings
Timer Record
Motion Detection
Alarm Record
Channels
Housings
Network
Language
Exit

Channel Settings			
Channel	Title	Cover	Time Insert
1	Warehouse	Yes	Yes
2	Cash	No	No
3	Cash 2	No	No
4	Main Desk	No	No
Return			

- **Title:** Channel name. Use the cursor to select and press [Enter] to key-in the name and re-press [Enter] to confirm this function.
- **Cover:** "On, Off" 2 difference status setting. Using the cursor to select and press [Enter] to confirm this function. While "On" selected, there will be cover display setting as shown below:



OPERATION INSTRUCTION continued

- Use the directional key to move small yellow block selection. When 4 points of yellow block are produced there will be a region set up for the coverage setting area.

Time insert: "On, Off" are the 2 different status settings. Use the cursor to select and press [Enter] to confirm this function. While "On" selected, a system clock will be shown while recording.

A-7 Housing Setting:

Highlight and select *Housings*, then press [Enter] for the selection, the sub-menu will be shown (as below), then select the required area.

GENERAL SETTINGS			
Record Settings			
Timer Record			
Motion Detection			
Alarm Record			
Channels			
Housings			
Network			
Language			
Exit			

Housing Settings			
Channel	Protocol	BaudRate	No.
1	pelco-d	1200	01
2	pelco-p	2400	10
3	enkel	4800	25
4	ccr-20g	9600	63
Return			

Protocol: Using the cursor to select and press [Enter] to confirm difference protocol (pelco-d/p/02-15 etc.);

BaudRate: Using the cursor to select and press [Enter] select difference rate at 1200/2400/4800/9600;

No: Using the cursor to select and press [Enter] select difference housing number at (01~63).

A-8 Network Setting:

Highlight and select *Network*, then press [Enter] for this selection, the sub-menu will be shown (as below), then select the required area.

GENERAL SETTINGS	
Record Settings	
Timer Record	
Motion Detection	
Alarm Record	
Channels	
Housings	
Network	
Language	
Exit	

Network Settings	
IP Address:	029.010.001.100
Subnet mask:	255.255.255.000
Default gateway:	029.010.001.254
Transport protocol:	TCP/IP
Return	

- **IP Address:** Use the cursor to select and press [Enter] to enter the IP address.
- **Subnet mask:** Use the cursor to select and press [Enter] to enter the subnet mask at current location.
- **Default Gateway:** Use the cursor to select and press [Enter] select default gateway according to current IP address.
- **Transport protocol:** Use the cursor to select and press [Enter] select.

A-9 Language Setting:

Make sure that English is the default setting.

OPERATION INSTRUCTION continued

A-10

Exit:

Highlight and select *Exit*, then press [Enter] to confirm for save the change of setting then return back to main menu.

B. Info Menu

While system is in use, select [Info Menu] to check the menu content. The info menu can be seen as shown below, highlight the item for selection and then press [Enter] to confirm.

Info Menu	
All	Record
Alarm	Record
Alarm	Log
Operate	Log
Channel	Status
HDD	Status
Machine	Info
Exit	

B-1 All Record:

Highlight and select *All Record*, then press [Enter] for this selection, the sub-menu will shown (as below), then select the required channel and date, press "Start" to see the record at specific requirement.

Info Menu	
All	Record
Alarm	Record
Alarm	Log
Operate	Log
Channel	Status
HDD	Status
Machine	Info
Exit	

Input date and time of all record	
Channel:	01
Time:	2003/11/28, 23:30
Start	
Return	

After pressing enter, there will be a sub-menu shown (as below), and the calendar will display dates 1 to 31 as per selected month, move the cursor to select different dates in order to check the record and press [Enter] to view. A yellow font represents recording existence for this.

If no recording exists for certain date, "No exist record" will be displayed. Using page up ("UP") and down ("DO") (" +/- " key) for those more than 1 page recording list.

Channel 1 2003/11/28 Recording Info					
01	02	03	04	05	06
	07	08	09	10	11
12	13	14	15	16	17
	18	19	20	21	22
23	24	25	26	27	28
	29	30	31	UP	DO
CASH 1	08:30-09:00	R	CIF	25	
CASH 2	09:30-10:00	M	CIF	25	
FRONT	11:30-12:00	A	CIF	25	
CASH 1	17:00-18:00	R	CIF	25	

Channel 1 2003/11/29 Recording Info					
01	02	03	04	05	06
	07	08	09	10	11
12	13	14	15	16	17
	18	19	20	21	22
23	24	25	26	27	28
	29	30	31	UP	DO
NO EXIST RECORD					

- **Title:** Channel name.
- **Recording Time:** Period for the recording time, the length for each at 60 minutes.
- **Recording method:** "R" for timer record, "M" for manual record, "A" for alarm record.
- **Sharpness:** D1, HD1 and CIF to indicate the level of the recording information.
- **Frame Rate:** While in PAL video system, "25, 12, 06, 03, 01, 0.5" frame rate levels will available. While in NTSC video system, "30, 15, 08, 04, 02, 01" frame rate levels will be available.

OPERATION INSTRUCTION continued

Press [Enter] to see the recording video/audio signal, press [F1] for time select playback, and press [SLOW] for slow motion playback at a different speed. Press [FF] for fast forward playback and [FB] for fast backward playback, press [PAUSE] key to pause the video. [RETURN] to exit the playback window and back to main menu.

B-2 Alarm Record:

Highlight and select *Alarm Record*, then press [Enter] for this selection, the sub-menu will be displayed (as below). Then select the required channel and date, press "Start" to see the record at a specific requirement.

```
Info Menu
All      Record
Alarm   Record
Alarm   Log
Operate Log
Channel Status
HDD     Status
Machine Info
Exit
```

```
Input date and time of alarm record
Channel: 01
Time:    2003/11/28, 23:30
Start
Return
```

After pressing *Start* there will be a sub-menu shown (as below), and the calendar will display as well from date 1 to 31 at the selected month. Move the cursor to select different dates to check the record and press [Enter] to see. The dates shown in a yellow font are dates where there has been an alarm record.

When no recording exists for a certain date, "No exist record" will be displayed. Using page up ("UP") and down ("DO") ("+"/-" key) for dates when more than 1 page recording list is available.

Press [Enter] to see the recording video/audio signal. Press [F1] for time select playback, press [SLOW] for slow motion playback at different speeds. Press [FF] for fast forward playback and [FB] for fast backward playback, with [PAUSE] key to make the frame pause. Press [RETURN] to exit the playback window and back to main menu.

```
Channel 1 2003/11/28 Recording Info
01 02 03 04 05 06 07 08 09 10 11
12 13 14 15 16 17 18 19 20 21 22
23 24 25 26 27 28 29 30 31 UP DO
CASH 1 08:30-09:00 R CIF 25
CASH 2 09:30-10:00 M CIF 25
FRONT 11:30-12:00 A CIF 25
CASH 1 17:00-18:00 R CIF 25
WAREH 20:10-21:10 R CIF 25
RETURN
```

```
Channel 1 2003/11/28 Recording Info
01 02 03 04 05 06 07 08 09 10 11
12 13 14 15 16 17 18 19 20 21 22
23 24 25 26 27 28 29 30 31 UP DO
NO EXIST RECORD
RETURN
```

OPERATION INSTRUCTION continued

B-3 Alarm Log:

Highlight and select *Alarm Log*, then press [Enter] for this selection, the sub-menu will be shown (as below), this allows you to see the recent alarm status and report.

```
Info Menu
All           Record
Alarm        Record
Alarm Log
Operate      Log
Channel      Status
HDD          Status
Machine      Info
Exit
```

```
Alarm Log
2003/11/28, 23:30 Alarm at :1
Return Page Up Page Down First Page
```

B-4 Operate Log:

Highlight and select *Operate Log*, then press [Enter] for this selection, the sub-menu will be shown (as below), this allow to show the recent operate status and report.

```
Info Menu
All           Record
Alarm        Record
Alarm        Log
Operate Log
Channel      Status
HDD          Status
Machine      Info
Exit
```

```
Operate Log
2003/11/28, 23:30 Parameter Change
Return Page Up Page Down First Page
```

B-5 Channel Status:

Highlight and select *Channel Status*, then press [Enter] for this selection, the sub-menu will be shown (as below), this allows to show the 4 channel's status, including image quality, sharpness, frame rate.

```
Info Menu
All           Record
Alarm        Record
Alarm        Log
Operate      Log
Channel Status
HDD          Status
Machine      Info
Exit
```

```
Channel Status
Ch Status  Q  Size  Frames  Alarm  Motion
1 Record  2  D1   25     Alarm  Close
2 Idle    2  D1   25     Alarm  Close
3 Record  2  D1   25     Alarm  Close
4 Record  2  D1   25     Alarm  Close
Return
```

B-6 HDD Status:

Highlight and select *HDD Status*, then press [Enter] for this selection, the sub-menu will be shown (as below), this allow you to view the hard disk status for 4 channels, including total hard disk space and available space.

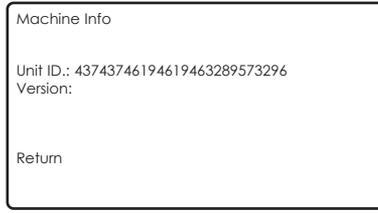
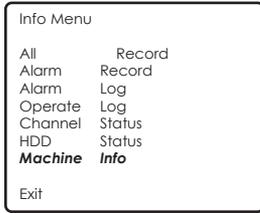
```
Info Menu
All           Record
Alarm        Record
Alarm        Log
Operate      Log
Channel      Status
HDD Status
Machine      Info
Exit
```

```
HDD Status
HDD  Status  Capacity  Free_Space
1    Work    040GB     012,000MB
2    None    000GB     000,000MB
3    Work    000GB     000,000MB
4    Record  000GB     000,000MB
Return
```

OPERATION INSTRUCTION continued

B-7 Machine Info:

Highlight and select *Machine Info*, then press [Enter] for this selection, the sub-menu will be shown (as below), this allow to show all the machine ID number and software version.



B-8 Exit:

Highlight and select *Exit*, then press [Enter] to confirm for save the change of setting then return back to main menu.

COMPACT FLASH CARD UPGRADE AND OPERATION INSTRUCTION

C-1 Compact Flash Card Upgrade:

1. Using a PC to make sure your Compact Flash card formatted into FAT32 format. (if not already in the FAT32 format).
2. Insert the Compact Flash card into the DVR CF Slot while the DVR is turned off.
3. Press [ON/OFF] button without release to switch on the power;
4. Within 2~3 seconds the LED light (SYS and POWER) should be flashing and that means that the upgrading is in progress.
5. Upgrading will take approx. 1 minute and both LEDs will turn off once upgrading has completed.
6. Turn off the device and then remove the Compact Flash card from the slot.
7. Restart the device and the new software should be installed.

C-2 Compact Flash Card Backup:

In order to copy the data from hard disk into the Compact Flash card, please follow the following procedures:

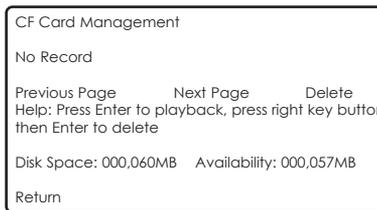
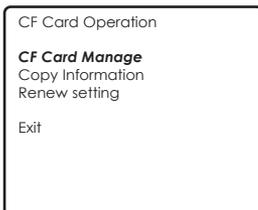
1. Insert the Compact Flash card into CF Slot before the DVR's power is on.
2. Power on the device and stop all recording activity.
3. Press the [CF card] button in remote control or front panel, this will allow the copying of all required information and data into Compact Flash card.
4. Re-Press the [CF card] button on the remote control or front panel to stop copying.

C-3 Playback Compact Flash Card Content:

In order to playback the data from the Compact Flash card, press [CF card] to enter the Compact Flash card menu and use the cursor to select operation:

C-3-1 Compact Flash card management:

Highlight and select *CF Manage*, then press [Enter] for this selection, the sub-menu will be shown (as seen below), this allows you to view all the information of the current CF card.



RECORDING AND PLAYBACK INSTRUCTION

D-1 Recording

Manual Recording:

1. Use the [Record] button to start recording, will be a red dot on the top right side corner of the monitor which indicates the recording is in progress.
2. Press the [Stop] button to stop the recording and the red dot will turn off.

Timer Recording:

Refer to section A-3

Remark: The Channel 1 timer setting has the "Peak" time setting (from number 16 option), the peak setting is not available for other channel. After the "Peak" had been selected, the device will not have any stand-by mode while no setting required.

Alarm Recording:

Refer to section A-4

Remark: When the device is in stand-by mode, there would be a 15~20 second time delay when the alarm recording activates and recording starts.

D-2 Playback

Playback all record:

Refer to section C-1

Playback Alarm record:

Refer to section C-2

Playback the recent record:

Press the [Play] button to playback current channel information;

D-3 Playback with time select

1. Use the [F1] button for current playback channel, to select the time for playback
2. Use the [Stop] button to stop the playback.

D-4 Stop Playback

1. Use the [Stop] button to stop the playback;

D-5 Slow Playback:

1. Use the [Slow] button to slow motion the playback, with speeds at 1/2, 1/4 or 1/8.
2. Use the [Play] button to return to normal speed.

D-6 Pause Playback and Frame by Frame playback

1. Use the [Pause] button to pause the motion.
2. While motion is paused, using [Pause] again to play frame by frame playback.
3. Press the [Play] button to return to normal speed.

D-7 Fast Forward

1. Press the [FF] button to perform fast forward playback, with speeds at X2 or X4.
2. Press the [Play] button to return to normal speed.

D-8 Fast Backward

1. Press the [FB] button to perform fast backward playback, with speed at X2 or X4.
2. Press the [Play] button to return to normal speed.

ADJUSTMENT FOR PICTURE PARAMETER AND SOUND LEVEL

E-1 Parameter adjustment

1. Use the [Adjust] button to adjust brightness, color, contrast and the motion detect sensitivity level.
2. Use the [+] or [-] button for adjustment up and down.
3. Returns to menu after 5 seconds idle time without any adjustment.

TECHNICAL SPECIFICATION DATA

E-1 Parameter adjustment

1. Use the [Adjust] button to adjust brightness, color, contrast and the motion detect sensitivity level.
2. Use the [+] or [-] button for adjust

System	UI Language	English/ Simplified Chinese/ Traditional Chinese		
	User Interface	Icon operation interface (OSD menu)		
	Security	User level passw ord, administer level passw ord		
	Video Input	4 independent input w ith 1.0Vp-p, 75Ω BNC		
Video	Video Output	1 PAL/NTSC output w ith 1.0Vp-p, 75Ω BNC, composite video 1 VGA output		
	Video Display	1 channel and 4 channels w ith difference display mode		
	Video Standard	PAL: 25 frames per second CCIR625 lines 50 Hz NTSC: 30 frames per second CCIR525 lines 60 Hz		
	System Resource	Real time recording w ith 1 channel playback and 4 channels monitoring Online real time monitor		
Audio	Audio Input	4 channels independent input, L, R Channels 600Ω RCA		
	Audio Output	1 channel from monitor mode, 1 channel from playback mode 600Ω RCA		
	Basic output	1.0—2.2V		
	S/N	?~30dB		
Digital Processing and Storing	Recording Format	Video and sound at same time		
	Compression	PCM		
	Encoding	MPEG-4 Variable encode rate \ Fixed encode rate		
	Image Format	CIF (352×288 pixels)	1/2D1 (704×288 pixels)	D1 (704×576 pixels)
	Video Standard	ISO14496		
	Audio Standard	PCM		
	Video Freq.	12.5K-112.5Kbyte/s	25K-150Kbyte/s	50K-300Kbyte/s
	Audio Freq.	8Kbyte/s		
	Audio Size Rate	28.8Mbyte/hour		
	Video Size Rate	45M-405Mbyte/hour	90M-540Mbyte/hour	180M-1080Mbyte/hour
Alarm	Storage	4 IDE hard disk, support 200G or larger hard disk size		
	Image Quality	8 Adjustable levels		
	Max Frame Rate	25 frames/ sec/ channel	12.5 frames/ sec/ channel	6.25 frames/ sec/ channel
	Resolution	Playback 352×288 pixels , Real time 704×576 pixels , VGA output 720×576 pixels	Playback 704×288 pixels , Real time 704×576 pixels , VGA output 720×576 pixels	Playback 704×576 pixels , Real time 704×576 pixels , VGA output 720×576 pixels
	Data capture	Bi-directional		
	Motion Detect	Independent setting w ith each channel, w ith 192 detect region for each channel and adjustable motion sensitivity		
	Input	4 independent input channels		
	Output	4 independent alarm output (2 voltage output, 2 open sw itch w ith output at 12VDC, 500MA)		
	Alarm mode	Open / Short		
	Com port	Serial Port	RS485, extendable w ith external modem	
Serial Port		RS232, common serial port		
Netw ork port		RJ-45 10M/100M boardband port		
Internet Protocol		Support TCP/IP, UDP/IP		
Com port	Transfer mode	Dial-up, ADSL, ISDN, internet, intranet		
	Browser	IE browser		

