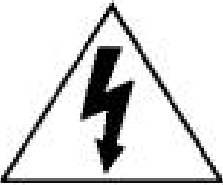



# DIGITAL VIDEO RECORDER

## USER MANUAL

Please read instructions thoroughly before operation and retain it for future reference.

# IMPORTANT SAFEGUARD

	<b>CAUTION</b> <b>RISK OF ELECTRIC SHOCK</b>	
<p><b>CAUTION:</b> To reduce the risk of electric shock, do not expose this apparatus to rain or moisture. Only operate this apparatus from the type of power source indicated on the label. The company shall not be liable for any damages arising out of any improper use, even if we have been advised of the possibility of such damages.</p>		

## Graphic Symbol Explanation



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



This 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.



All lead-free products offered by the company comply with the requirements of the European law on the Restriction of Hazardous Substances (RoHS) directive, which means our manufacture processes and products are strictly "lead-free" and without the hazardous substances cited in the directive.



The crossed-out wheeled bin mark symbolizes that within the European Union the product must be collected separately at the product end-of-life. This applies to your product and any peripherals marked with this symbol. Do not dispose of these products as unsorted municipal waste. Contact your local dealer for procedures for recycling this equipment.



This apparatus is manufactured to comply with the radio interference requirements.

## Disclaimer

We reserve the right to revise or remove any content in this manual at any time. We do not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of this manual. For the actual display & operation, please refer to your DVR in hand. The content of this manual is subject to change without notice.

The product & company names mentioned herein may be the registered trademarks or tradenames of their respective owners.

## MPEG4 Licensing

THIS PRODUCT IS LICENSED UNDER THE MPEG-4 VISUAL PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER FOR (i) ENCODING VIDEO IN COMPLIANCE WITH THE MPEG-4 VISUAL STANDARD ("MPEG-4 VIDEO") AND/OR (ii) DECODING MPEG-4 VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED BY MPEG LA TO PROVIDE MPEG-4 VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION INCLUDING THAT RELATING TO PROMOTIONAL INTERNAL AND COMMERCIAL USES AND LICENSING MAY BE OBTAINED FROM MPEG LA, LLC. SEE [HTTP://WWW.MPEGLA.COM](http://www.mpegla.com).

## GPL Licensing



This product contains codes which are developed by Third-Party-Companies and which are subject to the GNU General Public License ("GPL") or the GNU Lesser Public License ("LGPL").

The GPL Code used in this product is released without warranty and is subject to the copyright of the corresponding author.

Further source codes which are subject to the GPL-licenses are available upon request.

We are pleased to provide our modifications to the Linux Kernel, as well as a few new commands, and some tools to get you into the code. The codes are provided on the FTP site, and please download them from the following site or you can refer to your distributor:

<ftp://ftp.dvrtw.com.tw/GPL/AV071/>

## Version

Firmware: 1265-1012-1036-1018-M3-6C1B

Video Viewer: 0114

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# 1. SPECIAL NOTES

- VGA Output Resolution Support

This series has VGA interface built-in, and users are allowed to change the resolution depending on their display monitor.

Go to “ADVANCE” → “DISPLAY”, and move to “VGA OUTPUT” to select the VGA resolution you want. There are seven options as follows:

- 1). 800 x 600
- 2). 1024 x 768 (default)
- 3). 1280 x 1024
- 4). 1440 x 900
- 5). 1400 x 1050
- 6). 1680 x 1050
- 7). 1600 x 1200

---

**Note:** To have the best image quality on your LCD monitor, make sure (1) the selected DVR VGA output resolution is supported by your monitor, and (2) the VGA output settings on both the LCD monitor and DVR are consistent.

If the image is not positioned or scaled properly, please go to your monitor’s menu for adjustment. For details, please refer to the user manual of your LCD monitor.

---

- Power Supply

To ensure that your DVR works constantly and properly, it’s recommended to use an UPS, Uninterruptible Power Supply, for continuously operation. (Optional)

## 2. FRONT AND REAR PANELS

### 2.1 Front Panel

#### 1) LED Indicators

POWER: The DVR is powered on.

STANDBY: The DVR is in the standby mode.

HDD: The HDD is reading or recording.

HDD Full: The HDD is full.

ALARM: An alarm is triggered.

TIMER: Timer recording is turned on.

PLAY: The DVR is in the playback mode.

REC: The DVR is in the recording mode.

#### 2) USB port

To quickly backup or upgrade firmware/OSD, you can insert a compatible USB flash drive into this USB port.

Before using the USB flash drive, please use your PC to format the USB flash drive as "FAT32" first.

For the list of the compatible USB flash drives, please refer to "APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST" at page 31.

#### 3) EJECT

Press to open / close the DVD writer (optional).

#### 4) MENU

Press to enter the main menu.

#### 5) ENTER

Press to confirm the setting.

#### 6) SLOW

In the playback mode, press to slowly play the file.

#### 7) ZOOM

In the live or playback mode, press to enlarge the image of the selected channel.

#### 8)

Press to switch the channel display mode.

#### 9) SEQ.

Press to activate the sequence function, and press again to escape the sequence mode.

#### 10) AUDIO (SLOW + ZOOM)

Press "SLOW" + "ZOOM" to select live or playback sounds of the audio channels.

#### 11) PTZ ( + SEQ)

Press " + "SEQ" to enter / exit the PTZ control mode.

#### 12) 1 ~ 8 (for 8CH) or 1~16 (for 16CH)

Press one of the buttons to select the channel to display.

#### 13) LIST

To quick search the recorded files by events, press "LIST" to show the full list.

Select one item in the list, and press "ENTER" to playback the selected file.

#### 14) REC (Selected models only)

Press to activate manual recording if the manual recording function is turned off.

15) SNAP (Selected models only)

Press to take a snapshot picture of the current image and save it in the compatible USB flash drive.

**Note:** Before using this function, please insert a compatible USB flash drive to the DVR first. For the list of the compatible USB flash drives, please refer to "APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST" at page 31.

16) ▶ or PLAY

Press to play the latest recorded video clip.

17) || (PAUSE / UP / +) / ■ (STOP / DOWN / -) / ◀◀ (REW / LEFT) / ▶▶ (FF / RIGHT)

- In the playback mode, press PAUSE / STOP / REW / FF to pause / stop / fast rewind / fast forward the playback file.
- In the menu, press UP / DOWN / LEFT / RIGHT to move the highlight up / down / left / right. In the setting mode, press UP / DOWN to change the setting in the menu.

18) POWER or ⏻

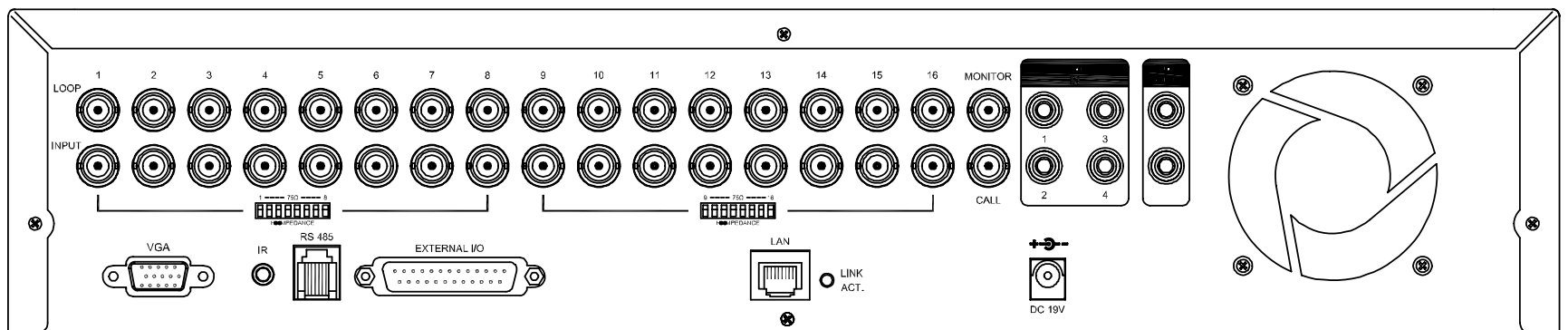
Press long enough to turn on/off your DVR.

**Note:** Under the recording mode, please stop recording before turning off your DVR.

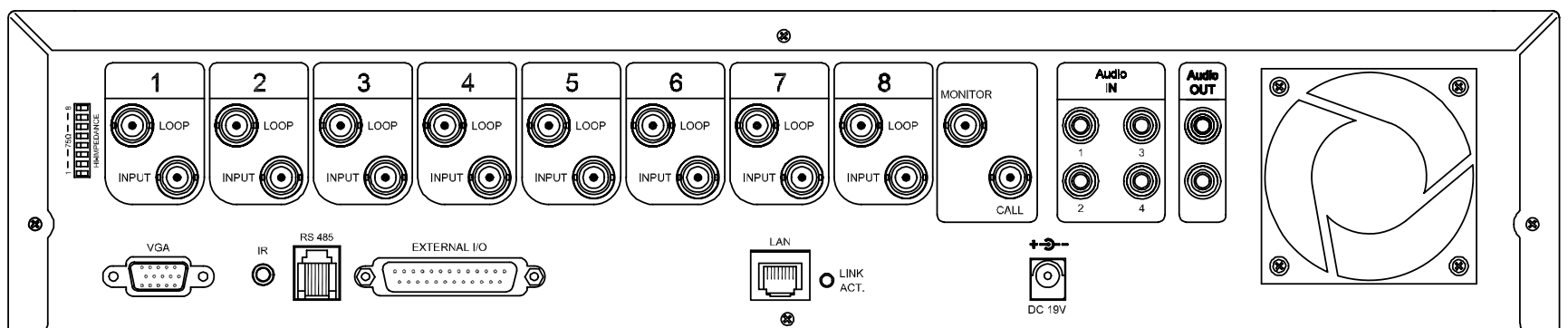
**Note:** To ensure that your DVR works constantly and properly, it's recommended to use an UPS, Uninterruptible Power Supply, for continuously operation. (Optional)

## 2.2 Rear Panel

### 16CH



### 8CH

1) 75Ω / HI-IMPEDANCE

When using LOOP function, set the impedance switch at your DVR rear panel to HI-IMPEDANCE to decrease interferences. Otherwise, switch to 75Ω.

**Note:** The default setting is **75Ω**.

2) LOOP / INPUT (1 ~ 16CH / 1 ~ 8CH)

LOOP: Video output connector.

INPUT: Connect to video sources, such as cameras.

---

**Note:** If you want to make a video backup with audio, please make sure whether your DVR supports the audio function, and connect audio cameras to the channels which support the audio function.

---

3) MONITOR

Connect to MAIN monitor for video output.

4) CALL

Connect to CALL monitor to show the channel display one by one.

When any alarm is triggered, CALL monitor will show the image of the triggered channel for a period of time.

5) Audio IN

Connect to audio sources, such as cameras equipped with the audio function.

Please get to know whether your DVR supports the audio function, and how many audio inputs are supported first.

---

**Note:** This DVR series supports four audio-in channels, which are Audio 1, Audio 2, Audio 3 and Audio 4 accordingly, and the audio data will be recorded with the video data of CH1, CH2, CH3 and CH4 respectively.

---

6) Audio OUT

Connect to an audio device, such as a microphone or speaker.

7) IR

Connect the IR receiver for remote control.

8) EXTERNAL I/O

Insert the supplied 25PIN DSUB to this port for connecting external devices (For example, external alarm).

For detailed I/O port PIN configuration, please refer to "APPENDIX 1 PIN CONFIGURATION" at page 28.

9) RS-485

Connect to external devices (such as a speed dome camera) with RS485-A and RS485-B wires.

10) VGA

Connect to a LCD monitor directly.

11) LAN

Connect to Internet by LAN cable.

12) LINK ACT.

When your DVR is connected to the Internet, this LED will be on.

13) DC 19V

Connect to the supplied adapter.

## 3. CONNECTION AND SETUP

### 3.1. HDD Installation

The HDD must be installed before the DVR is turned on.

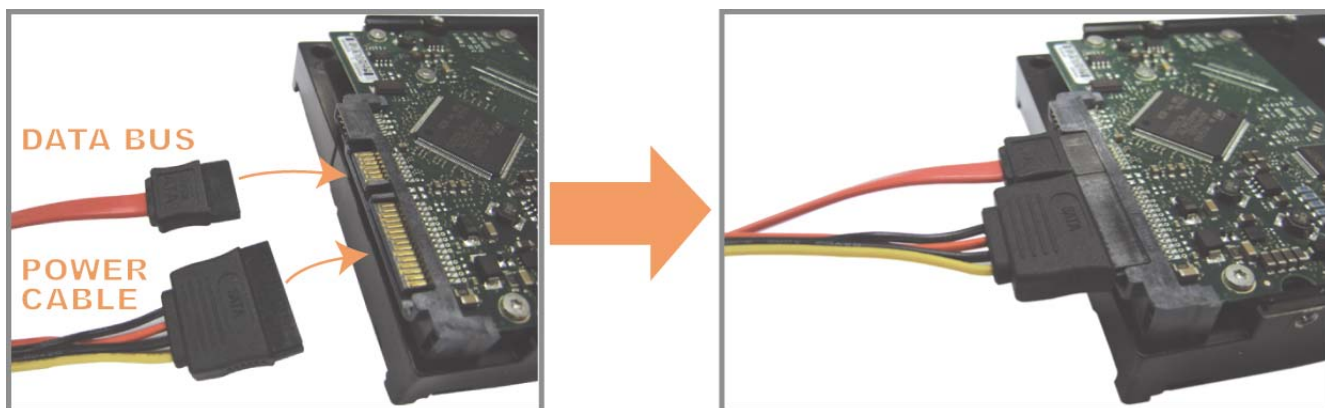
Step 1: Loosen the screws on the upper cover and open the upper cover of the DVR.

Step 2: With the rear panel facing you, there are three HDD brackets.

2-1: To install the HDD to the right bracket, slide the HDD with the PCB side facing up to the bracket, and fix it to the bracket with two screws for each side.

2-2: To install the HDD to the left or middle bracket, remove the bracket, and slide the HDD with the PCB side facing up to the bracket. Fix the HDD to the bracket with two screws for each side.

Step 3: Connect the power connector and data bus connector to the HDD(s) connected.



Step 4: For HDD installation to the left or middle bracket, replace the HDD bracket back to the DVR base. For HDD installation to the right bracket, skip this step.

Step 5: Close the upper cover of the DVR, and fasten all the screws you loosened in Step 1.

### 3.2 Camera Connection

The cameras must be connected and power-supplied **BEFORE** the DVR is turned on. The DVR will automatically detect the video system of the connected camera(s) (NTSC / PAL), and switch itself to the correct system.

Connect the camera with the indicated power supply, and connect the camera video output to the DVR video input port with a coaxial cable or RCA lines with BNC connectors.

---

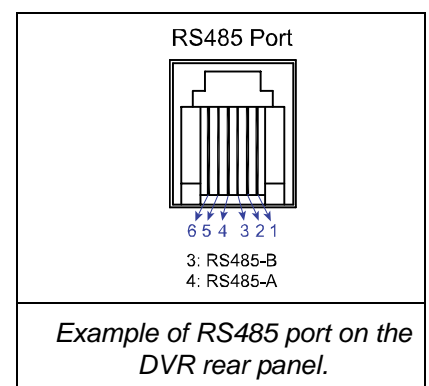
**Note:** For detailed DVR video input / output ports, please refer to "2.2 Rear Panel" at page 3.

For detailed camera operation, please refer to its own manual.

---

If you want to make a video backup with audio, please connect audio cameras to the channels which support the audio function. The audio channels are CH1, CH2, CH3 and CH4.

For speed dome cameras, make sure the RS485 control cable is connected correctly to the RS485 port on the DVR rear panel. For details, please refer to your speed dome camera user manual.



*Example of RS485 port on the DVR rear panel.*

### 3.3 Power Setup

This device should be operated only with the type of power source indicated on the manufacturer's label. Connect the indicated AC power cord to the power adapter, and plug into an electrical outlet. Press "POWER" or "⏻" on the front panel to turn on the DVR.

---

**Note:** To ensure that your DVR works constantly and properly, it's recommended to use an UPS, Uninterruptible Power Supply, for continuously operation. (Optional)


---






### 3.4 Date and Time Setting

Before operating your DVR, please set the date and time on your DVR **FIRST**.

**Note:** Please DO NOT change the date or time of your DVR after the recording function is activated. Otherwise, the recorded data will be disordered and you will not be able to find the recorded file to backup by time search. If users change the date or time accidentally when the recording function is activated, it's recommended to clear all HDD data, and start recording again.


**Note:** For the first time to use the DVR, please charge the DVR for at least 48 hours continuously after the date & time is set correctly.

Press "MENU" and enter the password to go to the menu list. The default admin password is 0000. Move to  and you can set the date / time / daylight saving in the "DATE" menu list.

QUICK START		
	CHANNEL TITLE EVENT STATUS DATE DISPLAY	ON ON ON
	IMAGE SIZE QUALITY IMAGE PER SECOND	CIF BEST 120
	RECORD TIMER DETECTION TIMER	OFF OFF
	DATE FORMAT DAYLIGHT SAVING	2007 / AUG / 08    21 : 30 : 00 Y / M / D OFF
	ADVANCE    ↑↓ SELECT    ← BACK    → NEXT    ↵ ENTER	

### 3.5 Password Setting

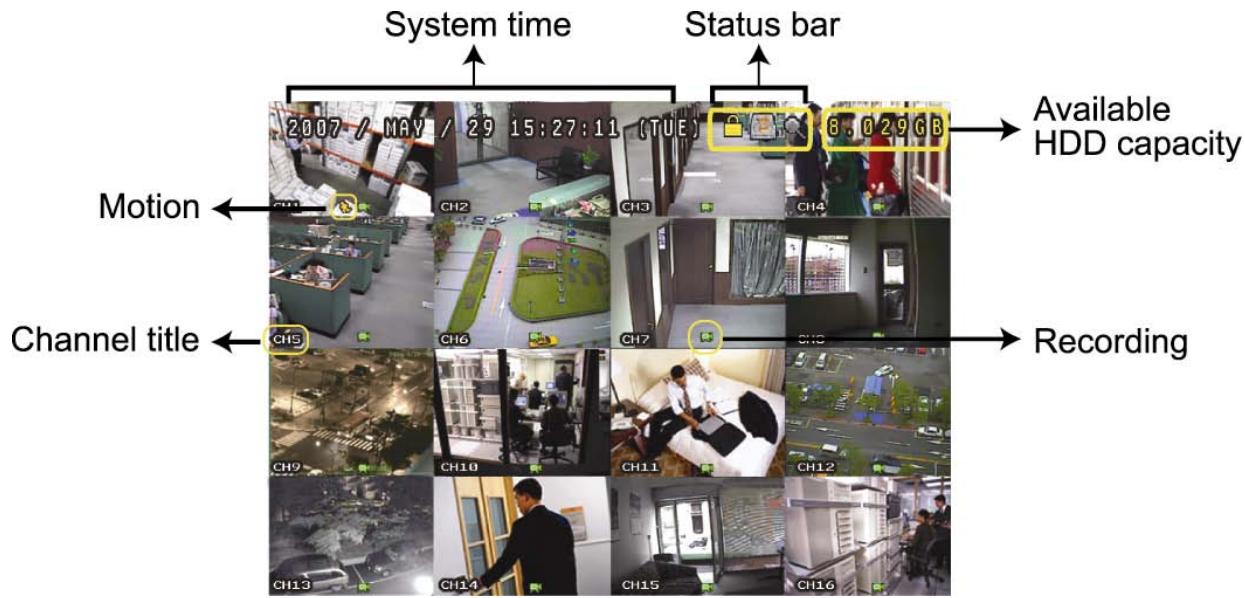
Press "MENU" and enter the password to go to the menu list. Then, Move to "ADVANCE" to enter the advanced setting menu.

In the "ADVANCE" menu, move to . Select "PASSWORD" and press "ENTER" to enter the submenu to set the password (four digits). The default admin password is 0000.

# 4. BASIC OPERATION

## 4.1 Live Page

In this live page of the DVR, you can see the live viewing of 1- / 4- / 9- / 16-cut screen.



Icon	Function	Icon	Function	Icon	Function	Icon	Function
	Key lock		Key unlock		1 <sup>st</sup> live audio channel		2 <sup>nd</sup> live audio channel
	3 <sup>rd</sup> live audio channel		4 <sup>th</sup> live audio channel		1 <sup>st</sup> playback audio channel		2 <sup>nd</sup> playback audio channel
	3 <sup>rd</sup> playback audio channel		4 <sup>th</sup> playback audio channel		Audio channel unselected		Digital zoom mode
	Digital zoom unselected		Timer recording		Motion		Recording
	Alarm		HDD overwrite		R.E.T.R. ON		R.E.T.R. Delay

## 4.2. Recording

When the recording and the pre-alarm function are activated, this device will overwrite 8GB data from the oldest for continuous recording without notice.

1) Manual Recording Icon

By defaults, when the DVR is properly connected with cameras and the HDD is installed, you can see (recording) on the screen.

2) Event Recording Icon

When the motion / alarm detection is activated, once motion or external alarm happens, you will see (motion) or (external alarm) on the screen.

3) Timer Recording Icon

When the timer record is activated, you will see the LCD light of "Timer" is on, and (timer) on the screen.

## 4.3. Playback

Press “▶” or “PLAY” on the DVR control panel, and the device will playback the latest recorded video.

---

**Note:** There must be at least 8192 images of recorded data for playback to work properly. If not, the device will stop playback. For example, if the IPS is set to 30, the recording time should be at least 273 seconds (8192 images / 30 IPS) for the playback to work properly.

---

### 1) Fast Forward / Fast Rewind

You can increase the speed for fast forward and rewind on this device. In the playback mode:

Press “▶▶” once to get 4X speed forward and press twice to get 8X speed, etc. And the maximum speed is 32X.

Press “◀◀” once to get 4X speed rewind and press twice to get 8X speed, etc. And the maximum speed is 32X.

---

**Note:** During playback, the image size of the recorded data (FRAME, FIELD or CIF) will be shown on the screen.

---

### 2) Pause / Image Jog

Press “PAUSE” to pause the playback.

In the pause mode:

Press “▶” once to get one frame forward.

Press “◀” once to get one frame rewind.

### 3) Stop

Press “■” under the playback mode, and the screen of this device will return to live monitoring mode.

### 4) Slow Playback

Press “SLOW” to get 1/4X speed playback and press twice to get 1/8X speed playback.

### 5) Audio Playback

In the playback mode, press “SLOW” + “ZOOM” to select the audio channel you want for audio playback.



Playback audio of the 1st audio channel



Playback audio of the 2nd audio channel



Playback audio of the 3rd audio channel



Playback audio of the 4th audio channel



The audio channel is not selected.

---

**Note:** If you want to make a video backup with audio, please make sure whether your DVR supports the audio function, and connect audio cameras to the channels which support the audio function (CH1, CH2, CH3 & CH4).


---

## 4.4. Search

### 1) Full Search

Press “LIST” on the DVR control panel to show the list for all types of the recorded files. Choose the log you want to see, and press “ENTER” to start playback.

### 2) Search by Time

Press “MENU” to enter the menu list, and go to “ADVANCE” → . Move to “QUICK SEARCH”, and press “ENTER” to enter the quick time search menu. You can search any specific events by time (Year / Month / Day / Hour / Min) and directly play the file you find.

## 4.5. Firmware / OSD Upgrade

### 1) By using USB flash drive

Step 1. Format the USB memory device as FAT32 format first.

Step 2. Get the upgrade files from your distributor and save the upgrade files in your USB flash device (do not change the file name).



Step 3. Insert your USB flash drive into the USB port. Wait till the DVR detects your USB flash drive.

Step 4. Press "MENU", and move to "ADVANCE" → "SYSTEM INFO". Select "UPGRADE" → "START", and press "ENTER".

Step 5. Select "YES", and press "ENTER" again to confirm upgrade.

### 2) By using the supplied software "Video Viewer"

Step 1. Save the upgrade files at your PC (do not change the file name), and log into Video Viewer.

Step 2. Click " (Miscellaneous Control) to show the miscellaneous control panel. In the miscellaneous control panel, click " (Tools) on the miscellaneous control panel to enter the upgrade window.

Step 3. Enter the user name, password, IP address and port number of the DVR.

Step 4. In "Update Server", click "Firmware" or "Language" tab as needed, and click "Add" to select the firmware or OSD files to upgrade.

Step 5. Click "Update Firmware" or "Update Language" to start the upgrade.

## 5. ADVANCED OPERATION

### 5.1. QUICK SEARCH

You can search any specific events by time and directly play the file you find from the DVR. Move to "QUICK SEARCH", and press "ENTER". You will see the following submenu items:

- 1) DATE  
Select the specific time period (YEAR / MONTH / DAY / HOUR / MIN) that you want to search.
- 2) SEARCH HDD  
Change to the HDD you want if there are more than 1 HDD in your DVR.
- 3) START  
Move to "START" and press "ENTER" to search and directly playback the recorded files.

In this menu list, you can set record settings. Press "MENU" on the front panel. The default admin password is **0000**. Enter the default password, and press "ENTER".

#### 5.2.1. Quick record setting

Move to "QUICK START" → "RECORD", and press "ENTER". The screen will show the following submenu items:

- 1) IMAGE SIZE  
Select FRAME, FIELD or CIF.
- 2) QUALITY  
Select one of the four quality options: BEST, HIGH, NORMAL and BASIC.
- 3) IMAGE PER SECOND  
Select the images per second for MANUAL RECORD.

#### 5.2.2. Detailed record setting

Move to "ADVANCE" → "RECORD", and press "ENTER". The screen will show the following submenu items:

- 1) MANUAL RECORD ENABLE  
Start / stop the manual recording function.
- 2) EVENT RECORD ENABLE  
Start / stop the event recording function. When this function is enabled, the recording will be triggered by any motion or external alarm.
- 3) TIMER RECORD ENABLE  
Start / stop the timer recording that is activated according to the scheduled time
- 4) EVENT RECORD IPS  
Select the images per second for EVENT RECORD (Recording that is triggered by alarm or motion).
- 5) TIMER RECORD IPS  
Select the images per second for TIMER RECORD (Recording that is activated according to the scheduled time.).

6) PRE-ALARM RECORD

Select to enable or disable the pre-alarm function (ON / OFF).

When pre-alarm and event recording functions are both activated, the DVR will record 8MB data before an alarm / motion event is triggered.

7) OVERWRITE

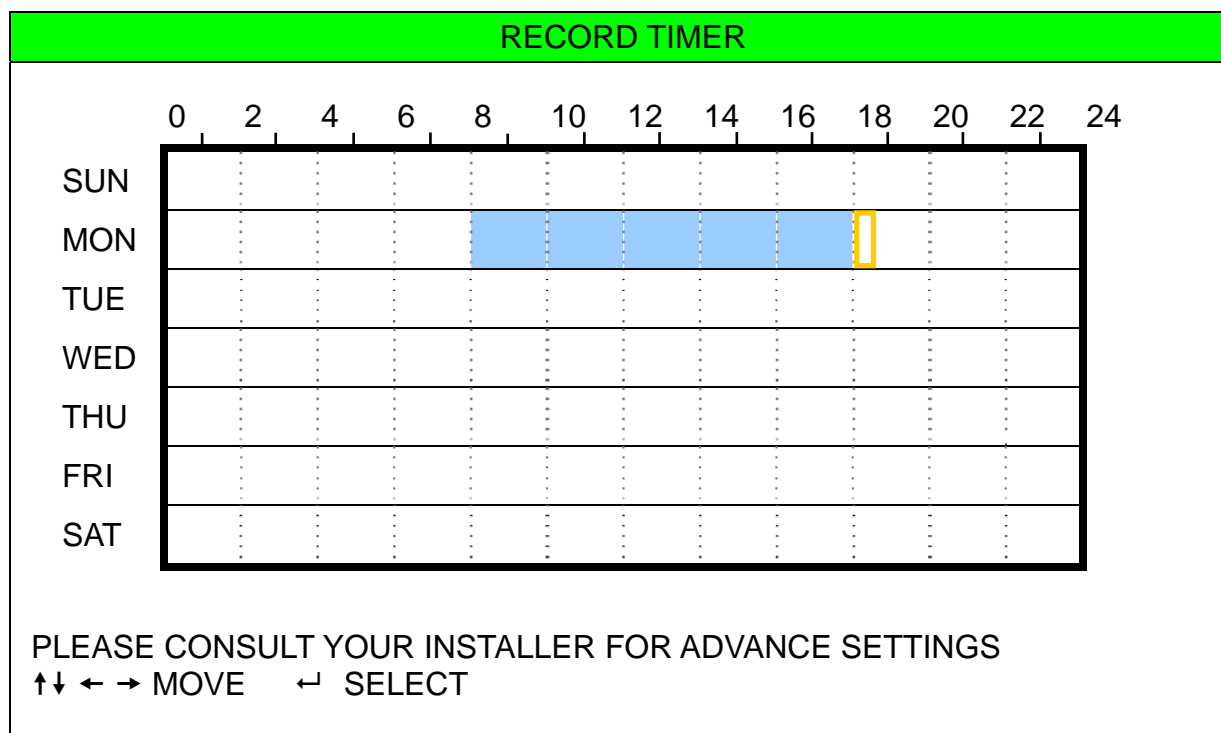
Select to overwrite previous recorded data in your HDD. When the HDD is full under the O/W recording mode, the DVR will clear 8GB data from the oldest for continuous recording without notice.

**5.3. TIMER**

In this menu list, you can schedule different sets of time for recording and detection function. Move to "TIMER", and press "ENTER". Select to enable (ON) or disable (OFF) the recorder timer and / or detection timer functions.

1) RECORD TIMER

Press "UP" / "DOWN" to change the setting (ON / OFF). When it's set to "ON", press enter button to go to its submenu for further settings.



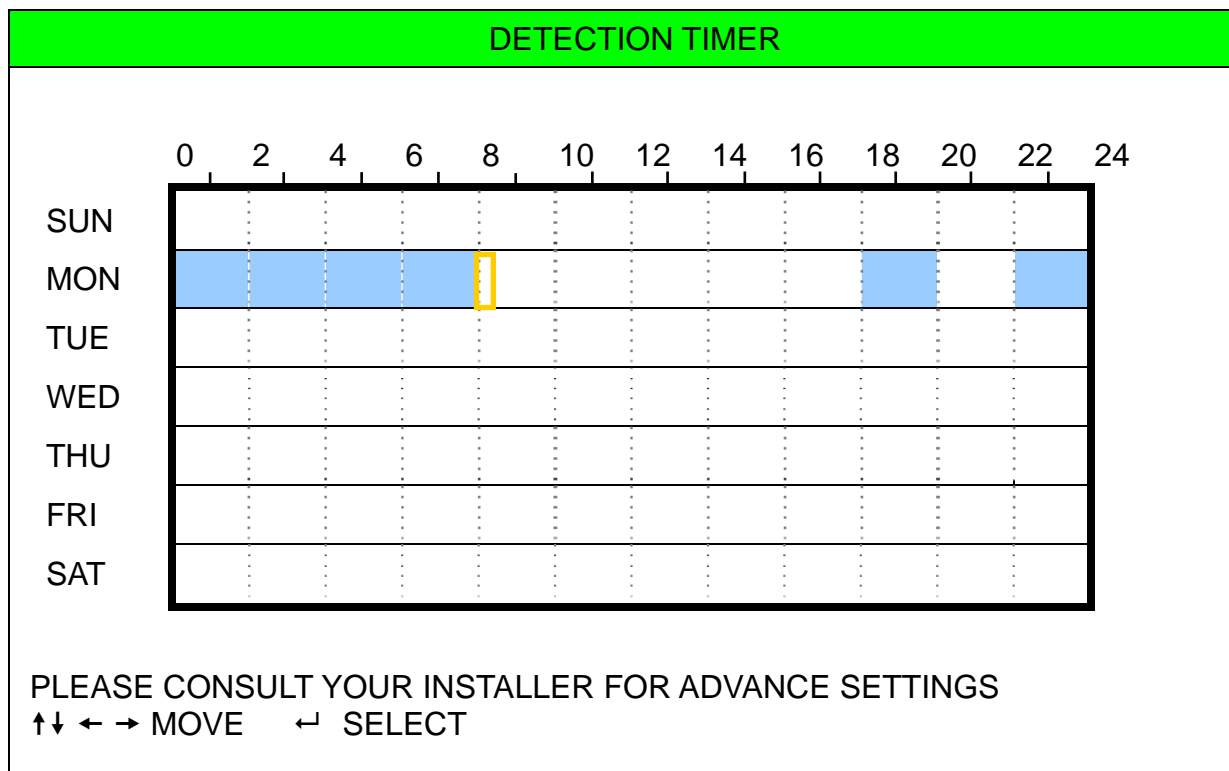
X axis        0 ~ 24 hours. Each time interval within a square is two hours (divided into four 30-minutes).

Y axis        Monday ~ Sunday.

Operation    Move to the start time point, and press enter to set the start time point (marked in red color). Then, press ▲ / ▼ / ◀ / ▶ to set the timer-recording schedule. After setup, press "ENTER" again to create an ending time point (marked in yellow color) and press "MENU" to exit.

2) DETECTION TIMER

Press "UP" / "DOWN" to change the setting (ON / OFF). When it's set to "ON", press enter button to go to its submenu for further settings.



X axis            0 ~ 24 hours. Each time interval within a square is two hours (divided into four 30-minutes).  
 Y axis            Monday ~ Sunday.  
 Operation        Move to the start time point, and press enter to set the start time point (marked in red color). Then, press ▲ / ▼ / ◀ / ▶ to set the timer-recording schedule. After setup, press “ENTER” again to create an ending time point (marked in yellow color) and press “MENU” to exit.

**Note:** This function here is only for detection timer setup and activation.

## 5.4. DETECTION

In this submenu, you can set up detection-related functions.

Move to “DETECTION”, and press “ENTER”. You will see the following screen:

DETECTION							
TITLE	DET	AREA	LS	SS	TS	RE	ALARM
CH1	OFF	SETUP	07	03	02	10	OFF
CH2	OFF	SETUP	07	03	02	10	OFF
CH3	OFF	SETUP	07	03	02	10	OFF
CH4	OFF	SETUP	07	03	02	10	OFF
CH5	OFF	SETUP	07	03	02	10	OFF
CH6	OFF	SETUP	07	03	02	10	OFF
CH7	OFF	SETUP	07	03	02	10	OFF
CH8	OFF	SETUP	07	03	02	10	OFF
CH9	OFF	SETUP	07	03	02	10	OFF
CH10	OFF	SETUP	07	03	02	10	OFF
NEXT							
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS							
↑↓ SELECT   ← BACK   → NEXT   ↵ ENTER							

The submenu items are described below:

- 1) TITLE  
Show the camera title of each channel set in “CAMERA”.
- 2) DET  
Select if you want to activate the motion detection function for the selected channel (ON/OFF).

3) AREA

There are 16 × 12 grids per camera for all channels. Pink blocks represent the area that is not being detected while the transparent blocks are the area under detection.

Press “ENTER” on the control panel of the DVR to set the detection area. You will see similar screens as the following:



Transparent blocks are the area under detection.



Press “ENTER” to confirm the start area.



Press ◀ / ▶ to choose the width of the detection area.



Press ▲ / ▼ to choose the height of the area.



You can also set up multi-detection area.



When any movement is detected, you will see the grids are flashing.

4) LS (Level of Sensitivity)

“LS” is to set the sensitivity of comparing two different images. The smaller the value is, the higher sensitivity for motion detection. The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default value is 07.

5) SS (Spatial Sensitivity)

“SS” is to set the sensitivity for detecting the size of one object (the number of the grids) on the screen. The smaller the value is, the higher sensitivity for motion detection.

The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default setting is 03.

---

**Note:** The default setting of SS is 03, which means once an object is detected more than 3 grids, the system will get triggered. So the value of SS must be less than the number of grids that you set up for the motion detection area.

---

6) TS (Time of Sensitivity)

“TS” is to set the sensitivity regarding how long one object stays in the detection area and triggers the recording. The smaller the value is, the higher sensitivity for motion detection.

The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default setting is 02.

7) RE (Reference)

“RE” is to set a reference for detection. The default value is 10, which means the DVR will compare 10 continuous images at one time according to the sensitivity of LS, SS, TS simultaneously.

The bigger the value is, the higher sensitivity for motion detection. The highest sensitivity is 61.

8) ALARM

Select N.C. / N.O. for the alarm polarity. The default alarm value is OFF.

## 5.5. REMOTE

In this menu list, you can set up remote devices to work properly.

Move to “REMOTE”, and press “ENTER”. You will see a similar screen as the following:

REMOTE				
TITLE	DEVICE	ID	PROTOCOL	RATE
01	CAMERA	000	NORMAL	02400
02	PTZ	255	P-D	02400
03	CAMERA	000	NORMAL	02400
04	CAMERA	000	NORMAL	02400
05	CAMERA	000	NORMAL	02400
06	CAMERA	000	NORMAL	02400
07	CAMERA	000	NORMAL	02400
08	CAMERA	000	NORMAL	02400
09	CAMERA	000	NORMAL	02400
10	CAMERA	000	NORMAL	02400
NEXT				
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS				
↑↓ SELECT   ← BACK   → NEXT   ↵ ENTER				

The submenu items are described below:

- 1) TITLE  
Show the camera title of each channel set in "CAMERA".
- 2) DEVICE  
Select the device type (CAMERA / PTZ) according to the connected camera for each channel.
- 3) ID  
Set the ID number (0 ~ 255) for a PTZ camera.  
After connecting to a PTZ camera correctly, the default ID of the PTZ camera will be shown on the screen.
- 4) PROTOCOL  
Select NORMAL (our protocol), P-D (PELCO-D) or P-P (PELCO-P) protocol.
- 5) RATE  
Set the baud rate of connected PTZ camera (2400 / 4800 / 9600 / 19200 / 57600 / 115200).


---





**Note:** Please make sure the baud rate setting in the PTZ camera is the same as the setting here.

---

## 5.6. SYSTEM INFO

In this menu list, you can check or change some system settings.

Move to , and you will see a similar screen as the following:

SYSTEM INFO		
	SERIAL TYPE	RS485
	BAUD RATE	2400
	HOST ID	0
	PASSWORD	XXXX
	RESET DEFAULT	RESET
	CLEAR HDD	HDD-MASTER-1
	UPGRADE	START
	R.E.T.R. (MIN)	01
	AUTO KEYLOCK (SEC)	30
	LANGUAGE	ENGLISH
	VIDEO FORMAT	NTSC
	VERSION	1265-1012-1036-1018-M3-6C1B
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS		
↑↓ SELECT   ← BACK   → NEXT   ↵ ENTER		

The submenu items are described below:

- 1) SERIAL TYPE  
Here shows the serial type of the DVR (RS-485).
- 2) BAUD RATE  
Set the baud rate of the DVR (2400 / 9600 / 19200 / 38400 / 57600 / 115200).
- 3) HOST ID  
Set the ID of the DVR (0 ~ 254).
- 4) PASSWORD  
Reset the password for accessing the DVR system. You can set the 4-digit password.
- 5) RESET DEFAULT  
Press "ENTER" to reset all settings as default, and select "YES" to confirm or "NO" to cancel.
- 6) CLEAR HDD  
Select the HDD you want to clear. Press "ENTER" and select "YES" to confirm to clear HDD or "NO" to cancel.
- 7) UPGRADE (For upgrading firmware / OSD)  
Before using the USB flash drive, please use your PC to format the USB flash drive as FAT32 format first. Then, save the upgrade file in a compatible USB flash drive, and insert it into the USB port at the front panel.  
Press "ENTER" and select "YES" to confirm upgrade or "NO" to cancel.

---

**Note:** For the list of compatible USB flash drives, please refer to "APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST" at page 31.

---

- 8) R.E.T.R. (MIN)  
Select the timeout after which the R.E.T.R. function will be activated (01 / 03 / 05 / 10 / 20).  
This timeout function can only be activated from the supplied IR remote controller.
  - **R.E.T.R. On**  
Press the R.E.T.R. key on the IR remote controller to enable the timeout function. Key in the password, and the R.E.T.R. delay icon "R.E.T.R." (in green background) will be shown on the screen. When the RETR function is activated, the R.E.T.R. on icon "R.E.T.R." (in red background) will be shown on the screen.
  - **R.E.T.R. Off**  
Press any key (except "POWER") and enter the password to turn off the RETR function.
- 9) AUTO KEYLOCK (SEC)  
Set the time-out in second after which the key lock function is activated (NEVER / 30 / 60 / 120).
- 10) LANGUAGE (Multilingual OSD)  
Select the language of the OSD.
- 11) VIDEO FORMAT  
Here shows the information of the DVR video system (NTSC / PAL).

---

**Note:** The DVR will automatically detect and switch to the video system (NTSC / PAL) that is the same as the connected video input devices, such as cameras. To detect and switch to the correct video system, the cameras must be connected and power-supplied BEFORE the DVR is turned on.

---

- 12) VERSION  
Here shows the firmware version information.

## 5.7. NETWORK

In this menu list, you can set up the network.

Move to "NETWORK", and press "ENTER" button to enter the submenu. The submenu items are described below.

### 5.7.1. STATIC

1) NETWORK TYPE

Select the network type as STATIC and set all the information needed in the DVR.

2) NETWORK INFORMATION (IP / GATEWAY / NETMASK)

Key in all the network information obtained from your ISP (Internet Service Provider).

3) DNS (PRIMARY DNS / SECONDARY DNS)

Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

4) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

See the example below:

STATIC	
NETWORK TYPE	STATIC
IP	192 . 168 . 001 . 012
GATEWAY	192 . 168 . 001 . 254
NETMASK	255 . 255 . 252 . 000
PRIMARY DNS	168 . 095 . 001 . 001
SECONDARY DNS	139 . 175 . 055 . 244
PORT	0080
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING	
↑↓ SELECT   ← BACK   → NEXT   ↵ ENTER	

### 5.7.2. PPPOE

1) NETWORK TYPE

Select the network type as PPPOE.

2) USER NAME / PASSWORD

Set the "username" and "password" subscribed from your ISP supplier

3) DNS (PRIMARY DNS / SECONDARY DNS)

Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

4) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

See the example below:

PPPOE	
NETWORK TYPE	PPPOE
USER NAME	EMPTY
PASSWORD	EMPTY
IP	000 . 000 . 000 . 000
GATEWAY	000 . 000 . 000 . 000
NETMASK	000 . 000 . 000 . 000
PRIMARY DNS	168 . 095 . 001 . 001
SECONDARY DNS	139 . 175 . 055 . 244
PORT	0080
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING	
↑↓ SELECT   ← BACK   → NEXT   ↵ ENTER	

**Note:** The PPPOE function needs to have one “username” and one “password” subscribed from one ISP supplier, and a “DDNS account” to correspond the dynamic IP address to a specific “Hostname”.

### 5.7.3. DHCP

1) NETWORK TYPE

Select the network type as DHCP.

2) DNS (PRIMARY DNS / SECONDARY DNS)

Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

3) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

See the example below:

DHCP	
NETWORK TYPE	DHCP
IP	000 . 000 . 000 . 000
GATEWAY	000 . 000 . 000 . 000
NETMASK	000 . 000 . 000 . 000
PRIMARY DNS	168 . 095 . 001 . 001
SECONDARY DNS	139 . 175 . 055 . 244
PORT	0080
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING	
↑↓ SELECT   ← BACK   → NEXT   ↵ ENTER	

**Note:** This DHCP function needs to be supported by a router or a cable modem network with DHCP services, and a “DDNS account” to correspond the dynamic IP address to a specific “Hostname”, for this function to work properly.

## 5.8. BACKUP

In this menu list, you can choose to make a copy for a specified period time to a compatible USB flash drive for your own purpose.

The backup file can be played directly in your PC via the supplied licensed software “Video Viewer”. For details, please refer to “Playback” at page 23.

**Note:** Before making a video backup with audio, you need to make sure whether there’s any audio camera connected to the channel which supports audio recording, and there’s any recorded data for the channel.

### 5.8.1. USB BACKUP

Before making USB backup, please check if:

- a) The USB flash drive is supported by your DVR. If not, the message “USB ERROR” will be shown on the screen.  
For the list of the compatible USB flash drives, please refer to “APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST” at page 31.
- b) The format of your USB flash drive must be "FAT 32". If not, please format it to “FAT 32” in your PC.
- c) There is no data in the USB flash drive. If yes, it’s recommended to clear all data in the USB flash drive before starting the backup.

**Note:** When USB backup starts, it’s not allowed for OSD menu operation or network backup in order to keep the consistency of the video data.

**Note:** You can backup up to 2GB video data for one-time USB backup. To backup more data, please set the time & channel(s) you want, and start USB backup again.

Move to “USB BACKUP”, and press “ENTER”. You will see a similar screen as the following:

USB BACKUP								
START TIME	2007 / MAY / 31			13:00:05				
END TIME	2007 / MAY / 31			13:10:05				
AVAILABLE SIZE	1960.0MB							
CHANNEL	<input checked="" type="checkbox"/>	01	<input type="checkbox"/>	02	<input type="checkbox"/>	03	<input type="checkbox"/>	04
	<input type="checkbox"/>	05	<input type="checkbox"/>	06	<input type="checkbox"/>	07	<input type="checkbox"/>	08
	<input type="checkbox"/>	09	<input type="checkbox"/>	10	<input type="checkbox"/>	11	<input type="checkbox"/>	12
	<input type="checkbox"/>	13	<input type="checkbox"/>	14	<input type="checkbox"/>	15	<input type="checkbox"/>	16
HDD NUM	ALL HDD							
START								
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS								
↑↓ SELECT   ← BACK   → NEXT   ↵ ENTER								

Move to “BACKUP”, and press “ENTER”. You will see the following submenu items:

- 1) START TIME  
Select the start time of the backup.
- 2) END TIME  
Select the end time of the backup.
- 3) AVAILABLE SIZE  
Display the available capacity in the inserted USB flash drive.
- 4) CHANNEL  
Select channels by pressing “ENTER” button to change the symbol in front of the channel number.  
Symbol “  ” means that this channel is selected to backup.  
Symbol “  ” means that this channel is not selected to backup.
- 5) HDD NUM  
Select the HDD containing the data you need.
- 6) START  
Press “ENTER” to start copying the chosen data to the USB flash drive.

**Note:** This DVR series supports four audio-in channels, which are Audio 1, Audio 2, Audio 3 and Audio 4 accordingly, and the audio data will be recorded with the video data of CH1, CH2, CH3 and CH4 respectively.

### 5.8.2. DISK BACKUP (Selected models only)

Before making disk backup, please check if the type of your DVD is DVD-R. The maximum number of backup files in the CD or DVD is 41.

**Note:** During the backup process, a file player will also be copied into your disk, and you will see a message "BACKUP PLAYER" shown on the screen.

Move to "DISK BACKUP", and press "ENTER". You will see a similar screen as the following:

DISK BACKUP				
START TIME	2008 / APR / 24		19:00:05	
END TIME	2008 / APR / 24		21:00:05	
AVAILABLE SIZE	3.79 GB			
CHANNEL	<input checked="" type="checkbox"/> 01	<input type="checkbox"/> 02	<input type="checkbox"/> 03	<input type="checkbox"/> 04
	<input checked="" type="checkbox"/> 05	<input type="checkbox"/> 06	<input type="checkbox"/> 07	<input type="checkbox"/> 08
	<input checked="" type="checkbox"/> 09	<input type="checkbox"/> 10	<input type="checkbox"/> 11	<input type="checkbox"/> 12
	<input checked="" type="checkbox"/> 13	<input type="checkbox"/> 14	<input type="checkbox"/> 15	<input type="checkbox"/> 16
HDD NUM	ALL HDD			
START				
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS				
↑↓ SELECT   ← BACK   → NEXT   ↵ ENTER				

The submenu items and their functions are almost the same as USB BACKUP. For the description of the submenu items, please refer to the previous page.

The process below describes how to make a disk backup:

- Press "EJECT" to open the disk tray. Put a CD or DVD into the DVD writer, and press "EJECT" again to close the disk tray.

**Note:** Check if the type of your CD or DVD is CD-R or DVD-R. The maximum number of backup files in the CD or DVD is 41.

- Press "MENU", and go to "ADVANCE" → "BACKUP". Select "DISK BACKUP", and you will see the submenu items almost the same as USB BACKUP.  
For the description of the submenu items, please refer to "5.8.1. USB BACKUP".
- Set the start time, end time, channels and HDD.
- Move to "START", and press "ENTER" to start backup.  
While disk backup is processing, users will see the backup completed percentage on the screen.
- After disk backup is completed, "BACKUP SUCCESS" will be prompted on the screen. Press "EJECT" to eject the disk tray and get your disk.
- Put the CD or DVD into the DVD-ROM drive of your PC. Find the file player installer, "PLAYER.EXE". Double-click the installer to install the file player by following the on-screen instructions. Then, double click any backup file to play it directly in your PC and see if the backup is successful.

**Note:** The supported PC operating systems are Windows Vista, XP & 2000.

## 6. REMOTE OPERATION

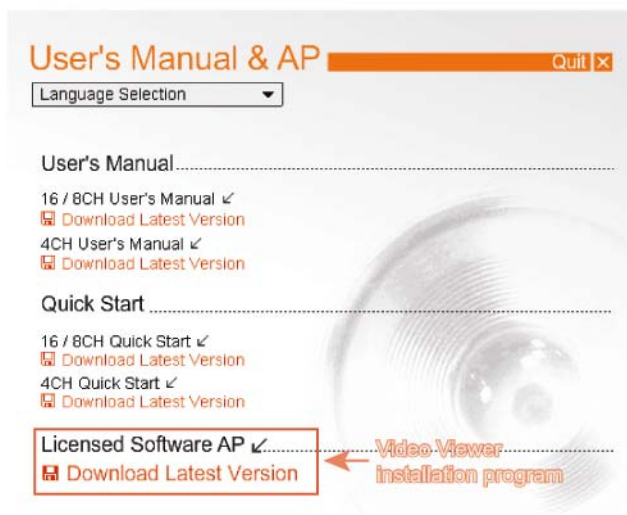
You can also control the DVR remotely via the supplied licensed software “Video Viewer” (hereafter called the “Video Viewer”), IE web browser, and Apple’s QuickTime player **ONLY** when your DVR supports the network function.

### 6.1. Video Viewer


#### 6.1.1. Installation & Network Connection

##### 1) Install the software

Step1: Place the supplied CD into your CD-ROM or DVD-ROM drive. The program will be automatically run.







Step2: Click “Licensed Software AP” to install Video Viewer, or click “Download Latest Version” under “Licensed Software AP” to download the latest version of Video Viewer from the Internet.




Step3: follow the on-screen instructions to finish the installation. When the installation is completed, a shortcut icon “” will be placed on your PC desktop.

##### 2) Network Connection


###### ➤ Local Connection (via LAN)

- Connect the DVR to your PC via a RJ-45 network line. The default DVR IP address is “192.168.1.10”, and the default user name and password are both “admin”.
- Set the PC’s IP address as “192.168.1.XXX” (1~255, except 10) in order to make the PC and DVR under the same domain.
- Double-click “” icon on your PC desktop to enter the control panel. By defaults, the “Address Book” () panel will be displayed on the right side of the control panel.
- Click “” (Address Book) → “” (Add) button to key in the default IP address, user name, password, and port number of the DVR you intend to connect.

OR

- Click “” (Search) → “” (Refresh) to search the available IP address(es) of other DVR(s) under the same domain as your PC’s IP address. The found address(es) will be listed, and can be added into the address book by clicking “” (Add into address book).
- Double-click the IP address you just added into the address book to log in. When you’re logged in, the “Event” panel will be shown by defaults.

###### ➤ Remote Connection (via Internet)

- Double-click “” icon on your PC desktop to enter the control panel. By defaults, the “Address Book” panel

will be displayed on the right side of the control panel.

- b) Click "Address Book" (Address Book) → "Add" button to key in the IP address, user name, password, and port number of the DVR you intend to connect.

The default DVR values are as follows:

Item	Default Value
IP address	192.168.1.10
User name	admin
Password	admin
Port	80

OR

Click "Search" (Search) → "Refresh" (Refresh) to search the available IP address(es) of other DVR(s) under the same domain as your PC's IP address. The found address(es) will be listed, and can be added into the address book by clicking "Add into address book" (Add into address book).

- c) Double-click the IP address you just added into the address book to log in. When you're logged in, the "Event" panel will be shown by defaults.

### 6.1.2. Control Panel

After setting up the network information, login user name and password, double-click "Eye" on the PC desktop to open and log into the control panel. You will see a screen similar to the following with 7 major sections:










Button	Function	Description
	Address Book	Click to show the predefined IP address(es). You can add, remove or search the IP address to log in the DVR remotely. Two sub-functions are available for this button: Address Book and Search.
	Miscellaneous Control	Click to show the main operation functions: audio volume control (except for 4CH DVR model without a fan), color setting, backup, DVR setting, upgrade, and find event logs.
	Record On / Off	Click to start / stop the manual recording.
	Snapshot	Click to take a snapshot of the current view. The snapshot will be saved in the path you specified in "Record Setting".
	Information	Click to show the current network connection details.
	DVR Control	Click to go to the DVR control panel to operate the DVR remotely.

## Miscellaneous Control



Click “” (Miscellaneous Control) on the control panel, and 7 functions are available as follows:

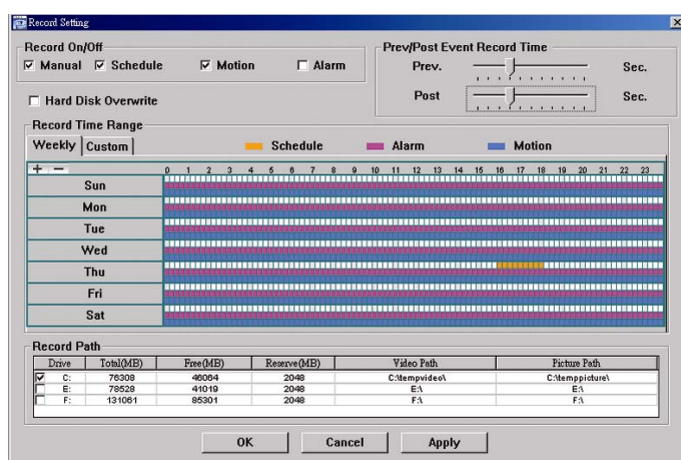


Button	Function	Description
	Volume Adjustment	Click & drag the slider to adjust the volume of the live audio.
	Color Setting	Click this button to adjust the brightness / contrast / hue / saturation for a single channel or the whole channels.
	Backup	To make a video backup remotely, click this button, and you will go to the download setting page.
	Record Setting	Click to go to the detailed record setting.
	Server Setting	Click to go into the detailed DVR setting.
	Tools	Click to update the firmware version, multilingual OSD and boot display of your DVR remotely.
	Status List	Click to view all event and recording logs, search the desired log(s) by date, or playback the recording of the selected log.

### 6.1.3. General Operation


#### Record

To record remotely at the same time when any event alarm is triggered at the DVR side, click “” (Miscellaneous Control) → “” (Record Setting) to go to the “Record Setting” page.



In the “Record Setting” page, you can set the following items:



- Record type
- Hard disk overwriting
- Pre- / post-alarm record time
- Record time setting
- Record path

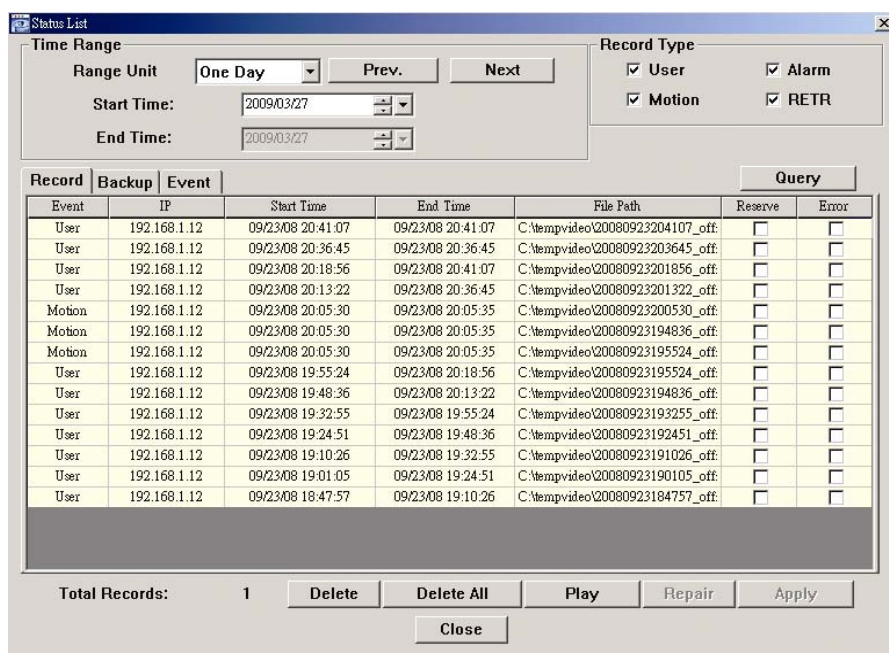
If “Manual” is checked, click “” (Record) on the main control panel to start the manual recording immediately, and the recordings will be saved in the specified location. The red text indication “REC” will be shown at the top left corner of the image display view.

If “Motion” and / or “Alarm” are checked, the recording function will also be enabled at the remote side when any

event is triggered at the DVR side, and the recordings will be saved in the specified location.

## Playback



To play a recording, click “” (Miscellaneous Control) → “” (Status List), and select the “Record” tab or “Backup” tab. A list of all the recordings will be shown by defaults, and you can also sort out the logs you want to speed up the search time.



To immediately play a recording, select a log from the list, and click “Play”, or double-click the selected log. Then, the playback control panel will be shown at the bottom of the main control panel similar to the following.



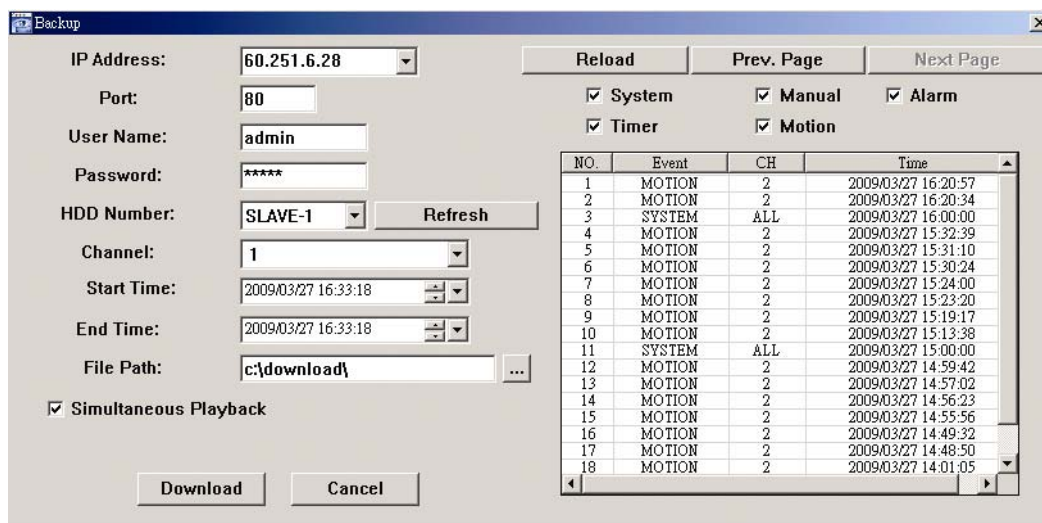
## Network Backup

Click “” (Miscellaneous Control) → “” (Backup) to go into the “Download” page as follows, and you can select a specific time range or event to make a video backup remotely.

---

**Note:** Before enabling the network backup function, make sure the DVR is not in the playback mode, or the DVR will stop playback.

---



Function	Description
IP Address / Port / User Name / Password	Check if the network connection information of the DVR within which contains the video data you need is correct.
HDD Number / Channel	Specify the hard disk (HDD Number) and channel number (Channel) within which have the video data you need.
Download by Time	Specify the time range within which has the video data you want in the "Start Time" and "End Time" columns.
Download by Event	<p>Select an event log from the event list. This list shows all logs in the specified DVR from the latest to the earliest.</p> <ul style="list-style-type: none"> <li>To quickly find the events you need, check or uncheck the event type "System" / "Manual" / "Alarm" / "Motion", and select the log you want.</li> <li>To view the earlier or later logs that are not shown in the current page, click "Prev. Page" or "Next Page".</li> <li>To refresh the event list, click "Reload".</li> </ul>
File Path	Assign the location where the backup files are saved.
Simultaneous Playback	<p>To view the backup images simultaneously when the download process is in progress, select the checkbox "Simultaneous Playback". You will see the backup images while the images are being downloaded to the PC or notebook.</p> <p>To simply backup images without previewing, deselect the checkbox "Simultaneous Playback". You will only see a message box indicating the total time needed, the current status and the saving location.</p>
Download / Cancel	Click "Download" to start or "Cancel" to discard the video backup.

## 6.2. IE Web Browser














**Note:** The supported PC operating systems are Windows Vista / XP / 2000.




















Step 1: Key in the IP address used by your DVR in the URL address box, such as 60.121.46.236, and press Enter. You will be prompted to enter the user name and password to access the DVR.

If the port number your DVR used is NOT 80, you need to key in the port number additionally. The format is **ipaddress:portnum**. For example, for IP address 60.121.46.236 and port No. 888, please key in "http://60.121.46.236:888" into the URL address box, and press "Enter".

Step 2: Enter the user name and password, the same as the ones used for video viewer login, and press "OK". You will see a screen when the login information is correct.



Function	Description
Home	Click  to go to the main page of the DVR
Configuration	Click  to go to the detailed DVR setting.
PTZ Mode	Click  to go to the PTZ mode.
Menu and Arrow Keys	Click  to enter the menu / exit the menu mode. Click the arrow keys to move the cursor and make the selection:  /  : Move the cursor up / down to select the previous / next menu or sub-menu function, or change the setting.  /  : Move the cursor left / right to the previous / next sub-menu items.
Event Search	Click  to enter the time search page.
Key Lock	Click  to enable the DVR key lock function. To unlock the DVR, key in your password, and click  .
Enter	Click  to confirm the setting or enter your selection.
Digital Zoom	Click  to zoom in / out the selected channel image.

Function	Description
Search	Click  to enter the DVR full search menu. You can check all the logs here, and select one of them to playback.
Playback control buttons	 (Stop) /  (Play) /  (Rewind) /  (Forward) /  (Pause) /  (Slow Playback) <b>Rewind / Forward</b> Click once to get 4X fast rewind / forward, twice to get 8X, three times to get 16X, and four times to get 32X the highest. <b>Slow Playback</b> Click once to get 4X slow playback and twice to get 8X slow playback.
Remote Independent Operation	 Click it to disable / enable the network independent function.
Single Channel Selection	Click the channel No. (CH1 ~ CH16) to see the live view of the selected channel. You can also click  or  to go to the previous / next channel of the selected channel.
Display Mode	Click the display mode you want to see. There are 3 modes for your choice: Click  /  /  to show 4-cut / 9-cut / 16-cut display.
Snapshot	Click  to take a snapshot for the current view, and open another browser window to display the captured image.
Quad Sequence / Full Sequence	<b>Quad Sequence</b>  Click to display the 4 quad display modes one by one. When the 4 <sup>th</sup> view is displayed, it will start from the 1 <sup>st</sup> view again. To exit from this display mode, click any other channel display button. <b>Full Sequence</b>  Click to display each channel one by one, starting from CH1. When the last channel is displayed, it will start from CH1 again. To exit from this display mode, click any other channel display button.
Web Transmission	<b>MPEG4 / M-JPEG / QuickTime</b> QuickTime is Apple Inc.'s multimedia software. You need to have QuickTime installed in you operation system first. When "QuickTime" is selected, you will be promoted to enter the user name and password to access the server of the DVR.
Change Quality	<b>BEST / HIGH / NORMAL / BASIC</b> Click to change the image quality.
Change Resolution	<b>4 CIF / CIF</b> Click to change the image resolution (4CIF: 720*480 / CIF: 352*240)
Audio Channel Selection	  To hear the audio from the channel that supports audio, click 1, 2, 3 or 4 to hear the audio from the audio channel 1, 2, 3 or 4.  means the audio channel is not connected to the camera supporting audio, or the function is disabled in the web browser manually.

## 6.3. QuickTime Player

You can also use the QuickTime player to remotely log into the DVR and check the live view only.

---

**Note:** QuickTime is Apple's multimedia software. You need to have QuickTime installed in your operation system first, and you can access the DVR to see the live view.

If you have installed QuickTime, please skip Step 1.

---

**Note:** The latest version of QuickTime is V6.4 at the time this manual goes to press, and the supported operation systems are Windows Vista / XP / 2000, and Apple Mac.

---

Step 1: Go to Apple's official website to download QuickTime. The website address is as follows:

<http://www.apple.com/quicktime/win.html>

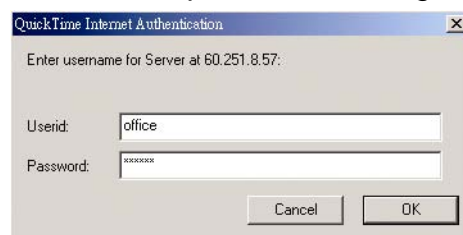
- a). Click "Free Download" to go into the download page, and select to download the free player.
- b). Leave your Email address, and click "Free Download Now" to download the latest QuickTime player.
- c). When the download is completed, execute the "QuickTimeInstaller.exe" file, and follow the on-screen instructions to finish the installation procedure.

Step 2: Open your QuickTime player. Select "File" → "Open URL in New Player...", and key in the URL address. The URL format is "rtsp://ipaddress/live/mpeg4" (For example, "rtsp://59.124.231.75/live/mpeg4"). Click "OK" to continue.



Step 3: A pop-up window will appear and prompt you to enter the authentication information.

Key in the user name and password for accessing your DVR. The user name and password are the same as the ones you use to log into Video Viewer. If the information is correct, click "OK" to go on. If not, click "Cancel" to quit the accessing.




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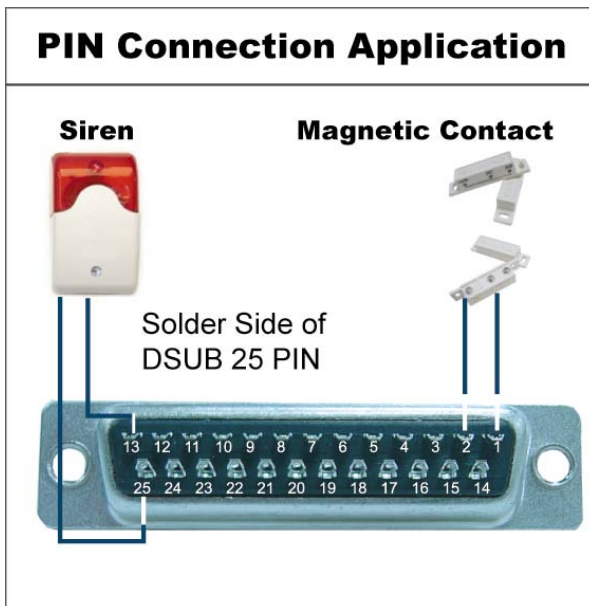
**Note:** If you're not prompted to enter the authentication information, and the error message 10060 appears, go to "Edit" → "Preferences" → "QuickTime Preferences", and select "Streaming Transport" from the drop-down list. Select "Use HTTP", and keep the port ID as 80.

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Step 4: When the login is successful, you will see the live view.

# APPENDIX 1 PIN CONFIGURATION

- For 16CH DVR

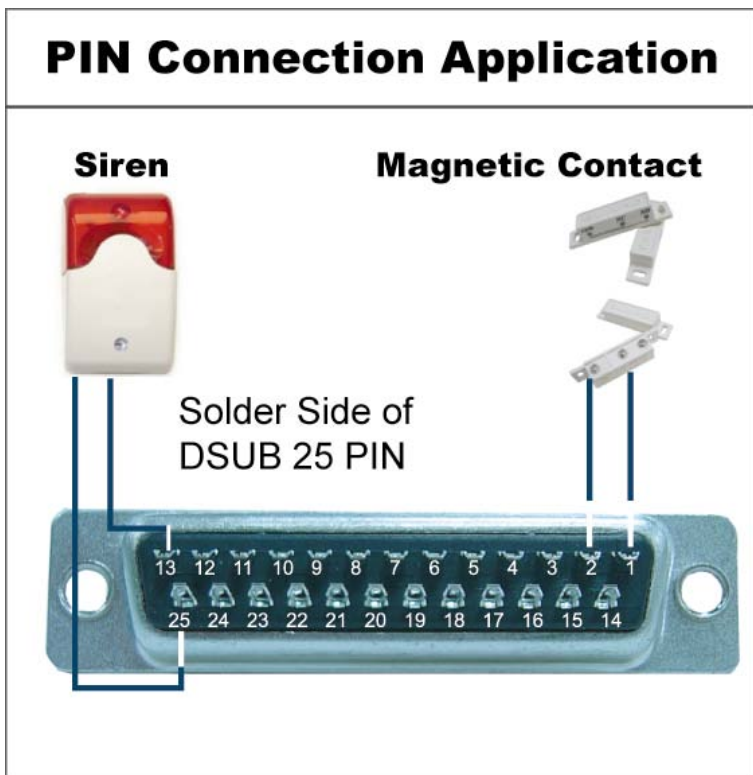


**Siren:** When the DVR is triggered by alarm or motion, the COM connects with NO and the siren with strobe starts wailing and flashing.

**Magnetic Contact:** When the magnetic contact is opened, the alarm will be triggered and the recording is on.

PIN	FUNCTION	DESCRIPTION
1	GND	GROUND
2-9	ALARM INPUT	Connect ALARM INPUT (PIN 2 – 9) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. PIN 2 is Alarm 1. Once the alarm is triggered, the CH1 of the DVR will start alarm-triggered recording. PIN 3 is Alarm 3. Once the alarm is triggered, the CH3 of the DVR will start alarm-triggered recording. PIN 4 is Alarm 5. Once the alarm is triggered, the CH5 of the DVR will start alarm-triggered recording. PIN 5 is Alarm 7. Once the alarm is triggered, the CH7 of the DVR will start alarm-triggered recording. PIN 6 is Alarm 9. Once the alarm is triggered, the CH9 of the DVR will start alarm-triggered recording. PIN 7 is Alarm 11. Once the alarm is triggered, the CH11 of the DVR will start alarm-triggered recording. PIN 8 is Alarm 13. Once the alarm is triggered, the CH13 of the DVR will start alarm-triggered recording. PIN 9 is Alarm 15. Once the alarm is triggered, the CH15 of the DVR will start alarm-triggered recording.
10 ~ 12	PIN OFF	NA
13	EXTERNAL ALARM NO	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.
14	PIN OFF	NA
15-22	ALARM INPUT	Connect ALARM INPUT (PIN 15 – 22) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. PIN 15 is Alarm 2. Once the alarm is triggered, the CH2 of the DVR will start alarm-triggered recording. PIN 16 is Alarm 4. Once the alarm is triggered, the CH4 of the DVR will start alarm-triggered recording. PIN 17 is Alarm 6. Once the alarm is triggered, the CH6 of the DVR will start alarm-triggered recording. PIN 18 is Alarm 8. Once the alarm is triggered, the CH8 of the DVR will start alarm-triggered recording. PIN 19 is Alarm 10. Once the alarm is triggered, the CH10 of the DVR will start alarm-triggered recording. PIN 20 is Alarm 12. Once the alarm is triggered, the CH12 of the DVR will start alarm-triggered recording. PIN 21 is Alarm 14. Once the alarm is triggered, the CH14 of the DVR will start alarm-triggered recording. PIN 22 is Alarm 16. Once the alarm is triggered, the CH16 of the DVR will start alarm-triggered recording.
23 ~ 24	PIN OFF	NA
25	EXTERNAL ALARM COM	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.

- For 8CH DVR



**Siren:** When the DVR is triggered by alarm or motion, the COM connects with NO and the siren with strobe starts wailing and flashing.

**Magnetic Contact:** When the magnetic contact is opened, the alarm will be triggered and the recording is on.

PIN	FUNCTION	DESCRIPTION
1	GND	GROUND
2-5	ALARM INPUT	Connect ALARM INPUT (PIN 2 – 5) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. PIN 2 is Alarm 1. Once the alarm is triggered, the CH1 of the DVR will start alarm-triggered recording. PIN 3 is Alarm 3. Once the alarm is triggered, the CH3 of the DVR will start alarm-triggered recording. PIN 4 is Alarm 5. Once the alarm is triggered, the CH5 of the DVR will start alarm-triggered recording. PIN 5 is Alarm 7. Once the alarm is triggered, the CH7 of the DVR will start alarm-triggered recording.
6 ~ 12	PIN OFF	NA
13	EXTERNAL ALARM NO.	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.
14	PIN OFF	NA
15-18	ALARM INPUT	Connect ALARM INPUT (PIN 15 – 18) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. PIN 15 is Alarm 2. Once the alarm is triggered, the CH2 of the DVR will start alarm-triggered recording. PIN 16 is Alarm 4. Once the alarm is triggered, the CH4 of the DVR will start alarm-triggered recording. PIN 17 is Alarm 6. Once the alarm is triggered, the CH6 of the DVR will start alarm-triggered recording. PIN 18 is Alarm 8. Once the alarm is triggered, the CH8 of the DVR will start alarm-triggered recording.
19-24	PIN OFF	NA
25	EXTERNAL ALARM COM	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.

## APPENDIX 2 TROUBLESHOOTING

Please refer to the table below for easy troubleshooting. The table describes some typical problems and also their solutions. Please check them before calling your DVR dealer.

- **FAQ (Frequently ask question)**

Questions	Solutions
No power	Check power cord connection.
	Confirm that there is power supplied from the outlet.
DVR is not working when pressing any button	You might be under "Key Lock" mode. Press any key and enter the password to exit this mode.
HDD detection failed	Replace with another HDD for testing.
	Replace with another HDD cable for testing.
Can't detect your USB flash drive	Replace with another USB flash drive for testing.
	Format the USB flash drive as FAT32 format and try again.
No live video	Confirm the camera is power supplied.
	Check the setting of the camera lens.
	Check the monitor's video cable and connection.
	Check the camera's video cable and connection.
No recorded video	Check if the HDD is installed and connected properly.
	Check if "MANUAL RECORD ENABLE" option is set to "ON", and the record function in the "CAMERA" menu is set to "ON", too.
Timer recording is not working	Check if "TIMER RECORD ENABLE" option is set to "ON", and the timer schedule has been arranged.
Motion detection recording is not working	Check if "EVENT RECORD ENABLE" option is set to "ON".
	Check if the detection function "DET" is set to "ON".
	Check if the detection area "AREA" has been set.
Can't play the recorded data on my DVR	There must be at least 8192 images of recorded data for playback to work properly. If not, your DVR will stop the playback. For example, if the IPS is set to 30, the recording time should be at least 273 seconds (8192 images / 30 IPS) for the playback to work properly.
Can't backup the video with audio	Make sure your DVR support the audio function.
	Make sure your camera supports the audio function.
	Make sure your audio camera is connected to the correct DVR audio input.
Can't view the DVR images over the network with IE web browser after login	Check the DVR firmware version.
	Choose to allow the web browser ActiveX or applet in the pop-out message.
Failed to backup the recorded files of the DVR from the remote PC side	You need to be a supervisor to operate this function.
	Check if the network connection information is correct (IP Address / Port / User Name / Password).
	Specify the hard disk (HDD Number) and channel number (Channel) within which have the recorded data you need.
Failed to upgrade the firmware / OSD file via USB flash drive	Check if the USB flash drive is formatted to FAT32.
	Check if the firmware / OSD files are correct.
Can't use the IR remote control	Check if your DVR supports the IR remote control.
	Check if the batteries are installed.
	Aim at the IR receiving zone and try again.

## APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST

Please upgrade the firmware of the DVR to the latest version to ensure the accuracy of the following table. If the USB flash drive is not supported by the DVR, the “USB ERROR” message will be shown on the screen.

**Note:** Please use your PC to format the USB flash drive as “FAT32”.

**Note:** You can backup up to 2GB video data for one-time USB backup. To backup more data, please set the time & channel(s) you want, and start USB backup again.

MANUFACTURER	MODEL	CAPACITY
Transcend	JFV35	4G
	JFV30	8G
Kingston	DataTraveler	1G
PQI	U172P	4G
Apacer	AH320	2GB
	AH320A	8GB
	AH220	1GB
	AH320	4GB
A-data	RB-18	1GB
Sandisk	Cruzer Micro	2G
	Cruzer Micro	4G
	Cruzer4-pk	2G
Netac	U208	1G
MSI	F200	4G
SONY	Micro Vault Tiny 2G	2G
	Micro Vault Tiny 4G	4G
	Micro Vault Tiny	1G

## APPENDIX 4 COMPATIBLE SATA HDD LIST

MANUFACTURER	MODEL	CAPACITY	ROTATION
Seagate	ST3320613AS	320GB	7200 rpm
	ST33500320AS	500GB	7200 rpm
	ST3750330AS	750GB	7200 rpm
	ST31000340AS	1000GB	7200 rpm
WD	WD3200AAKS	320GB	7200 rpm
	WD5000AACS	500GB	7200 rpm
	WD6400AAKS	640GB	7200 rpm
	WD7500AAKS	750GB	7200 rpm
Maxtor	STM3500320AS	500GB	7200 rpm
	STM3750330AS	750GB	7200 rpm
HITACHI	HDT725032VLA360	320GB	7200 rpm
	HDS721010KLA330	1000GB	7200 rpm

## APPENDIX 5 SPECIFICATIONS

MODEL		CPD537ASV	CPD535ASV
Video System		NTSC / PAL (auto detection)	
Video Compression Format		MPEG4	
Video Input (Composite video signal 1 Vp-p 75Ω BNC)		16 Channels	8 Channels
Video Loop Out (Composite video signal 1 Vp-p 75Ω BNC)		16 Channels	8 Channels
Video Output (BNC)	Main Monitor	For stable display	
	Call Monitor	For sequence display	
Video Output (VGA)		Built-in VGA interface for LCD monitor (output resolution up to 1600 x 1200)	
Maximum Recording Rate	FRAME	120 IPS @ 704x480 <NTSC> 100 IPS @ 704x576 <PAL>	60 IPS @ 704x480 <NTSC> 50 IPS @ 704x576 <PAL>
	FIELD	240 IPS @ 704x240 <NTSC> 200 IPS @ 704x288 <PAL>	120 IPS @ 704x240 <NTSC> 100 IPS @ 704x288 <PAL>
	CIF	480 IPS @ 352x240 <NTSC> 400 IPS @ 352x288 <PAL>	240 IPS @ 352x240 <NTSC> 200 IPS @ 352x288 <PAL>
Adjustable Recording Speed	FRAME	120, 60, 30, 15 IPS <NTSC> 100, 50, 25, 12 IPS <PAL>	60, 30, 15, 7 IPS <NTSC> 50, 25, 12, 6 IPS <PAL>
	FIELD	240, 120, 60, 30 IPS <NTSC> 200, 100, 50, 25 IPS <PAL>	120, 60, 30, 15 IPS <NTSC> 100, 50, 25, 12 IPS <PAL>
	CIF	480, 240, 120, 60 IPS <NTSC> 400, 200, 100, 50 IPS <PAL>	240, 120, 60, 30 IPS <NTSC> 200, 100, 50, 25 IPS <PAL>
Image Quality Setting		Best / High / Normal / Basic	
HDD Type		SATA	
HDD Storage**		Up to three HDDs	
HDD Quick Cleaning		Deletes HDD data efficiently (1TB within 2 seconds)	
Recording Mode		Manual / Timer / Motion / Alarm / Remote	
Watermark		YES	
Refresh Rate		480 IPS for NTSC / 400 IPS for PAL	240 IPS for NTSC / 200 IPS for PAL
Audio I/O		4 audio inputs, 2 audio outputs (Mono)	
Motion Detection Area		16 × 12 grids per camera for all channels	
Motion Detection Sensitivity		4 adjustable variables with precise calculation for motion detection	
Pre-alarm Recording		Yes (8 MB)	
<b>Backup Device</b>		(1) USB Flash Drive; (2) Network; (3) DVD writer (optional)	
USB Interface		Front panel * 1	
<b>Web Transmitting Compression Format</b>		<b>MPEG4</b>	
Ethernet		10/100 Base-T (Supports remote control and live view via Ethernet)	
<b>Remote Operation Software</b>		<b>Licensed software "Video Viewer", Internet Explorer / Mozilla Firefox web browser, and QuickTime player</b> *Operating System: Windows Vista / XP / 2000; Apple Mac	
R.E.T.R. (Remote Event Trigger Recording)		YES	
Remote Independent Operation		YES	
Remote Alarm Notification		By Email & FTP	
Network Protocol		TCP/IP / PPPOE / DHCP / DDNS	
PTZ Camera Control		YES (Pelco-D / Pelco-P)	
IR Transmitter		YES	
Dwell Time (Sequential Channel Switch)		Programmable with adjustable well time	
Alarm I/O		16 inputs, 1 output	8 inputs, 1 output
Digital Zoom		2X digital zoom	
Key Lock		YES	
Video Loss Detection		YES	

MODEL	CPD537ASV	CPD535ASV
Camera Title	Up to 6 letters	
Video Adjustable	Hue / Color / Contrast / Brightness	
Date Display Format	YY/MM/DD, DD/MM/YY, MM/DD/YY, and OFF	
Power Source	DC 19V	
Power Consumption	< 64 W	
Operating Temperature	10°C ~ 40°C (50°F~104°F)	
Dimensions (mm)***	432(W) × 90(H) × 326(D)	
System Recovery	System auto recovery after power failure	
Optional Peripheral	Keyboard Controller	

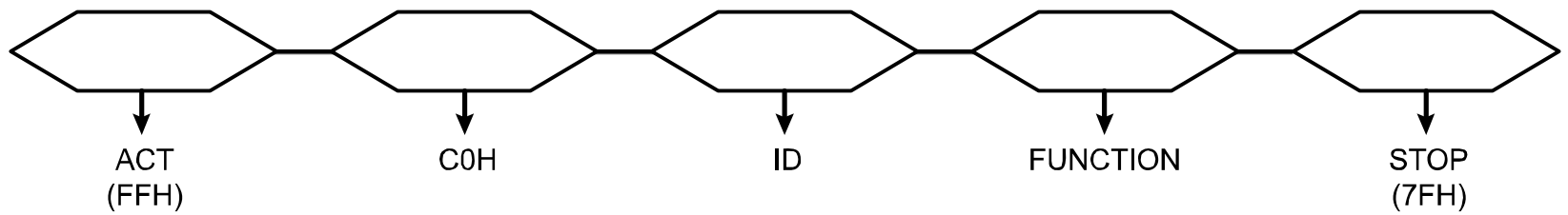
\*The specifications are subject to change without notice

\*\* The DVR supports one HDD capacity up to 1TB, and HDDs are optional.

\*\*\* Dimensional tolerance: ±5mm

# APPENDIX 6 RS485 PROTOCOL

- ◆ Use PC keyboards to simulate DVR keypads.
- ◆ Data: REMOTE PROTOCOL uses 8 bit data, 1 start bit, 1 stop bit.



FUNCTION	CODE	ASCII	FUNCTION	CODE	ASCII
KEY_MENU	0x4D	M	KEY_SET_CHANNEL	0x6e	n
KEY_ENTER	0x0D	ENTER	KEY_DWELL	0x65	e
KEY_PLUS	0x6b	k	KEY_CH1	0x31	1
KEY_MINUS	0x6d	m	KEY_CH2	0x32	2
KEY_UP	0x55	U	KEY_CH3	0x33	3
KEY_DOWN	0x4E	N	KEY_CH4	0x34	4
KEY_LEFT	0x4C	L	KEY_CH5	0x35	5
KEY_RIGHT	0x52	R	KEY_CH6	0x36	6
KEY_POWER	0x57	W	KEY_CH7	0x37	7
KEY_REC	0x72	r	KEY_CH8	0x38	8
KEY_PLAY	0x50	P	KEY_CH9	0x39	9
KEY_SLOW	0x53	S	KEY_CH10	0x41	A
KEY_ZOOM	0x5A	z	KEY_CH11	0x42	B
KEY_KEY LOCK	0x4B	K	KEY_CH12	0x43	C
KEY_AUDIO	0x64	d	KEY_CH13	0x44	D
KEY_SEARCH	0x73	S	KEY_CH14	0x45	E
KEY_PTZ_MODE	0x70	p	KEY_CH15	0x46	F
KEY_PTZ_PRESET	0x71	q	KEY_CH16	0x47	G
KEY_PTZ_ZOOM_IN	0x69	i	KEY_EJECT_DVD	0x6a	j
KEY_PTZ_ZOOM_OUT	0x66	f	KEY_IRIS_NEAR	0x67	g
KEY_MODE	0x6f	o	KEY_IRIS_FAR	0x68	h
KEY_4 CUT	0x61	a	KEY_PTZ_LIGHT	0x6c	l
KEY_9 CUT	0x62	b	KEY_PTZ_WIPER	0x77	w
KEY_16 CUT	0x63	c			