ASCENDENT
TECHNOLOGY GROUP

AVP Series DVR

User's Manual

ASCENDENT
TECHNOLOGY GROUP

	CAUTION	
	RISK OF ELECTRIC SHOCK	

CAUTION:

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.

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

CE — This apparatus is manufactured to comply with 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. 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.

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- **VGA Output Resolution Support**

All Ascendent AVP DVRs have a VGA output built-in, and the resolution can be changed to fit the display monitor being used.

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 a UPS (Uninterruptible Power Supply) for continuous operation.

2.1. Front Panel

1) <u>LED Indicators</u>

    ⏻   POWER : DVR is powered on.

    HDD   HDD   : HDD is reading or recording.

    🔊   ALARM : An alarm has been triggered (Selected models only).

    🕐   TIMER   : Timer recording is on.

    ▷   PLAY   : Under playback status.

2) <u>MENU</u>

Press to enter the main menu.

3) <u>ENTER</u>

Press to confirm the setting.

4) <u>LIST</u>

To quickly search the recorded files by event, press this to show the event list.
Select an event, and press "ENTER" to playback the selected file.

5) <u>PLAY</u>

Press to play the recorded video.

6) <u>SLOW</u>

In playback mode, press this button playback in a slower speed.

7) <u>ZOOM</u>

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

8) <u>SEQ</u>

Press to activate the call monitor function, and press again to quit.

9) ⊞

Press to show the four-channel display mode.

10) <u>POWER</u>

Press long to turn your DVR on and off.

Note: Please stop recording before turning off your DVR.

Note: To ensure that your DVR works properly, it is recommended that a UPS, (Uninterruptible Power Supply), is used for continuous operation.

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11) <u>1~4</u>

Press one of these buttons will display the corresponding camera.

12) <u>▲ (❚❚ / +) / ▼ (■ / -) / ◀ (◀◀) / ▶ (▶▶)</u>

Press one of these four buttons to move up/down/left/right.
In playback mode, press these buttons to pause (❚❚) / stop (■) /rewind (◀◀) / fast forward (▶▶) recorded video.

When changing settings, press ▲ / ▼ to change the setting in the menu.

13) <u>AUDIO (SLOW + ZOOM)</u>

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

14) <u>PTZ (SEQ + ⊞)</u> (<u>Selected models only</u>)

Press "SEQ" + "⊞" at the same time to enter / exit the PTZ control mode.

Adjust PTZ position: Press ▲ / ▼ / ◀ / ▶ to move up/down/left/right.

15) 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.

2.2. Rear Panel

1) VIDEO INPUTS 1 ~ 16 (Depending on Model)

Connect your cameras here.

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.

2) VIDEO OUTPUT

Connect to a VGA monitor for video output.

3) AUDIO IN (Select models only)

Connect to audio sources, microphones, or cameras equipped with audio functions.

Note: Depending on the model you have, the AVP series supports **UP TO 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.
For example, if your DVR supports two audio-in, its audio channels will be Audio 1 and Audio 2. When you playback CH1, you will also hear the audio recording of Audio 1.

4) AUDIO OUT (Selected models only)

Connect to an audio device, such as an external audio recorder or speaker.

5) IR (Selected models only)

Connect the IR receiver for remote control.

6) EXTERNAL I/O (Selected models only)

Insert the supplied 9PIN DSUB to this port for connecting external devices (external alarm, PTZ camera, etc).

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

7) VGA

Connect to a LCD monitor directly.

8) LAN

Connect to router or modem using a network cable.

9) DC 19V

Connect to the supplied adapter.

After the cameras are connected and powered, connect the camera video output to the DVR video input port with a coaxial cable or RCA cable with BNC connector. It may be necessary to restart the DVR to detect the video standard of the connected camera(s) (NTSC / PAL).

1) Power connection

Connect the camera with indicated power supply.

Connecting a camera to the wrong power supply

can cause permanent damage to the camera.

2) Video cable connection

Connect the camera's video output to the DVR video input port with a coaxial cable or RCA line with BNC connector.

3) Audio cable connection (Selected models only)

Connect the camera audio output to the DVR audio input port with a coaxial cable or RCA cable with a BNC connector.

4) Camera Setup (PTZ cameras only)

For detailed camera title, ID, protocol and baud rate setup, please refer to "5.5. REMOTE" at page 14.

3.2. 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. The power LED will turn on.

Note: To ensure that your DVR works properly, it is recommended that a UPS, (Uninterruptible Power Supply), is used for continuous operation.

3.3. Date and Time Setting

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

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

Note: Please DO NOT change the date or time of your DVR after the recording has been activated. Otherwise, the recorded data will not have the correct time and date, and you will not be able to find the recorded video by time search. If the date or time has been changed while recording, it is recommended to clear all HDD data, before recording again.

3.4. Password Setting

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

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

3.5. Record Setting

By default, the recording set to Motion record on all cameras.

To change the record settings, Press "MENU" and enter the password to go to the menu list. Then, move to "RECORD" to enter the advanced record settings menu.

For details, please refer to "5.2. RECORD" at page 9.

4.1 Live View

Icon	Function	Icon	Function	Icon	Function	Icon	Function
🔒	Key Lock	🔓	Key Unlock		1st Live Audio Channel		2nd Live Audio Channel
	3rd Live Audio Channel		4th Live Audio Channel		1st Playback Audio Channel		2nd Playback Audio Channel
	3rd Playback Audio Channel		4th Playback Audio Channel		Audio Channel Unselected	🔍	Digital Zoom Mode
🔍	Digital Zoom Unselected		HDD Overwrite	⏱	Timer Recording		Motion
📹	Recording		Alarm (Selected models only)				

4.2. Recording

When the recording and the pre-alarm function are activated, the DVR will overwrite 8GB data from the oldest date to allow for continuous recording.

1) Manual Recording Icon

   By default, when the DVR is properly connected with cameras and the HDD is installed, you will see " 📹 " (recording) on the screen.

2) Event Recording Icon

   When the motion / alarm detection is activated, when motion or an external alarm occurs, you will see 🐾 (motion)
   or " 〰 " (external alarm) on the screen.

3) Timer Recording Icon

   When the timer record is activated, you will see the LED light for "Timer" is on, and " ⏱ " (timer) on the screen.

4.3. Playback

Press "PLAY" on the DVR control panel, and the DVR will playback the latest recorded video.

Note: There must be at least 8192 images of recorded video 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 2 Minutes 33 seconds (8192 images / 30 IPS) for playback to work properly.

1) <u>Fast Forward / Fast Rewind</u>

You can increase the speed of fast forward and rewind on the DVR. In playback mode:
Press "▶▶" once to get 4X speed forward and press twice to get 8X speed, etc. The maximum speed is 32X.
Press "◀◀" once to get 4X speed rewind and press twice to get 8X speed, etc. 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) <u>Pause / Image Jog</u>

Press " ‖ " to pause the playback.
Once in pause mode:
Press " ▶ " once to get one frame forward.
Press " ◀ " once to get one frame rewind.

3) <u>Stop</u>

Press " ■ " in the playback mode, and the screen will return to live monitoring mode.

4) <u>Slow Playback</u>

Press "SLOW" for 1/4X speed playback and press twice for 1/8X speed playback.

5) <u>Audio Playback (Selected models only)</u>

Press "SEQ" + "⊞" to select the live or playback sound of the audio channels.

🔊	Live audio of the 1st audio channel	🔊	Playback audio of the 1st audio channel
🔊	Live audio of the 2nd audio channel	🔊	Playback audio of the 2nd audio channel
🔊	Live audio of the 3rd audio channel	🔊	Playback audio of the 3rd audio channel
🔊	Live audio of the 4th audio channel	🔊	Playback audio of the 4th audio channel
🔇	The audio channel is not selected.		

Note: Depending on the model you have, the AVP series supports **UP TO 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.
For example, if your DVR supports two audio-in, its audio channels will be Audio 1 and Audio 2. When you playback CH1, you will also hear the audio recording of Audio 1.

4.4. Search

1) <u>Full Event Search</u>

Press "LIST" to show the recorded files by event. Choose the item you want to see, and press "ENTER" to start playback.

2) <u>Search by Time</u>

Press "MENU" to enter the menu list, and go to "ADVANCE" → "EVENT LOG". 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) <u>Using USB flash drive</u>

    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 the USB flash drive into the DVR USB port.

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

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

2) <u>By using the supplied software "Video Viewer"</u>

    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. 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" button to start the upgrade.

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) <u>DATE</u>

   Select the specific time period (YEAR / MONTH / DAY / HOUR / MIN) that you want to search.

2) <u>SEARCH HDD</u>

   Change to the HDD you want if there is more than 1 HDD in your DVR.

3) <u>START</u>

   Move to "START" and press "ENTER" button to search and directly playback the recorded files.

5.2. RECORD

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) <u>IMAGE SIZE</u>

   Select FRAME, FIELD, or CIF.

2) <u>QUALITY</u>

   Select one of the four quality options: SUPER BEST, BEST, HIGH and NORMAL.

3) <u>IMAGE PER SECOND</u>

   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) <u>MANUAL RECORD ENABLE</u>

   Start / stop the manual recording function.

2) <u>EVENT RECORD ENABLE</u>

   Start / stop the event recording function. When this function is enabled, the recording will be triggered by any motion or external alarm.

3) <u>TIMER RECORD ENABLE</u>

   Start / stop the timer recording that is activated according to the scheduled time

4) <u>EVENT RECORD IPS</u>

   Select the images per second for EVENT RECORD (Recording that is triggered by alarm or motion).

5) <u>TIMER RECORD IPS</u>

   Select the images per second for TIMER RECORD (Recording that is activated according to the scheduled time.).

6) <u>PRE-ALARM RECORD</u>

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 of data before an alarm / motion event is triggered.
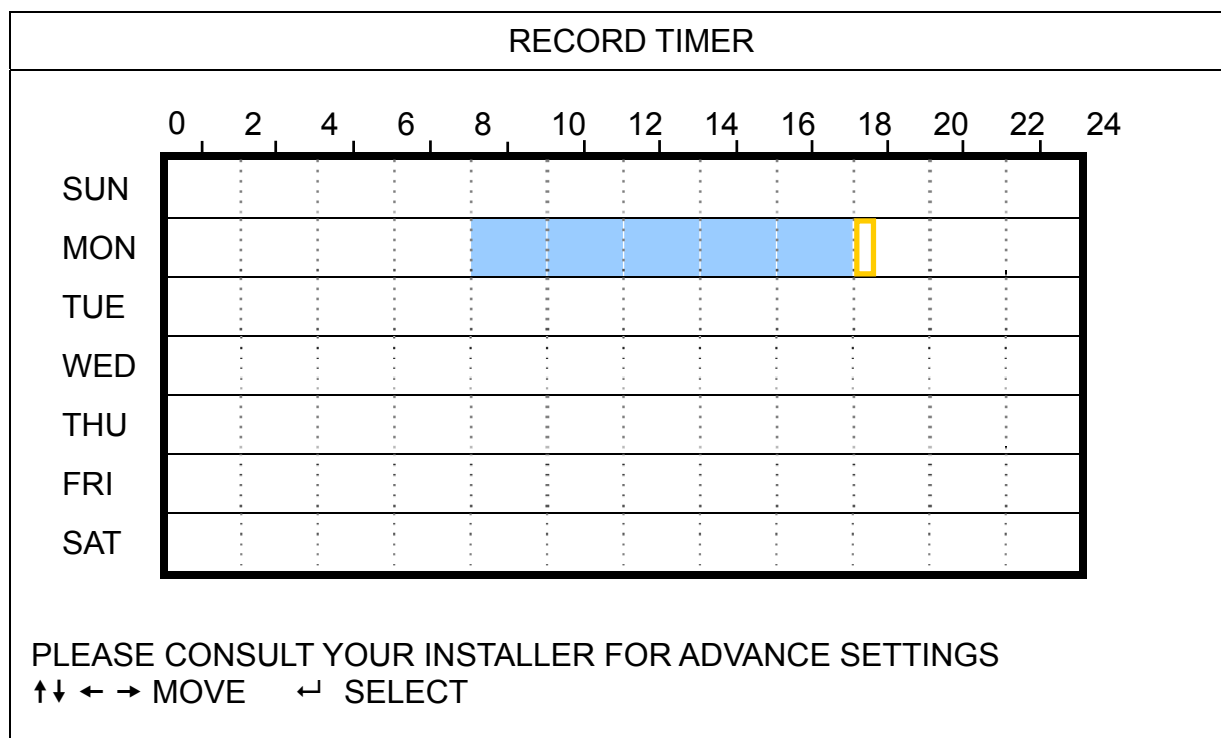
7) <u>OVERWRITE</u>

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 of data from the oldest video to allow continous recording.

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) <u>RECORD TIMER</u>

Use ▲ / ▼ to change the setting (ON / OFF). When it's set to "ON", press "ENTER" to go to its submenu for further settings.
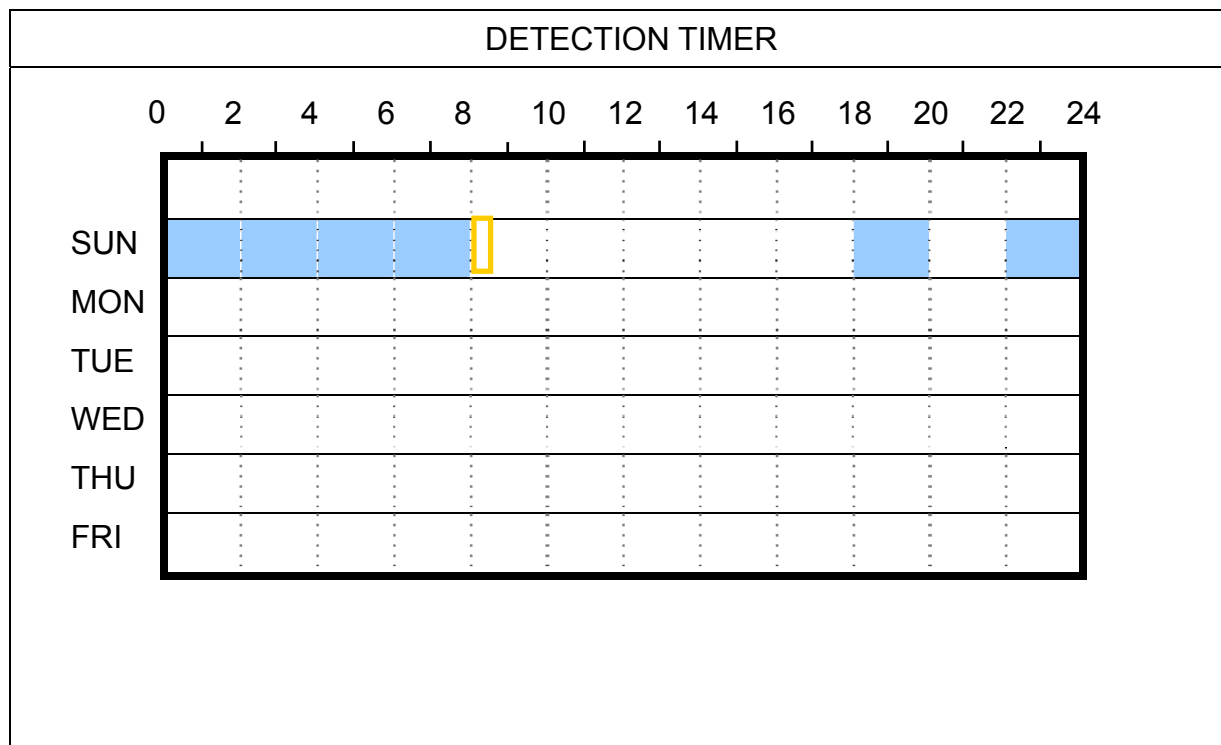
```
                          RECORD TIMER

         0   2   4   6   8   10  12  14  16  18  20  22  24

  SUN

  MON

  TUE

  WED

  THU

  FRI

  SAT


  PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS
  ↑↓ ← → MOVE      ↵  SELECT
```

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

Use ▲ / ▼ to change the setting (ON / OFF). When it's set to "ON", press "ENTER" to go to its submenu for further settings.

```
┌─────────────────────────────────────────────────────────────┐
│                      DETECTION TIMER                          │
├─────────────────────────────────────────────────────────────┤
│                                                               │
│         0   2   4   6   8   10  12  14  16  18  20  22  24     │
│                                                               │
│    SUN                                                        │
│    MON                                                        │
│    TUE                                                        │
│    WED                                                        │
│    THU                                                        │
│    FRI                                                        │
│                                                               │
│                                                               │
└─────────────────────────────────────────────────────────────┘
```

	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.

5.4. DETECTION

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

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

1) TITLE

Show the camera title of each channel set in "CAMERA".

2) DET

The available options vary depending on the model you have.
Select if you want to activate motion detection for the selected channel (ON/OFF).

3) AREA

Press "ENTER" to set the detection area. You will see similar screens as the following:

Pink blocks represent areas that will not set off motion detection, while the transparent blocks are the areas that will set off motion detection.

There are two different methods to set the detection area depending on the model you have.

Transparent blocks are the area under detection.

Press "ENTER" to confirm the start area.

Press ◄ / ► to choose the width of the detection area.
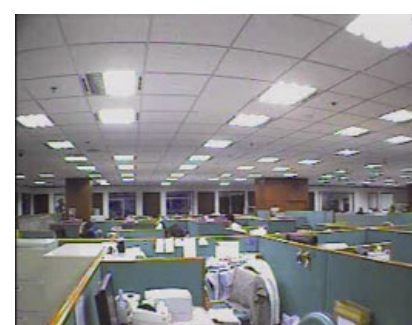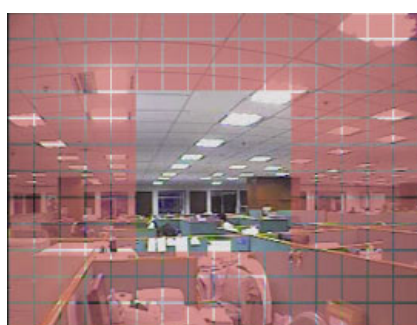

Press ▲ / ▼ to choose the height of the area.

You can also set up multiple detection areas.

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

*Pink blocks represent the area that is not being detected while the transparent blocks are the area under detection.

*Pink blocks represent the area that is not being detected while the transparent blocks are the area under detection.

There are three detection areas for your choice:

Press "▲" or "◄" once to broaden the detection area.

Press "▼" or "►" once to narrow the detection area.

4) **LS** (Level of Sensitivity) (Selected models only)

"LS" is to set the sensitivity of comparing two different images. The smaller the value is, the higher sensitivity for motion detection.

5) **SS** (Spatial Sensitivity) (Selected models only)

"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.

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) (Selected models only)

"TS" is to set the sensitivity regarding how long one object stays in the detection area and triggers the recording. Depending on the model you have, you may see either of the following methods:
a). Select a value -- The smaller the value is, the higher sensitivity for motion detection.
b). Select an option – HIGH / NORMAL.

7) **RE** (Reference) (Selected models only)

"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.

8) ALARM (Selected models only)

Select N.C. (Normally Closed) / N.O. (Normally Open) / OFF for the alarm polarity. The default alarm value is OFF.

5.5. REMOTE (Selected models only)

In this menu list, you can set up remote devices.
Move to "REMOTE", and press "ENTER". You will see the following submenu items:

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 each channel (2400 / 4800 / 9600 / 19200 / 57600 / 115200). For the connected cameras, such as PTZ and speed dome cameras, please make sure their baud rate setting is the same as the setting on the DVR.

5.6. SYSTEM INFO

In this menu list, you can check or change some system settings.
The submenu items are described below:

1) SERIAL TYPE (Selected models only)

Show the serial type of the DVR (RS485).

2) BAUDRATE (Selected models only)

Set the baud rate of the DVR (2400 / 9600 / 19200 / 38400 / 57600 / 115200).

3) HOST ID (Selected models only)

Set the ID of the DVR (0 ~ 254).

4) PASSWORD

Press "ENTER" to reset the password for accessing the DVR system. You can set the password up to 4 digits.

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

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 on a compatible USB flash drive, and insert it into the USB port on the front panel. Press "ENTER", and select "YES" to confirm upgrade or "NO" to cancel.

Note: Do not disconnect the power of your DVR while the upgrade process is in progress, or the DVR functions may not work normally or be unusable.

8) <u>AUTO KEYLOCK (SEC)</u>

Set the time-out in second after which the key lock function is activated (NEVER / 30 / 60 / 120).

9) <u>LANGUAGE</u>

Select the language of the OSD.

10) <u>VIDEO FORMAT</u>

This shows the current DVR video format (NTSC / PAL).

11) <u>VERSION</u>

This is the firmware version information.

5.7. NETWORK (Selected models only)

In this menu list, you can set up the network.
Move to "NETWORK", and press "ENTER" to enter the submenu. The submenu items are described below.

5.7.1. STATIC

1) <u>NETWORK TYPE</u>

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

2) <u>NETWORK INFORMATION (IP / GATEWAY / NETMASK)</u>

Put in all the network information obtained from your network administrator.

3) <u>DNS (PRIMARY DNS / SECONDARY DNS)</u>

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

4) <u>PORT</u>

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 and/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) <u>NETWORK TYPE</u>

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)

Type 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 portt used by HTTP is 80.
However in some cases, it is better to change this port number for added flexibility and/or
security. See the example below:

NETWORK TYPE	PPPOE	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" received from an ISP, and a "DDNS account" to correspond with 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)

Put 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 and/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 the router or a cable modem with DHCP services, and a "DDNS account" to correspond with the dynamic IP address to a specific "Hostname", for this function to work properly.

5.8. BACKUP

In this menu list, you can backup video from a specified time and date to a compatible USB flash drive. The backup file can be played directly in your PC via the supplied software "Video Viewer". For details, please refer to "Playback".

Note: Before making a video backup with audio, you need to make sure there is an audio camera connected to the channel which supports audio recording.

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" on page 29.

b). The format of your USB flash drive is "FAT 32". If not, please format it to "FAT 32" using your PC.

c). There is no data in the USB flash drive. If there is, it's recommended to clear all data in the USB flash drive before starting the backup.

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

Move to "BACKUP", and press "ENTER", select "USB BACKUP". You will see the following submenu items:

1) <u>START TIME</u>

Select the start time of the backup.

2) <u>END TIME</u>

Select the end time of the backup.

3) <u>AVAILABLE SIZE</u>

Display the available capacity of the inserted USB flash drive.

4) <u>CHANNEL</u>

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) <u>HDD NUM</u>

Select the HDD containing the data you need.

6) <u>START</u>

Press "ENTER" to start copying the chosen data to the USB flash drive.

5.8.2. DISK BACKUP

Insert a blank DVD or CD into the DVR's disc drive. Follow above instructions with the exception of selecting "DISK BACKUP" after entering the backup menu

Note: Depending on the model you have, the AVP series supports **UP TO 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.

For example, if your DVR supports two audio-in, its audio channels will be Audio 1 and Audio 2. When you playback CH1, you will also hear the audio recording of Audio 1.

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.

Note: The buttons and functions described below may differ from the actual ones and are for selected model(s) only.

6.1. Video Viewer

6.1.1. Installation & Network Connection

1) Install the software

   Step1: Place the supplied DVD into your DVD-ROM drive, or contact your installer to get a copy.

   Step2: Under My Computer find your DVD-ROM drive and open it, and run AVP Client.exe to install the Video Viewer application.

   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)

a) 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".

b) Set the PC's IP address as "192.168.1.XXX" (2~253) so the PC and DVR in the same network segment and are able to connect to each other.

c) Double-click " 🖥️ " icon on your PC desktop to enter the control panel. By default, the "Address Book" (⬜) panel will be displayed on the right side of the control panel.

d) 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).

e) Double-click the IP address you just added into the address book to log in.

> Remote Connection (via Internet)

a) Double-click " " icon on your PC desktop to enter the control panel. By default, the "Address Book" panel will be displayed on the right side of the control panel.

b) Click " " (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) → " " (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).

c) Double-click the IP address you just added into the address book to log in.

6.1.2. Control Panel

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

①	Image Display
②	Address Book
③	Miscellaneous Control
④	Record
⑤	Snapshot
⑥	Information
⑦	DVR Control

NO.	Button	Function	Description
①	N/A	Image Display	The place where the images are displayed.
②		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.
③		Miscellaneous Control	Click to show the main operation functions: audio volume control, color adjust

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NO.	Button	Function	Description
			setting, backup, DVR setting, upgrade, event logs. For details, please see "Miscellaneous Control".
④	/	Record / Record Stop	Click to start / stop the manual recording.
⑤		Snapshot	Click to take a snapshot of the current view. The snapshot will be saved in the path you specify in "Record Setting".
⑥		Information	Click to show the current network connection details.
⑦		DVR Control	Click to go to the DVR control panel to operate the DVR remotely.

Miscellaneous Control

Click " " on the control panel, and six functions are available as follows:

Button	Function	Description
	Color Setting	Click this button to adjust the brightness / contrast / hue / saturation for a single channel.
	Backup	To make a video backup remotely, click this button, and you will go to the download settings page.
	Record Setting	Click to go to the detailed record settings.
	Server Setting	Click to go into the detailed DVR settings.
	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 on the DVR side, click " " → " " to

go to the "Record Setting" page.
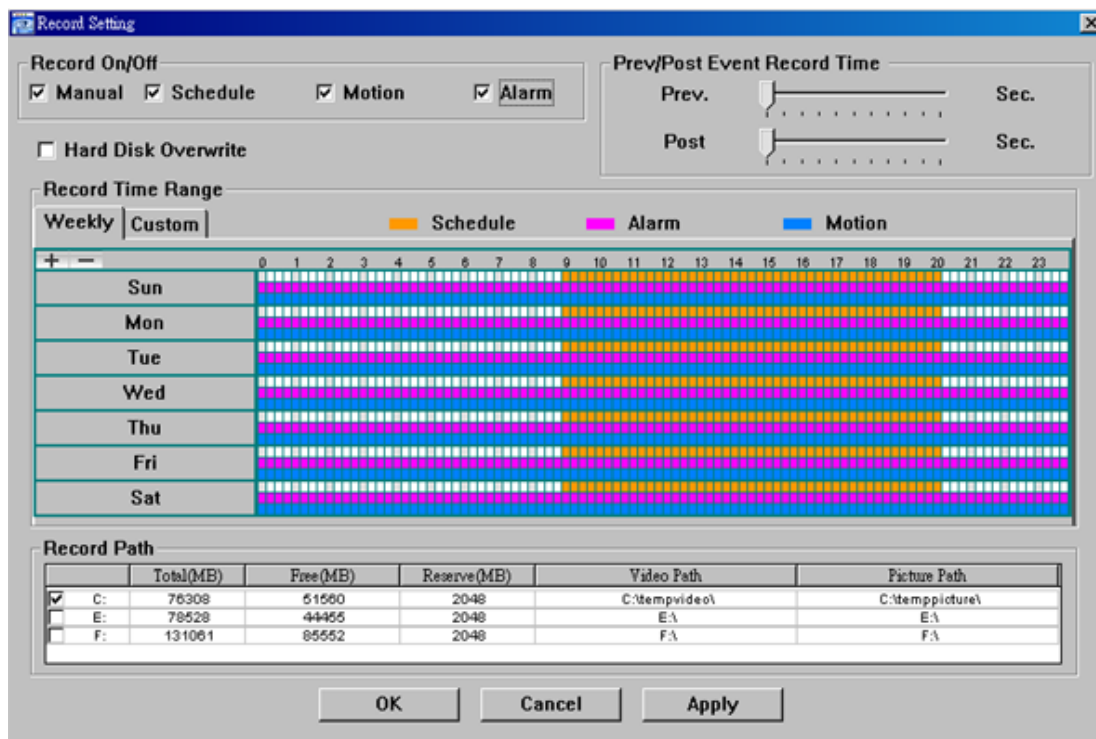
In the "Record Setting" page, you can set the following items:

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

If "Manual" is checked, click " " 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 " " → " ", and select the "Record" tab or "Backup" tab. A list of all the recordings will be shown by default, and you can also sort out the logs you want to speed up the search time.
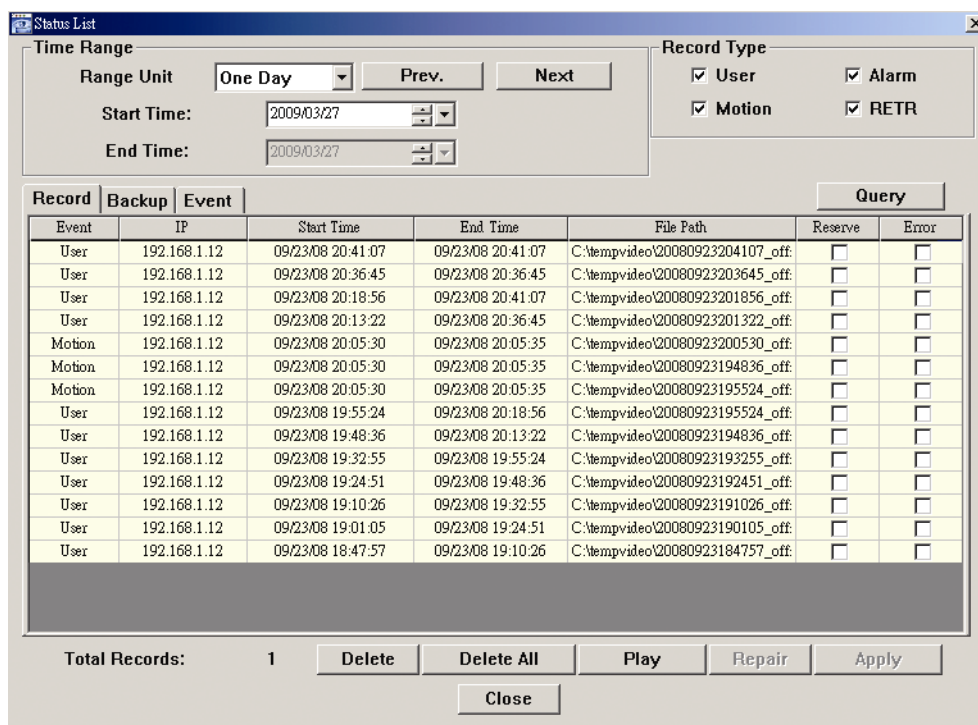
To immediately play a recording, select a log from the list, and click "Play", or double-click the selected log. Then, the playback control panel will be shown at the bottom of the main control panel similar to the following.

Network Backup

Click " " → " " to go into the "Backup" 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 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) which has 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	Select an event log from the event list. This list shows all logs in the specified DVR from the earliest to the latest. ・To quickly find the events you need, check or uncheck the event type "System" / "Manual" / "Alarm" / "Motion", and select the log you want. ・To view earlier or later logs that are not shown in the current page, click "Prev. Page" or "Next Page". ・To refresh the event list, click "Reload".

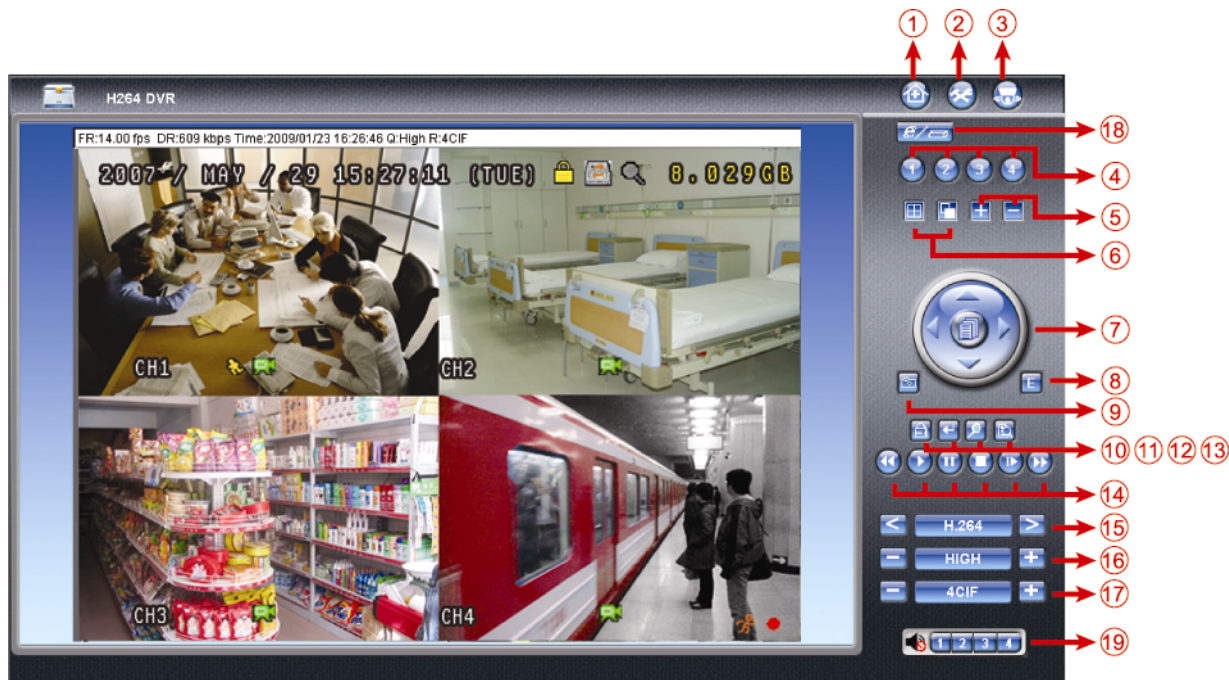| Function	Description
File Path	Assign the location where the backup files are saved.
Simultaneous Playback	To view the backup images simultaneously when the download process is in progress, select the checkbox "Simultaneous Playback". You will see the backup images while the images are being downloaded to the PC. To backup images without previewing, deselect the checkbox "Simultaneous Playback". You will see a message box indicating the total time needed, the current status and the save location.
Download / Cancel	Click "Download" to start or "Cancel" to discard the video backup.

6.2. IE Web Browser

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

Step 1:   Key in the IP address used by your DVR in the URL address box, such as 32.234.234.20, 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 add this number to the IP Address. The format is *ipaddress:portnum*. For example, for IP address 32.234.234.20 and port No. 888, please enter in "http://32.234.234.20:888" 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".

NO.	Function	Description
1	Home	Click to go to the main page of the DVR
2	Config.	Click to go to detailed DVR settings.
3	PTZ	Click to enter PTZ mode.
4	Channel Selection	Click one of the numbers to switch to that channel in full screen.
5	Selection	Click + or – to go to the previous / next channel, or to change a setting. :
6	Display Mode	Click to show 4-split display. Click to display each channel one by one, starting from CH1. When the last channel is displayed, it will start at CH1 again. To exit from this display mode, press any other channel display button.
7	Menu and Arrow Keys	Click to enter the menu / exit the menu mode. Move the cursor up / down to select the previous / next menu or sub-menu function, or change the selected setting. Move the cursor left / right to the previous / next sub-menu items.
8	Event	Click to enter the playback search settings screen.
9	Snapshot	Click to take a snapshot for the current view, and open another browser window to display the captured image.
10	Key Lock	Click to enable the DVR key lock function. To unlock the DVR, key in your password, and press

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NO.	Function	Description
11	Enter	Click ⏎ to confirm the setting or enter your selection.
12	Digital Zoom	Click 🔍 to zoom in / out the selected channel image.
13	Search	Click 📖 to enter the DVR full search menu. You can check all the logs here, and select one of them to payback.
14	Playback control buttons	⏹ (Stop) / ▶ (Play) / ◀◀ (Rewind) / ▶▶ (Forward) / ⏸ (Pause) / ▶ (Slow Playback) **Rewind / Forward** Click once to get 4X fast rewind / forward, twice to for 8X, three times for 16X, and four times to play at 32X the highest speed. **Slow Playback** Click once for 1/4X slow playback and twice for 1/8X slow playback.
15	Web Transmission	**H.264 / QuickTime** QuickTime is Apple Inc.'s multimedia software. You need to have QuickTime installed on your PC first. When "QuickTime" is selected, you will be promoted to enter the user name and password to access the the DVR.
16	Change Quality	**BEST / HIGH / NORMAL / BASIC** Click to change the image quality.
17	Change Resolution	**4 CIF / CIF** Click to change the image resolution (4CIF: 704*480 / CIF: 352*240)
18	Remote Independent Operation Off / On (Selected models only)	🔒/🔓 Click it to disable / enable the network independent function.
19	Audio Channel Selection (Selected models only)	🔇 1 2 3 4 To hear the live audio remotely, click 1, 2, 3 or 4. 🔇 means there are no audio channels to stream audio from. This function is available only when your DVR supports the audio function, and a camera supporting audio is connected to the DVR. Note: To know whether your DVR supports audio functions, please refer to "APPENDIX 4 SPECIFICATIONS" at page 30.

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 on your PC first, then 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 to 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/h264" (For example, "rtsp://**59.124.231.75**/live/h264").
Click "OK" to continue.

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

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.

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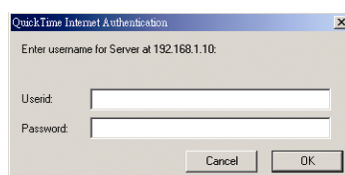
Step 4:   When the login is successful, you will see the live view.

APPENDIX 1 PIN CONFIGURATION (Selected models only)

PIN	FUNCTION	DESCRIPTION
1~4	ALARM INPUT	Connect ALARM INPUT (PIN1 – 4) and GND (PIN5) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will sound. PIN 1 is Alarm 1. Once the alarm is triggered, the CH1 of the DVR will start alarm-triggered recording. PIN 2 is Alarm 2. Once the alarm is triggered, the CH2 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 4. Once the alarm is triggered, the CH4 of the DVR will start alarm-triggered recording.
5	GND	GROUND
6	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.
7	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.
8	RS485-A	Using RS-485 serial communication signals, DVR can be controlled by keyboard controller. (Keyboard Controller Sold as Optional Accessory)
9	RS485-B	Using RS-485 serial communication signals, DVR can be controlled by keyboard controller. (Keyboard Controller Sold as Optional Accessory)
10~11	GND	GROUND

APPENDIX 2 TROUBLESHOOTING

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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 Asked Questions)**

Problem	Solutions
No power	Check power cord connection.
	Confirm that there is power supplied from the outlet.
DVR does not respond to any buttons being pressed	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 connected to a power supply
	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, EVENT, OR TIMER RECORD" option is set to "ON", and the record function in the "CAMERA" menu is set to "ON".
Timer recording is not working	Check if "TIMER RECORD ENABLE" option is set to "ON", and the timer schedule has been arranged.
Motion 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 seconds (8192 images / 30 IPS) for the playback to work properly.
Can't backup the video with audio	Make sure your DVR supports the audio recording function.
	Make sure your camera supports the audio recording 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.
	Allow the web browser ActiveX or applet in the pop-up message. You need
Failed to backup the recorded files of the DVR from the remote PC side	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) which has 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 next to the power indicator on the front panel, and try again.

APPENDIX 3 COMPATIBLE USB FLASH DRIVES

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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 of video data at one-time for 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

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MODEL	Model 1	Model 2	Model 3	Model 4
Video System	NTSC / PAL (auto detection)			
Video Compression Format	H.264			
Video Input (composite video signal 1 Vp-p 75Ω BNC)	4/8/16 channels			
Video Output (composite video signal 1 Vp-p 75Ω BNC)	Main monitor output			
Audio Input / Output	4 audio inputs, 1 audio output (Mono)	1 audio input, 1 audio output (Mono)	1 audio input, 1 audio output (Mono)	N/A
Maximum Recording Rate (Frame)	704×480 pixels with 30 IPS <NTSC> / 704×576 with 25 IPS <PAL>			N/A
Maximum Recording Rate (Field)	704×240 pixels with 60 IPS <NTSC> / 704×288 pixels with 50 IPS <PAL>		N/A	
Maximum Recording Rate (CIF)	352×240 pixels with 120 IPS <NTSC> / 352×288 pixels with100 IPS <PAL>			
Image Quality Setting	Super Best, Best, High and Normal			
Hard Disk Storage	Accommodates 1 SATA HDD (capacity up to 1TB)			
Quick Search	Time / Motion / Alarm search mode	Time / Motion search mode	Time search mode	
SATA Interface	Built-in			
VGA Interface	Built-in (output resolution up to 1600 x 1200)	N/A	N/A	
Recording Mode	Manual / Timer / Motion / Alarm / Remote	Manual / Timer / Motion / Remote		Manual / Timer / Motion
Multiplex Operation	Live display / record / playback / backup / network operations			Supports live display, recording, playback & backup simultaneously
Remote Independent Operation	Basic remote independent operation	N/A		
Motion Detection Area	16 × 12 grids per camera for all channels		3 pre-defined detection areas selectable	
Motion Detection Sensitivity	4 adjustable parameters for accurate detection		One parameter with four sensitivity levels (High / Normal / Low / Off)	
Pre-alarm Recording	YES (8 MB)			
Backup Device	USB 2.0 flash drive / Network			USB 2.0 flash drive
Web Transmitting Compression Format	H.264			N/A
Ethernet	10/100 Base-T. Supports remote control and live view via Ethernet			N/A
Web Interface	Supports licensed software "Video Viewer" / Internet Explorer & Mozilla Firefox web browsers / QuickTime (20 users access simultaneously)			N/A
	*Operating System: Windows Vista / XP / 2000; Apple Mac			N/A
Network Protocol	TCP/IP, PPPOE, DHCP and DDNS			N/A
IR Remote Control	YES (IR receiver built-in)		N/A	
Picture Zoom	2X digital zoom (Live & Playback)			
PTZ Control	YES	N/A		
Alarm I/O	4 inputs, 1 output	N/A		
Picture Zoom	2X digital zoom (Live & Playback)			

MODEL	Model 1	Model 2	Model 3	Model 4
Key Lock (Password Protection)	YES			
Video Loss Detection	YES			
Camera Title	Supports up to 6 letters			
Video Adjustable	Hue / Saturation / Contrast / Brightness			
Date Display Format	YY/MM/DD, DD/MM/YY, MM/DD/YY, and Off			
Daylight Saving	YES			
Power Source (±10%)	DC 19V			
Power Consumption (±10%)	< 42 W			
Operating Temperature	10℃ ~ 40℃ (50℉~104℉)			
Dimensions (mm)**	343(W) × 59(H) × 223(D)			
System Recovery	System auto recovery after power failure			
Optional Peripherals	Keyboard controller	N/A	VGA converter	

* The specifications are subject to change without notice.

** Dimensional Tolerance: ±5mm

APPENDIX 5 RS485 PROTOCOL (Selected Models Only)

◆   Use PC keyboards to simulate DVR keypads.

◆   Data: REMOTE PROTOCOL uses 8 bit data, 1 start bit, 1 stop bit.

| ACT (FFH) | C0H | ID | FUNCTION | STOP (7FH) |
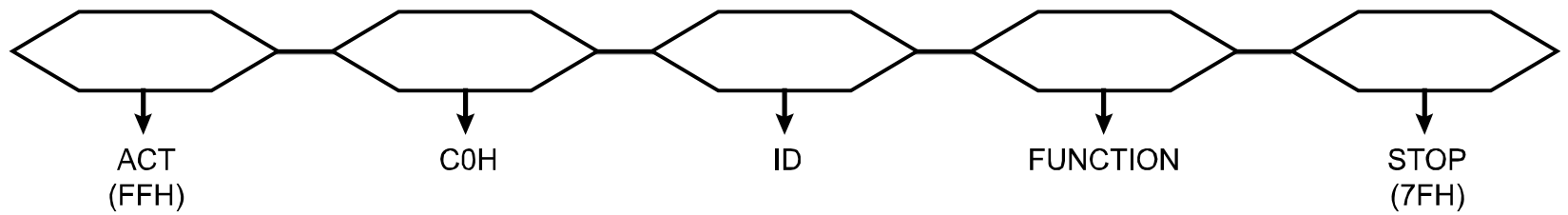
FUNCTION	CODE	ASCII	FUNCTION	CODE	ASCII
KEY_MENU	0x4D	M	KEY_SET_CHANNEL	0x6e	n
KEY_ENTER	0x0D	ENTER	KEY_DWELL	0x65	e
KEY_PLUS	0x6b	k	KEY_CH1	0x31	1
KEY_MINUS	0x6d	m	KEY_CH2	0x32	2
KEY_UP	0x55	U	KEY_CH3	0x33	3
KEY_DOWN	0x4E	N	KEY_CH4	0x34	4
KEY_LEFT	0x4C	L	KEY_CH5	0x35	5
KEY_RIGHT	0x52	R	KEY_CH6	0x36	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			

APPENDIX 6 RECORDING TIME TABLE

The testing environment is a normal office, this is for reference only. The amount of recording you get will vary based on the amount of movement on the cameras.

The recording time may vary depending on the following three factors:
- Different camera resolution;
- Different picture complexity;
- Different frequency of the object movement

Record mode	Quality	IPS	MB/Hour	750GB Record Time (day)
FRAME	SUPER BEST	25	925	33.78
		12	650	48.08
		7	520	60.10
		3	445	70.22
	BEST	25	875	35.71
		12	620	50.40
		7	475	65.79
		3	421	74.23
	HIGH	25	865	36.13
		12	600	52.08
		7	450	69.44
		3	400	78.13
	NORMAL	25	768	40.69
		12	570	54.82
		7	440	71.02
		3	385	81.17
FIELD	SUPER BEST	50	900	34.72
		25	800	39.06
		12	580	53.88
		7	460	67.93
	BEST	50	890	35.11
		25	780	40.06
		12	540	57.87
		7	450	69.44
	HIGH	50	865	36.13
		25	740	42.23
		12	460	67.93
		7	440	71.02
	NORMAL	50	790	39.56
		25	720	43.40
		12	450	69.44
		7	430	72.67
CIF	SUPER BEST	100	1010	30.94
		50	720	43.40
		25	540	57.87
		12	455	68.68
	BEST	100	910	34.34
		50	635	49.21
		25	510	61.27
		12	435	71.84
	HIGH	100	875	35.71
		50	600	52.08
		25	480	65.10
		12	420	74.40
	NORMAL	100	805	38.82
		50	570	54.82
		25	450	69.44
		12	410	76.22