

# DVR

## 4-channel Digital Video Recorder

# Manual



## **Security Notice**

- **Power supply**

This Digital-Video-Recorder applies DC 12 voltage indoor power supply. The voltage of the power must be verified before using.

When the machine is not in use for a long time, pull out the plug from the socket and disconnect the power.

- **Security**

This machine is indoor using equipment; in order to avoid dangers of short circuit or electric shock, please do not expose the machine in rain or moist environment. In case any solid or liquids get into the machine's case, please cut off the power supply immediately, and ask for qualified technicians to check the machine before restart.

This machine is precise instrument; do not attempt to repair any unit of the machine by yourself without technical aids. When there is any malfunction with the machine, please ask for qualified technicians to examine and repair, or contact the dealers in your area.

- **Installation**

Please choose appropriate site to install the machine, to ensure well ventilation around the machine to avoid the machine excessively hot. The machine cannot be installed near radiator and ventilating trunk etc. heat sources, or under straight sunshine, or dusty places or anywhere there is a chance for mechanical vibrations or impact.

- **Advice**

While recording TV programs or VCD programs, please don't pirate the third-party's authority and/or any other relative rights.

## **Features of this DVR**

- Video input: 4channels; video output: 2 channels.
- Audio input: 4channels; audio output: 1 channels.
- Four optional levels of image quality: very high, high, normal, low. Record and playback frame rate change enable for recording.
- Compression mode: Modified MJPEG.
- Compatible with NTSC and PAL format.
- Support alarm recording and time recording.
- Multi-function searches: be able to distinguish different alarm records and time records from ordinary records; be able to search by time, by segment or by event.
- Support various playback modes: pause, several fast forward and backward play modes.
- Support zoom, auto, and PIP function.
- 4 alarm input and 1 relay alarm output.
- Equipped with remote device
- Support loss and motion detection functions.
- Support watermark security protect.
- Triplex operation, may play back and search while it is recording. Both live and playback pictures can be displayed on screen simultaneously.
- Totally independent from PC platform, thoroughly keeping away from shutdown caused by inappreciative operations, complicated management and operation, and virus infection.

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## System Setup

Before using the video recorder, the first step is to set up the system according to user's needs; otherwise the machine will run with the default settings.

### 1. Setup Methods of menu

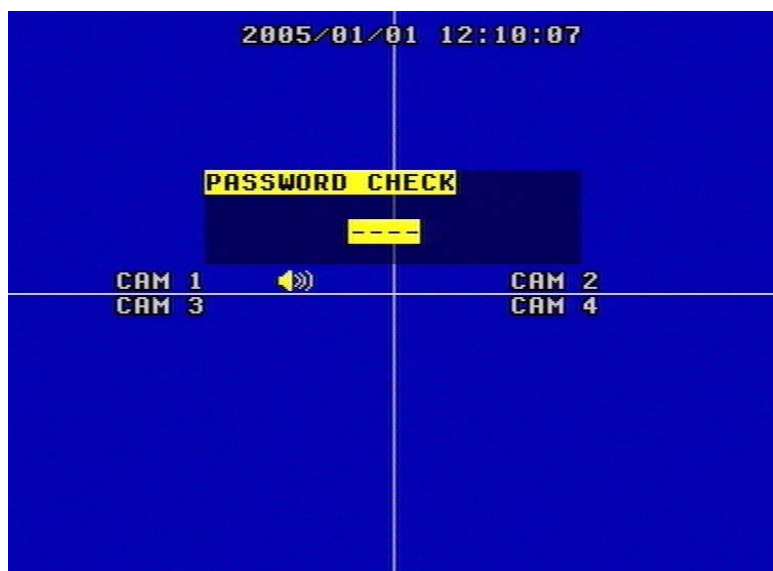
When in setup mode, push upward button or downward button, the cursor will move among the settable items, continuous pushing will make the cursor move among the options one by one, and it can recur. The selected one will display in yellow color.

While choosing digital fields, e.g. year, month, day, hour, minute, second etc, push leftward button or rightward button, the cursor can move leftward or rightward among the several digits of one field, continuous pushing will make it move among digits one by one, and it can recur.

Please push "+" or "-" button to change the value that the cursor stands, push ENTER button to enter sub menu and push menu button to return to previous menu.

### 2. Access Menu

System setup is achieved through entering menu, and then setting up on each option's window. To access the menu, please push menu button on the front panel, it will display password input window.



The password is a random combination of 4 digits of "0-9". The default is "0000". To enter the menu below, you have to input the correct password by pushing the digital buttons. If the password you input is incorrect, the system will automatically return. If you don't want to input the password but give up the operation, you can push menu button to return. While inputting the password, in order to avoid being revealed to stander-bys, the password you input is displayed on the screen as "\*" signs.

To change the password, please refer to "password change".



### 3. System Setup

When the cursor moves to System Setup, please push enter button, the System Setup window will appear, which is illustrated as below.



PLAY REPEAT: if you set this to “YES”, when play the video to the end of the HDD, it will automatically play the video from the beginning of the HDD again. If set to ‘NO’, it will stop when play to the end.

VIDEO SOURCE: video format, NTSC/PAL

BUZZER SOUND: buzzer switcher, if set to “OFF”, the buzzer will not work..

### 4. Time/Date Set

When the cursor moves to System Setup, please push enter button, the System Setup window will appear, which is illustrated as below. If the DVR is in recording mode you cannot access to this menu unless you stop record first.



Please push up, down, left, and right buttons to move the cursor, push add and DEC button to modify the value.

FORMAT: the time display format, different for USA, EURO and Asia users.

DISPLAY: if set to "OFF", time will not display on the screen.

LOCAL: time display position.

## 5. HDD Format Set

When the cursor moves to HDD FORMAT SET, please push enter button, the System Setup window will appear, which is illustrated as below.



If you select "YES" and push the enter button, all video on the HDD will loss, if you want to give up, please select "NO".

## 6. Factory Reset

When the cursor moves to System Setup, please push enter button, the System Setup window will appear, which is illustrated as below.



If you select “YES” and push the enter button, all setting of the DVR will reset to default, if you want to give up, please select “NO”.

## 7. Video Setup

When the cursor moves to Video Setup, please push enter button, the Video Setup window will appear, which is illustrated as below.



BOUNDARY: boundary line color

BACK GROUND: back ground color.

## 8. Name Setup

When the cursor moves to Name Setup, please push enter button, the Name Setup window

will appear, which is illustrated as below.



Each channel's name is the combination of eight characters. Push up or down button to move cursor and push enter button to select which channel's name, then push left or right button to select each character, push add or DEC button to modify each character, and then push enter button to save this name.

DISPLAY: if set to "OFF", the channel's name will not display on the screen.

### 9. Bri/Con Setup

When the cursor moves to Bri/Con Setup, please push enter button, the Bri/Con Setup window will appear, which is illustrated as below.



BRI: picture brightness CON: picture contrast

Please push up, down, left, and right buttons to move the cursor, push add and DEC button to modify the value.

## 10. Record Setup

When the cursor moves to Record Setup, then push enter button, the Record Setup window will appear, which is illustrated as below. Push upward or downward button to move the cursor. Push “+” or “-” button to change the value. While the DVR is in recording or playback mode, you cannot access to this menu unless you stop record or play first.



**OVER WRITE:** if set to “YES”, the DVR will automatically overwrite the HDD from the beginning when the HDD is full. If set to “NO”, the DVR will automatically stop recording when the HDD is full.

**REC SPEED:** the recording frame rate of the DVR, factory default setting is 30F/1SEC for NTSC (25F/1SEC for PAL), Which means DVR records the events at the speed of 30 shots of frames per second. The higher the record frame rate, the more natural look will be displayed on the screen when you playback. The lower the record frame rate, the more you can save the space on the hard disk drive. The highest frame rate is 60F/1SEC(PAL is 50F/1SEC).

**REC QUALITY:** There are four different video quality settings: LOW, NORMAL, HIGH and VERY HIGH. The higher the video quality, the clearer images when you playback. The lower the video quality, the more you can save the space on the hard disk drive.

**RESOLUTION:** the record picture size of the DVR, there are two modes: 360 and 720, default is 360. In 720 mode, the record picture is twice bigger than in 360 mode, but in 360 mode can save half of HDD usage.

**PB SPEED:** the frame rate of playback, default is NO USE, which means the same as record.

**AUDIO ENABLE:** audio select, the DVR has one record channel, you can select one in four channels, the default is channel one.

**A/M REC TIME:** when a motion or sensor alarm occurred, the DVR record last time, the default is one minute.

## 11. Network Setup

When the cursor moves to Network Setup, then push enter button, the network setup menu window will appear, which is illustrated as below. If a PC View soft from Internet is connected to

the DVR. You cannot access this menu unless you disconnect the PC View.



Network SPEED: network SPEED switch, if the network condition is well, you can set speed fast, and the network can transmit more quickly, but if the network condition is not very well, please set speed normal.

Push upward, downward, leftward or rightward button to move the cursor among the digits, you can push add and DEC button to modify the digits, also, when select a digit, you can push enter button then push left or right button to select each bit of the digit, and then push add or DEC button to modify the bit of this digit, push enter to save you change.

## 12. N/W Enable Set

When the cursor moves to N/W Enable, then push enter button, the N/W Enable setup window will appear, which is illustrated as below.



If one channel here set OFF, this channel will not transmit to the network, so if you want to see a channel from network, you have to set this channel on.

### 13. Mac Set

When the cursor moves to Mac Set then push enter button, the Mac Set window will appear, which is illustrated as below.



If you have more than one DVR in a local area network, you have to set each DVR to have an exclusive mac address, but remember that you have only one chance to modify the mac address, once you have changed the mac address, this menu will not appear again. If you want to change the mac address again, please load the factory set, then you can change the mac address again.

### 14. Alarm Setup

When the cursor moves to Alarm Set, then push enter button, the alarm setup window will appear, which is illustrated as below. Push upward or downward button to move the cursor. Push “+” or “-“ to change the value.



ALARM ENABLE: alarm trigger switch, can be set to off, low lever or high lever. If users set it to off, the DVR will ignore the alarm input.

**MOTION ENABLE:** Motion alarm switch, can be set to on or off, if set to off, the motion alarm will be ignored.

**MOTION LEVEL:** motion sensitivity level, if the figure in the picture is small, please set to high or very high, the default is normal.

**BUZZER SOUND:** buzzer sound time when there is a sensor or motion alarm.

**Note:** Users should press **Schedule** button after setting up the parameters so to activate the settings.

## 15. Motion Detection settings

### 1) When surveying nearby objects (2-10 meters)

When in daytime, please set motion detection sensitivity as Normal level; when in night, please set as low.

### 2) When surveying objects in 50-100 meters area

The objects 50-100 meters away will be quite small on the screen. When in daytime, please set motion detection sensitivity as high level.



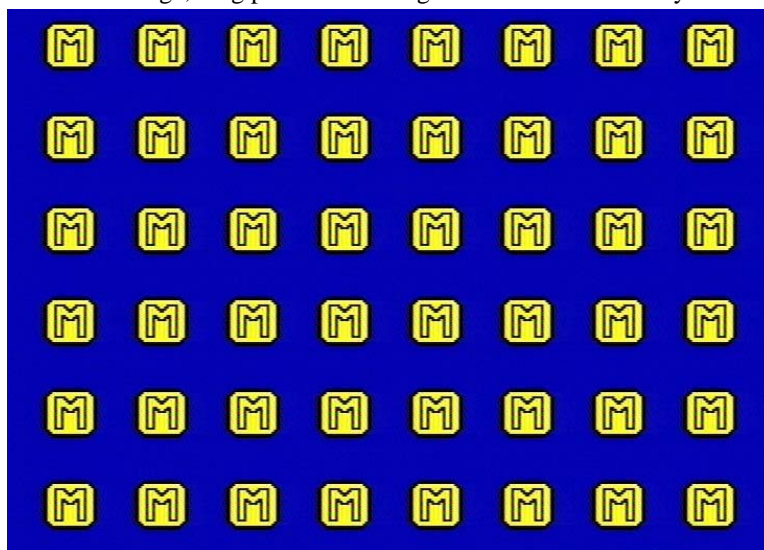
When in night as below, please set as normal level.



**Note: the above suggestions are from many times' tests. User can select the best parameters according to the actual operation environment.**

### 16. Area Set

When the cursor moves to Alarm Set, then push enter button, the alarm setup window will appear, which is illustrated as below. Please push up, down, left, right button to move the cursor and push enter button to change, long push enter change all value the same as you selected.



If one area is set to yellow, this area is motion detected enable, and gray is disable. So if you want to mask some place, just set these area gray.

### 17. Schedule Set

When the cursor moves to Schedule Set, please push enter button, the schedule set window will appear, which is illustrated as below.



You change a recording schedule during a day (24-hour period) using this option. 0-24 stands for 24 hours of a day, each hour is settable to one of three states: T (time), A

(alarm), - (normal).

(T) This period is time scheduled, in scheduled state (push the schedule button), this period will record automatically.

(A) This period is alarm scheduled, in scheduled state (push the schedule button), this period will record automatically when there is an alarm input (include motion and sensor alarm).

(-) This period will not record unless you push the record button.

Push leftward button or rightward button to move the cursor, push “+” or “-” button to change the value, push enter button to set all the value the same as selected one.

**Note: Manual record mode and schedule record mode (including motion detection record mode, sensor record mode and time schedule record mode) cannot be valid at the same time. Once users select Schedule record mode, manual record mode will invalid; once user select manual record mode, schedule record mode will be invalid.**

## 18. Protocol Set

Set right protocol, you can control the DVR by a computer or a keyboard.

When the cursor moves to Protocol Set, then push enter button, the protocol set window will appear, which is illustrated as below. Push upward or downward button to move the cursor, and push “+” or “-” to change the value.



BAUDRATE: Can change form 2400bps to 38400bps.The default is 2400bps.

PROTOCOL: The protocol is computer or keyboard to control the DVR, please refer to appendix A. The default is PTC1.

ADDRESS: The address of the DVR for the protocol, can change from 0x00 to 0xff, default is 0x01.

## Buttons On the Front Panel

The front view of the video-recorder is illustrated as below.



### 1. Recording/Playing Control Buttons Area



**1.Record:** It is manual recording button. Push this button to record video on hard disk, Re-push this button or push stop button, it will stop recording (need password). So, this button is the switch button of manual recording and stopping recording operations. Recording and stop will work simultaneously on four channels' images. This button doesn't work in schedule mode.

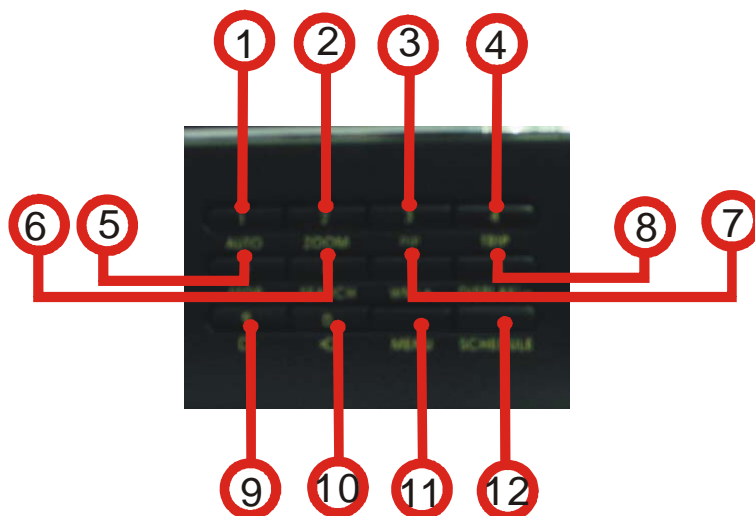
**2.Play:** Push this button to start playing the video stored in hard disk, Re-push this button or push stop button, it will stop playing So, this button is the switch button of playing video and stopping playing operations. Playing and stop will work simultaneously on four channels' images. This button doesn't work while Time recording and Alarming recording.

**3.Pause:** Push this button to stop playing temporarily; push play button to continue to play.

**4.Rew:** Fast backward button. Push this button to start fast backward playing till push play button to start normal playing from the present position.

**5.Forward:** Fast forward button. Push this button to start fast forward playing till push play button to start normal playing from the present position. The fast forward has five speeds; every time you push the button will change the speed from slow to fast and then back to slow.

## 2.Function Control Area



**1.Auto/1:** Auto key, push this button, The DVR will be in auto dwell state, it dwells according to the time set in auto sequence set menu, you can set the dwell time of each channel. Push channel select button to quit this mode. While inputting numbers, this button is used as number key of “1”.

**2.Zoom/2:** Zoom key, push this button, the DVR will be in zoom mode, please refer to zoom operation in user guideline for details, push zoom button again to cancel zoom operation. While inputting numbers, this button is used as number key of “2”.

**3.PIP/3:** PIP key, push this button, the DVR will be in PIP mode, please refer to PIP operation in user guideline for details, push channel select button to quit PIP mode. While inputting numbers, this button is used as number key of “3”.


**4.Trip/4:** Trip key, push trip button, the DVR will be in trip mode, please refer to trip operation in user guideline for details. While inputting numbers, this button is used as number key of “4”.

**5.Stop/5:** Stop key, while recording or playing video, push this button to stop recording or playing. This button doesn’t work while Time recording and Alarming recording. While inputting numbers, this button is used as number key of “5”.


**6.Search/6:** Search key, push this button to enter search menu, please refer search play in user guideline for details. While inputting numbers, this button is used as number key of “6”.

**7.WM/7/+:** Watermark key, if the DVR is playing video, you can push this button to see the watermark of the picture, if the video was recorded by this DVR and has not be changed, there will be a watermark symbol in each picture, push watermark key again to clear the display. While inputting numbers, this button is used as number key of “7”, When in system setup menu, this is an increase button.

**8.Display/8/-:** Display key, push this button to display current information on the screen, push again this to clear the information display. While inputting numbers, this button is used as number key of “8”. When in system setup menu, this is a decrease button.

**9.  /9:** Single frame rewind button, while in playback state, long press this button can see single frame rewind, press play button to play normally. While inputting numbers, this button is

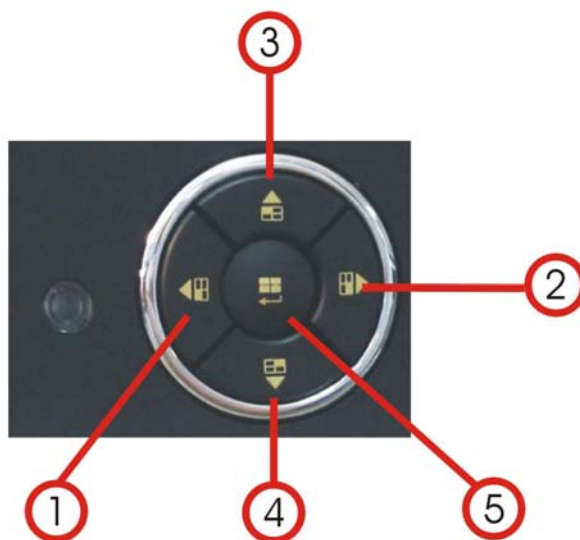
used as number key of “9”.

**10.  /0:** Single frame forward button, while in playback state, long press this button can see single frame forward, press play button to play normally. While inputting numbers, this button is used as number key of “0”.

**11.Menu:** Push this button to enter system setup menu, in menu setup mode, push this button to save settings and quit current menu.

**12.Schedule:** Push this button to enter schedule state, if the DVR is in schedule state, there will be an “S” symbol on screen, push again this button to quit schedule mode.

### 3.Channel Choosing Control Area



**1.First channel/up:** Push this button to see full screen display form channel 1. While selecting menu items, push this button to move up the cursor.

**2.Second channel/down:** Push this button to see full screen display form channel 2. While selecting menu items, push this button to move down the cursor.

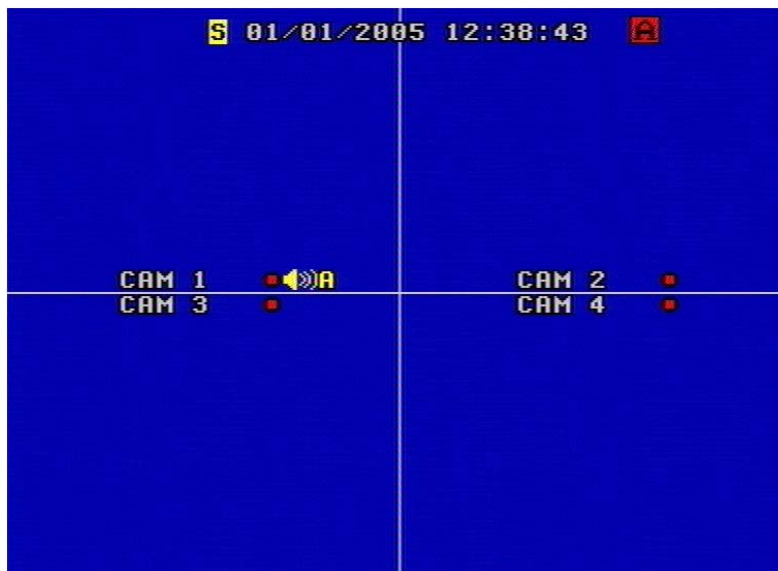
**3.Third channel/left:** Push this button to see full screen display form channel 3. While selecting menu items, push this button to move the cursor leftward.

**4.Forth channel/right:** Push this button to see full screen display form channel 4. While selecting menu items, push this button to move the cursor rightward.

**5.Quad/enter:** Push this button to see all images of 4 channels. While selecting menu items, push this button to select the item.

## Display Statuses While Running

### 1. Screen Display While Running



**S**: Means DVR is schedule on. : There is an alarm input.

**A** : Channel 1 has an alarm input. : Channel 1 is audio on.

: DVR is recording video now.

### 2. Screen Display While Playing



: DVR is playing video. : Live picture is loss.

01/07/2005 13:02:13: live time in white color

01/02/2005 13:14:35: playback time in yellow color

### 3. TRIP Display



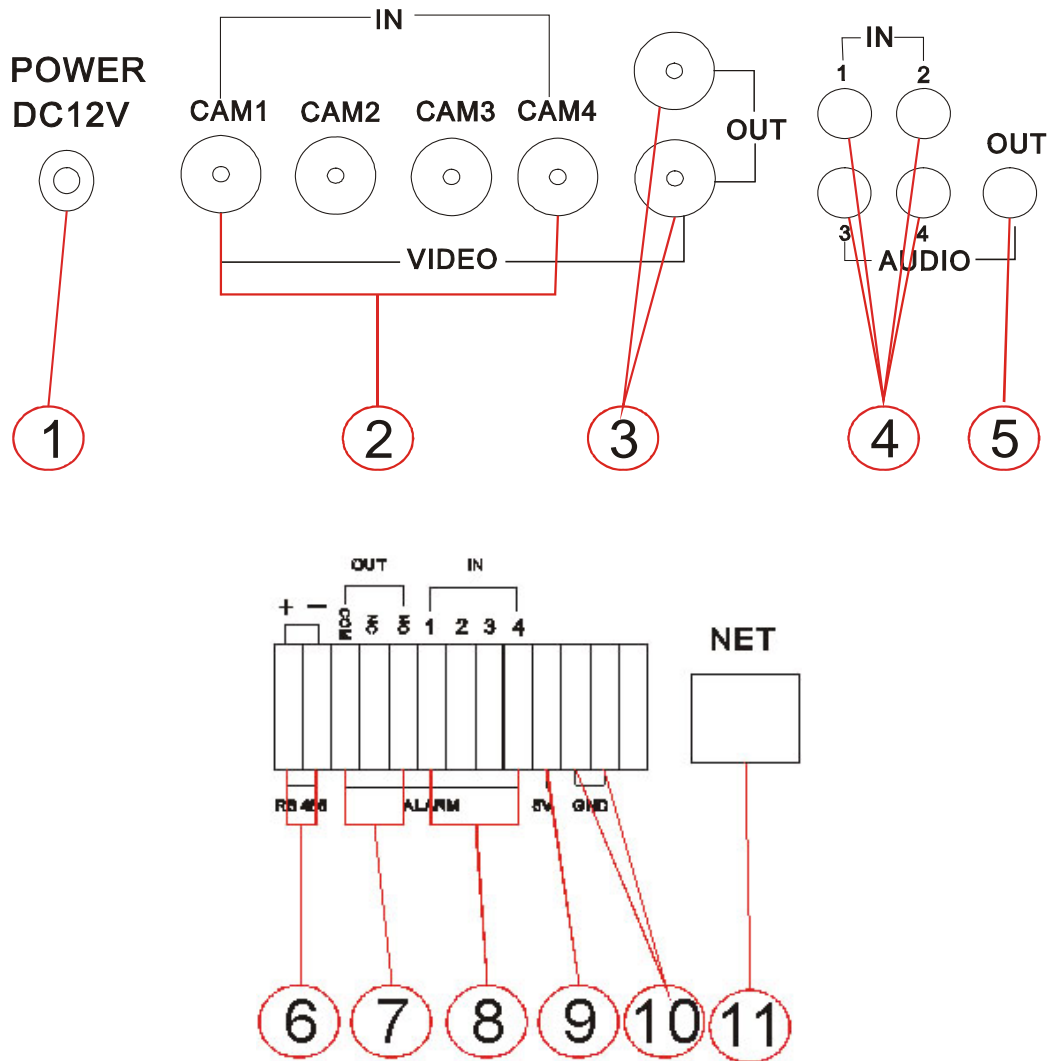
In trip mode, there will be eight pictures on screen, PB CH1~ PB CH4 are playback pictures, CAM 1~ CAM4 are live pictures.

Push Trip button or channel buttons to exit Trip mode.

## System Connection

### 1.Back Panel and Connection Terminals

The power cord and input, output signal terminals are all at the back of the machine, the connections to monitor, camera etc equipments are all carried out through the terminals and sockets on the back panel. The back view of the machine is illustrated as below.

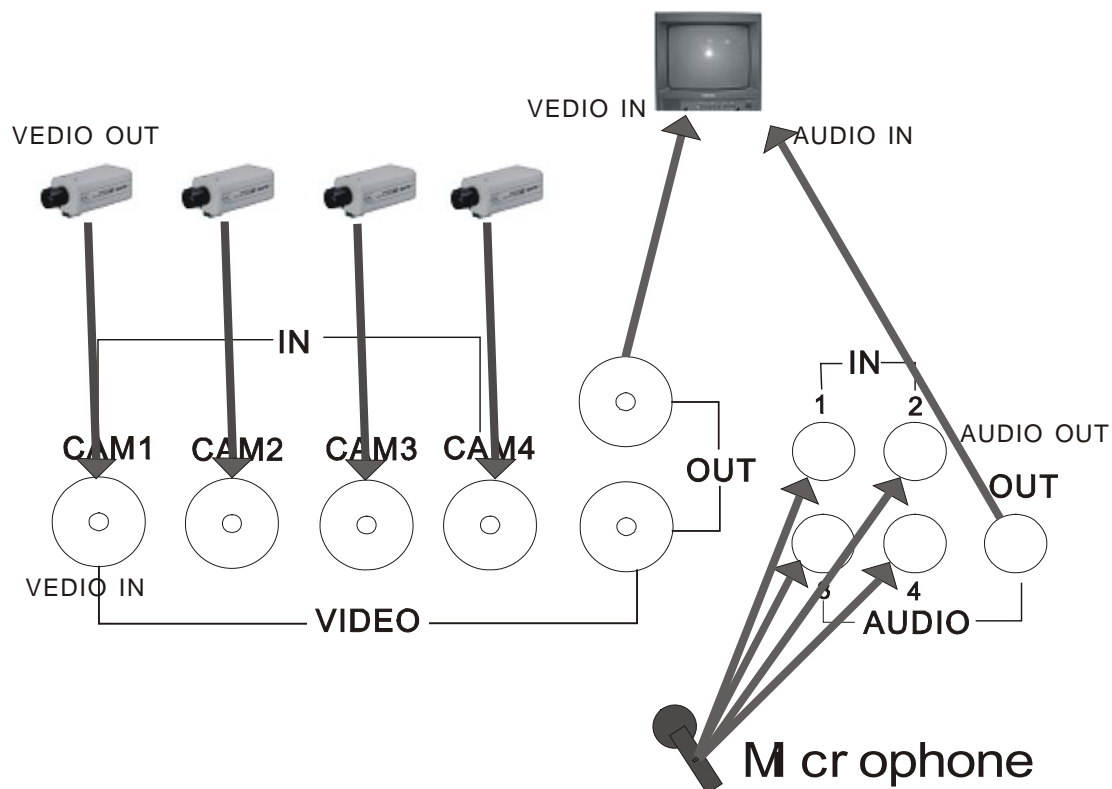


Each part of the back panel is illustrated as below:

- 1 Power 2. Video input 1, 2, 3, 4 3.Video output 4.Audio input 1, 2, 3, 4
- 5.Audio output 6.RS485 7.Alarm output 8.Alarm input
- 9. +5V 10. GND 11. Net interface

## 2.Video and Audio Connection

The DVR can support up to 4 cameras video input at the same time.



There are two steps for camera installation.

- I .Connect the Video Signal Line to the DVR channel input.
- II .Connect the power adaptor jack to the camera.

The DVR can connect 4 channel's audio input, but you can only select one for recording.

To display the DVR picture, the DVR's video output signal should be transferred to your TV set or monitor. Any TV set that has a "video input" terminal is suitable for displaying the picture. The figure above shows the video and audio signal line connection.

**Note:** at one time, you can only connect one audio input, which means, if you connect an audio to cam1, you cannot connect any of cam2 to cam 4. You should plug them out.

## 3.Alarm Connection

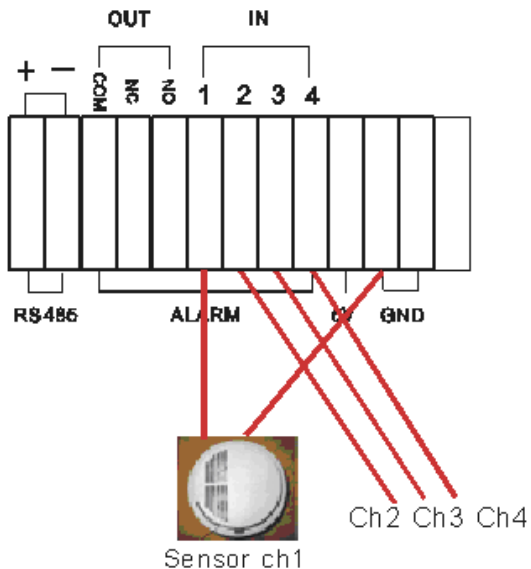
The DVR can support up to 4 alarm input and three alarm output.

**Alarm input:** There are two types of alarm input.

1. Voltage output (5V and 0V)

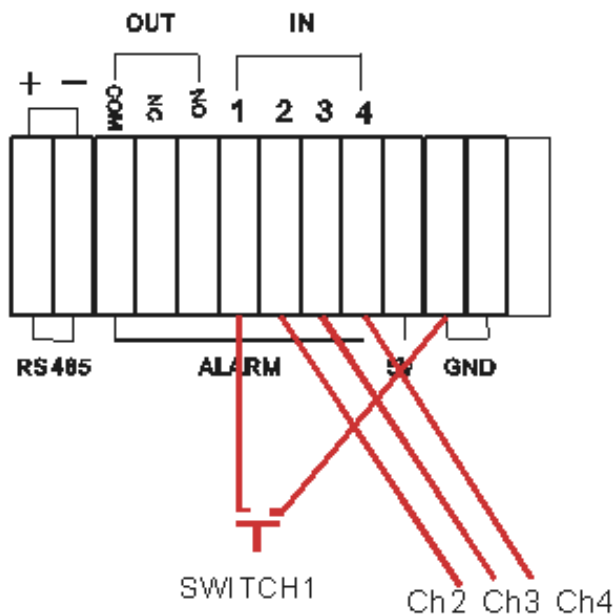
A: In case sensor output high voltage (5V) normally and output low voltage when triggered (0V), then users must set DVR as low voltage alarm.

B: In case sensor output low voltage (0V) normally and output high voltage when triggered (5V), then users must set DVR as high voltage alarm.



2. Open/Close output

- A: N.O. Normal open, close when triggered. DVR must set as low voltage alarm.
- B: N.C. Normal close, open when triggered, DVR must set as high voltage alarm.



**Alarm output**

There are three alarm output pin, the status of these pin are illustrated as below

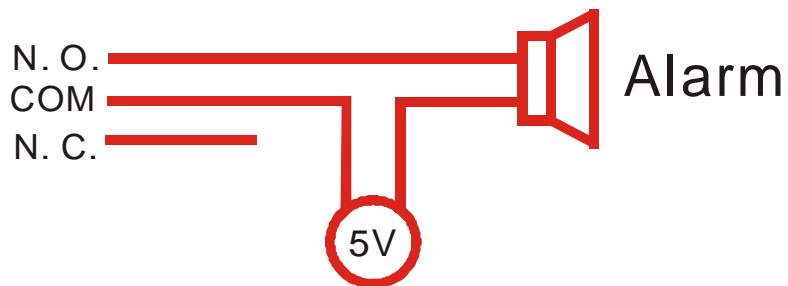
Before alarm



After alarm





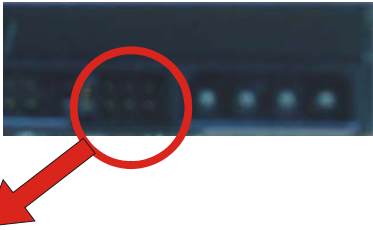

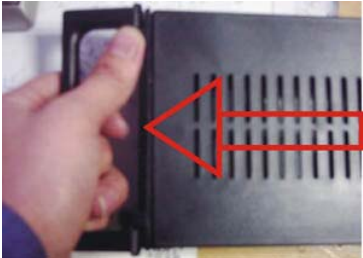

There is an example for alarm output connection



#### 4.Hard Disk Connection

There are several steps to install the hard disk.

**Note: If the DVR comes with a HDD, skip the following steps.**

<p>1. Pull out the hard drive rack from the DVR side panel.</p> 	<p>2. Open the top cover of the drawer.</p> 
<p>3. Jump HDD to Master</p>  <p>Jump to Master</p>	<p>4. Connect the ribbon cable (IDE) cable &amp; power cable.</p> 
<p>5. Close the top cover of the drawer and put the hard drive drawer back into the DVR. (Make sure the cables are firmly pressed onto the HDD interface)</p> 	<p>6. Lock the hard drive draw by turning the key clockwise.</p> 

## User Guideline

### 1.Start the Machine

- Before starting the machine, please make sure all the items in the “**Security Notice**” at the beginning of this manual are fulfilled.
- Before starting the machine, please check the system connection, input and output equipment connection.
- Please insure the video-recorder’s input video (NTSC/PAL) and the monitor (NTSC/PAL) meet the demands.
- Start exterior equipment after checking over.
- Insert the removable hard disk case to the end, and lock it up (turn right the hard disk lock); connect the power, the machine start to work.

### 2.Turn off the Machine

- Normally turn off the machine when the system shutdown, which means do not to turn off the machine while playing or system setting up, especially not to turn off the machine while recording
- Push recording button to stop recording or push playing button to stop playing or exit from system setup menu, then turn off the power.
- If do not use the video recorder for a long time, should pull out the power line from the electrical outlet.

### 3.Normal Recording

- Connect the power to all related equipments; ensure that there is video input.
- Push display button to check spare space of the hard disk, if there is no much space, please think whether to change hard disk first or select overwriting modes.
- Check recording parameter setup before recording; select video quality, frame rate. you cannot change record setting during the process of recording.
- Manual recordings belong to normal recording. Under the manual mode (non-schedule status), here pushing record button will record all channels’ image video.
- Push the record button to begin recording, four channels will start simultaneously recording. While in normal recording mode, push record or stop button, and enter the right password, it will stop recording.
- During the process of recording, if the hard disk is full, and the system is set to automatic overwrite, then the recording will not be interrupted, and it begins to overwrite from the earliest recorded area; if the system is set to overwrite disable, it will stop recording.

## 4. Alarm Recording

- Alarm recording is not started by manually pushing record button, all the recording started by manually pushing the record button are normal record.
- Alarm recording can be activated by alarm input signal or motion, so it must to check whether the connection of alarm input equipment is correct, stable and reliable, and the alarm set is right.
- The prerequisite condition of whether the alarm recording can be activated by exterior input signal or the motion is that the system must be set on schedule and *that period is set to "A" in record schedule setup*, also, in the menu of alarm setup, for exterior input alarm, alarm enable of that channel must set to "ON", for motion alarm, motion enable of that channel must set "ON", and set the right area for motion detect.
- Under the state of off-schedule, system will never start alarm recording. Setting schedule on or off is achieved through pushing the schedule button on the front panel, but not through system setup menu and window. Under schedule-on situation, the character "S" will display on the screen.
- Alarm video recording cannot stop by pushing record or stop button, but can stop by removing schedule. Because once the system is set on schedule, the schedule cannot be removed randomly, so there is a password protection to remove schedule, only after inputting correct password, you can take schedule off.
- Check alarm recording setup before recording; confirm the video quality and the frame rate, the record setting cannot change during recording process.
- As long as the alarm input signal is effective, the alarm recording continues. When the alarm input signal loses efficacy, the time set up by "A/M REC TIME" becomes effective, and when the time goes out, the alarm recording automatically stops. In course of this, if you want to manually stop alarm recording, the only way is to remove schedule (answer the password).

## 5. Time Recording

- Time recording starts and stops recording automatically according to the pre-arranged time period. It is applied to fixed timetable, for example, the periodical work time recording (or off time recording) with fixed start/stop time.
- To start Time recording function, besides making record schedule setup beforehand, must push down the schedule button on the front panel to set schedule on. While pushing down this button, the schedule symbol "S" will display on the screen. Without pushing the schedule button, the Time recording parameter setup will not work.
- The prerequisite condition of whether the time recording takes effective is system must

be set on schedule and *that period is set to "T" in record schedule setup.*

- In time record state, you can push again schedule button then enter password to stop time recording.
- Because Time recording is correlated closely with time, so before using this function, should previously adjust the time.

## 6.Playback

- Push play button , system begins to play the images recorded from the place that last time play to.
- In the process of playing, push pause button to pause playing, re-pushing play button can resume continuous play.
- In the process of fast forward playing or fast backward playing, pushing push play button will begin normal playing from the current place.
- Continuous pushing forward button will change the fast-forward among five levels of speed (X2, X4, X8, X16, X32) circularly. Continuous pushing reward button will change the fast backward among four levels of speed (X2, X4, X8, X16) circularly.
- During playback mode, long press backward frame button will play backward frame by frame, long press forward frame button will play forward frame by frame. Push play button to play normally.
- Push again play button or push stop button will stop playing.

## 7.Search Play

- Push search button , search play window will display on the screen.



- TIME SEARCH: search play by input time.
- EVENT SEARCH: search play by event list.
- START STOP SEARCH: search play by segment.
- Push upward and downward button to move cursor, then push enter button to enter sub menu you select, push search button to quit from search menu.

## 8. Time Search

- When the cursor moves to Time Search, then push enter button, the time search window will appear, which is illustrated as below.



- Push leftward and rightward button to move the cursor, push add and DEC button to modify the time, then push enter button to start play from the time you enter. Push search button back to Search Play menu.
- If the time you enter has no play video, the DVR will automatically play the video most close to the time you enter.
- START: the first time you record, END: the end time of recording, you must enter right time between start and end. If the HDD has been overwritten, the start time maybe not correct.

## 9. Event Search

- When the cursor moves to Event Search, then push enter button, the event search window will appear, which is illustrated as below.
- There are four types of event list: MOTION, ALARM, SCH and NETWORK. MOTION means motion alarm recording, Alarm means sensor alarm recording, SCH means time

recording, NETWORK means network recording.



- Push upward and downward button to move the cursor among the event list, push leftward and rightward button to see previous or next page, push enter button to play the segment you select. Push search button back to Search Play menu.

## 10. Start Stop Search

- When the cursor moves to Start Stop Search, then push enter button, the Start stop search window will appear, which is illustrated as below.



- All record segments are displayed here, push upward and downward button to move the cursor among the segment list, push leftward and rightward button to see previous or next page, push enter button to play the segment you select. Push search button back to Search Play menu.

## 11.Zoom Operation

Push zoom button, the DVR will be in zoom mode, which is illustrated as below. Push upward, downward, leftward or rightward to move the zoom area, then push enter button to zoom, push zoom button again to cancel zoom operation.



## 12.PIP Operation

Push PIP button, the DVR will be in PIP mode, which is illustrated as below.



You can push again PIP button to change PIP mode, long press PIP button can set each PIP picture. Long press PIP button, when one channel name is in yellow, push left and right button to change selected channel, push add and DEC button to change this channel's picture, push enter

button to cancel this mode, push channel select button to quit PIP mode.

### 13.Information Display

If you push display button, the main information of the DVR will display on screen.



HDD SIZE: the size of the hard disk you insert to the DVR.

HDD USED: the usage of the hard disk.

OVERWRITE: hard disk overwrite enable. 00:HDD full count time

REC SPEED: record frame rate speed.

QUALITY: record picture quality.

RESOLUTION: record resolution.

AUDIO: audio enable camera.

IP ADDRESS: IP address of the DVR.

NET SPEED: Networks transmit speed.

VALID REC TIME: the first and the end of recording time

### 14.Default Setting

Default setting for each item is shown in the below chart.

“Defaults” is the initial setup by the manufacturer. User can change the setup according to the actual environment and demands. If there is any confusion or unexpected effect, choose “Defaults” and readjust.

You can choose “FACTORY RESET” in “SYSTEM SET” menu, and reset all settings to default setting.

SYSTEM SETUP	Setup window for each item	Setup items	Default setup	Selectable setup
	General setting	Year/Month/Day/ Hour/Minute	2005/01//01 12/00/00	2000~2099/Common sense rules
		Auto Time	1 second	0~99second
		Buzzer Sound	ON	ON/OFF
		Password	1111	N/A
		Play Repeat	YES	YES/NO
		Video Input	NTSC format	NTSC/PAL
	Recording Para	Quality	Normal	Very high/High/Normal/Low
		Overwrite Enable	YES	YES/NO
		Rec Speed	30f/s(NTSC) 25f/s(PAL)	60f/s~1f/2s(NTSC) 50f/s~1f/2s(PAL)
		Resolution	360	360/720
		PB Speed	NO use	60f/s~no use(NTSC) 50f/s~no use(PAL)
		Audio Enable	CAM 1	CAM1~CAM4/OFF
		A/M REC Time	1 Minute	0~99minute
	Net Work Setting	Sub Net	255.255.255.0	N/A
		Gate Way	192.168.1.1	N/A
		IP Address	192.168.1.167	N/A
		Net Work Speed	Fast	Fast/Normal
		N/W Enable	ON	ON/OFF
		Mac Address	0a0b0c0d0e0f	N/A
Alarm setting	Alarm Enable	OFF	ON/OFF	
	Motion Enable	OFF	ON/OFF	
	Motion Level	Normal	Very low/Low/ Normal/High/Very high	
	Buzzer Sound	No Use	0~99 second	
	Schedule setting	A	A/T/-	
Protocol Setting	Baud Rate	2400	2400/4800/9600/19200/38400	
	Protocol	PTC1	PTC1/ PTC2/ PTC3/ PTC4	
	Address	01	0~0xff	

## 15.Remote Control



- All the function of the DVR can be operated by the remote device.

## 16.Serial Port Control

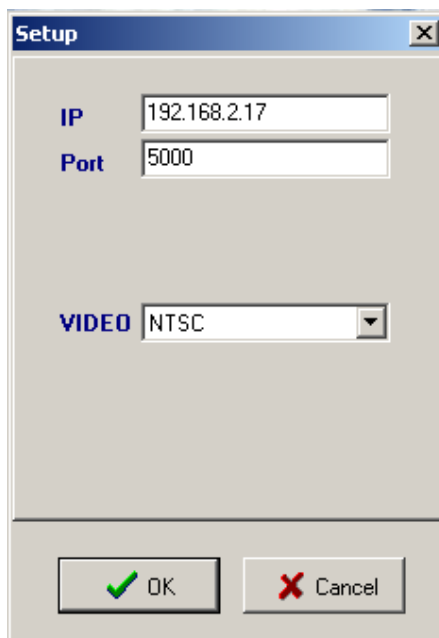
To control the DVR through the RS485, you have to make sure the protocol and baud rate is right, please refer to appendix B.

## 17. PC View Software Operation

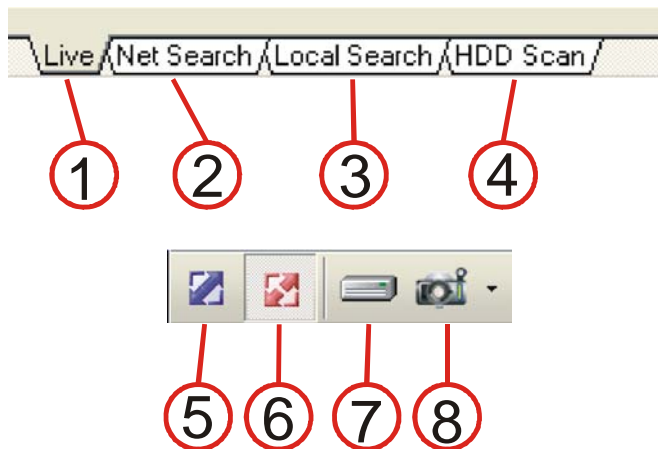
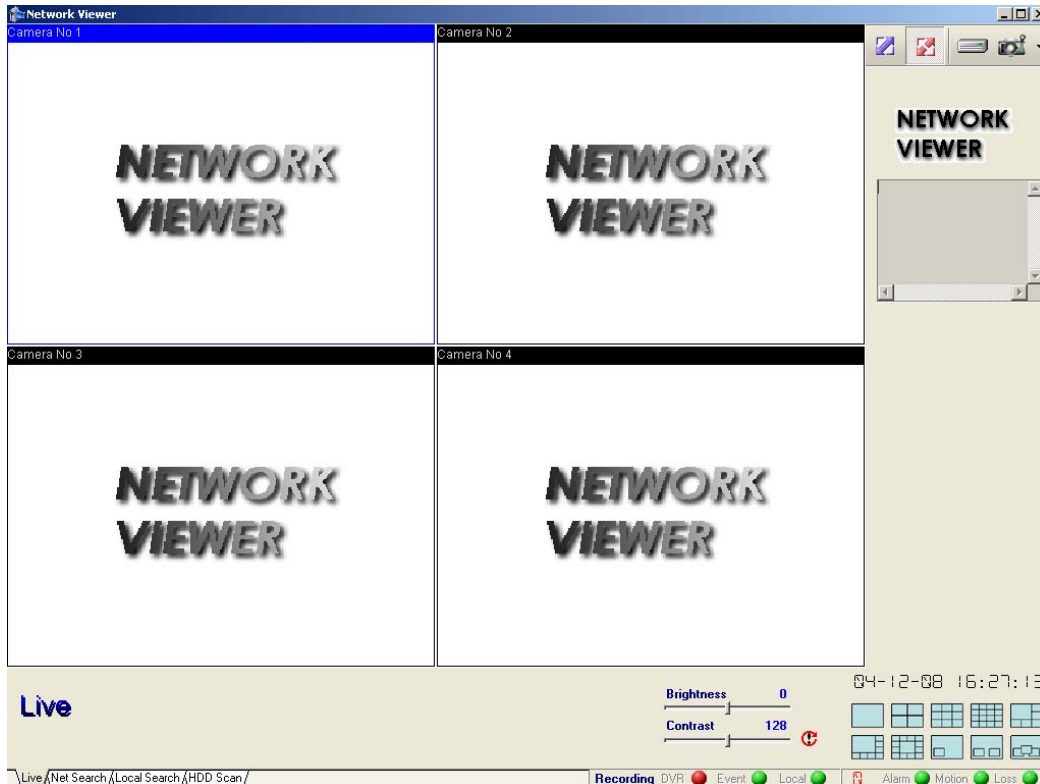
- Use the PC View software, you can view the DVR from Internet, also, you can view and backup the video information on the HDD through a computer.
- First, install the PC View software from the CD attached.
- Open the software, you will see the window below:






- The default ID and password are both “admin”, click “Setup” to set IP and system format as below:

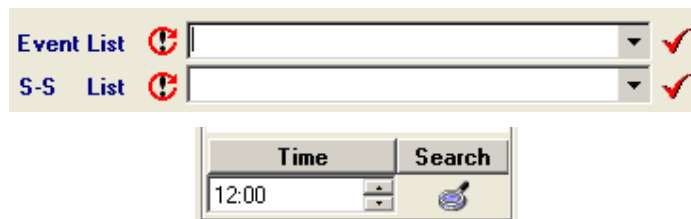




- Enter the correct IP address and video system, then click “OK”, if the net connection is right and the DVR is running, you can see the window below, otherwise, if cannot find the DVR, the soft will give error message.
- When users survey by Internet, they should firstly open ports 5000-5002 on the router side. Please learn more about how to do that from the manual of router.



- 1. Live: if you select this, you can connect to the DVR from Internet and view the live pictures on the DVR. 2.Net Search: if you select this, you can search the video recorded on HDD of the DVR, 3. Local Search: if you select this, you can play the video recorded on you computer. 4. HDD Scan: it can scan all video information on a HDD that has been used on a DVR. 5. Connect button. 6. Disconnect button. 7.Local record button, if you press this icon, it will record the pictures from the DVR to you local computer. 8.setting.
- **Live Operation:** if the software is in live mode (click **Live**), then click , it will connect to the DVR, and the live pictures will be transmitted to display on the window. Click , it will stop transmitting picture.




- Net Search operation:** if the software is in net search mode (click ) , net search window will display, it include event search, start stop search and time search.





**Event Search:** click  offside Event List, then click , event list will display as below:

Index	CH	Time	Type
0036	00	2004-12-30 22:40	Motion
0037	00	2004-12-30 22:51	Motion
0038	00	2004-12-30 22:55	Motion
0039	00	2004-12-30 23:08	Motion
0040	00	2004-12-30 23:10	Motion
0041	00	2004-12-30 23:13	Motion
0042	00	2004-12-30 23:20	Motion
0043	00	2004-12-30 23:22	Motion



Below the table are two dropdown menus: 'Event List' and 'S-S List', each with a red circular icon containing a white exclamation mark and a red checkmark to its right.


Select one event list and click  offside Event List, then click , it will start to play this event video. Select another list and click  again, it will play the selected event video.

**Start Stop Search:** click  offside S-S List, then click , start stop list will display as below:

Index	Start Time	End Time
0001	2004-12-31 15:34	2004-12-31 15:36
0002	2004-12-31 15:36	2004-12-31 15:39
0003	2004-12-31 15:40	2004-12-31 15:45
0031	2004-12-31 15:17	2004-12-31 15:21
0032	2004-12-30 22:09	2004-12-30 22:13
0033	2004-12-30 22:13	2004-12-30 22:20
0034	2004-12-30 22:25	2004-12-30 22:28
0035	2004-12-30 22:28	2004-12-30 22:31

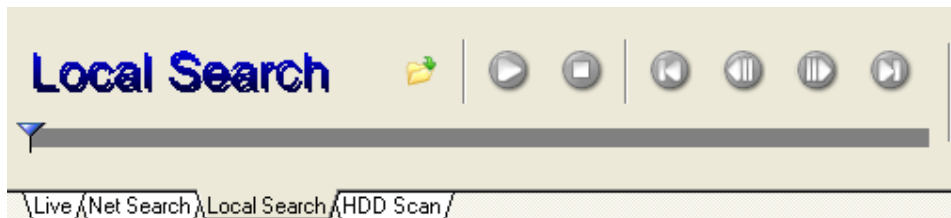
Below the table are two dropdown menus: 'Event List' and 'S-S List', each with a red circular icon containing a white exclamation mark and a red checkmark to its right.



Select one event list and click  offside Event List, then click , it will start to play this event video. Select another list and click  again, it will play the selected event video.



**Time Search:** enter time in time search box, then click , it will start to play video from the time you enter.





- Local Search operation:** if the software is in local search mode (click **Local Search**), local search window will display, it can play the video on HDD of you computer.

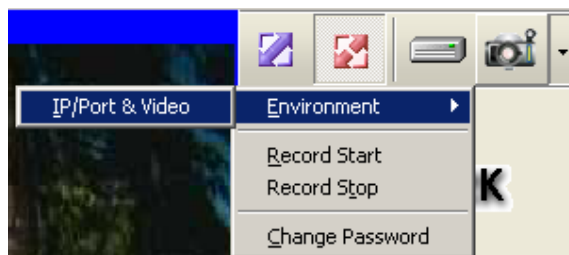


Click , select one video file, the click , it will play the video file

- HDD Scan:** Connect the HDD that used in the DVR to a PC and then select HDDScan, if the software is in HDD scan mode (click **Local Search**), local search window will display, click  and select one HDD, then click , it will scan all video information on the HDD.



- Local Record:** click  to start local record, it will record picture from Internet onto local HDD of the computer, click again to stop recording.
- Setting:** click , setting window will display, you can change IP/Port and Video format of the DVR, start and stop recording on DVR.



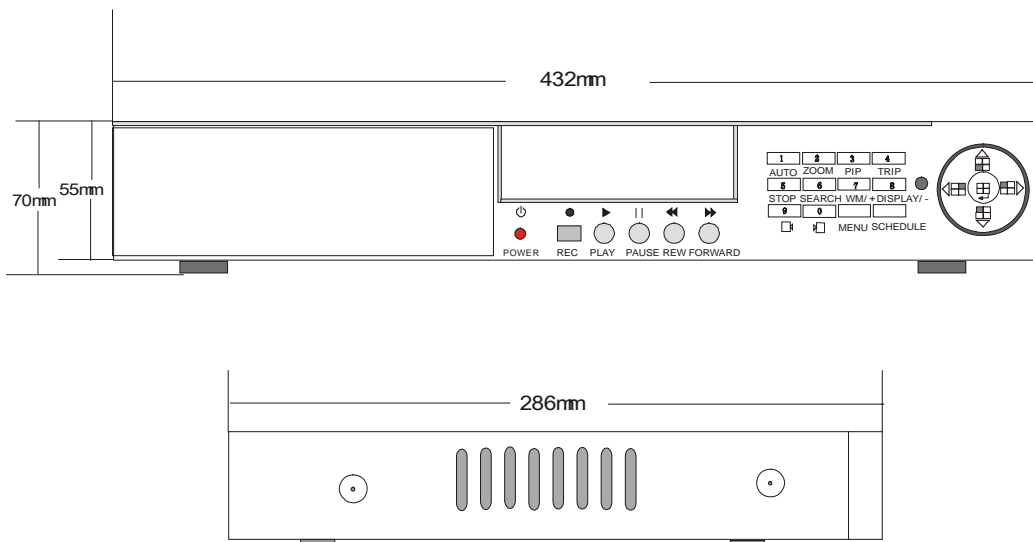
- Quit:** first you have to click , then click  to close the software.

## Main standard & parameter chart

Item	Specification
Video signal	NTSC/PAL
Video input	Composite: 1.0V p-p/75 $\Omega$ , BNC $\times$ 4
Video output	Composite: 1.0V p-p/75 $\Omega$ , BNC $\times$ 2
Audio input	-8Db 22K $\Omega$ , RCA connector $\times$ 4
Audio output	-8Db 3K $\Omega$ , RCA connector $\times$ 1
Alarm input	4
Alarm output	1
Compression standard	Modified MJPEG
Record time	18-1680 hours/40G
Electron clock	Year/Month/Day; Hour/Minute/Second
Secrete function	Password protection
Power source	DC12V
Power	25W
Environment temperature	Work Temperature: +5 $^{\circ}$ C~+50 $^{\circ}$ C ; humidity: < 90% Store Temperature: -20 $^{\circ}$ C~+70 $^{\circ}$ C ; humidity: < 95%
Exterior size	432 $\times$ 55 $\times$ 286mm
Weight	About 3.2Kg

**Notice: Sorry for not inform in time of any changes to the standards and exterior sizes.**

### Exterior size



### Incase list

**Incase list**

Name	Quantity
4-channel hard disk video recorder	1
Remote device	1
Power wire	1
Keys to removable hard disk control lock	2
User guideline	1

In case of any question, please do not hesitate to contact the dealer directly.

## Appendix A: Trouble shooting guide

**Q.** What kind of camera should I buy for this DVR?

**A.** Any BNC or RCA interface indoor/outdoor/infrared camera will work with the DVR. It doesn't matter whether it's a color or black/white camera. However, web cameras that require a USB interface are not compatible with the DVR.

**Q.** What kind of alarm device should I buy for DVR?

**A.** Most sound alarms are compatible with our DVR.

**Q.** I can't turn on DVR.

**A.** Make sure that the power cord is plugged in correctly and the red power light on DVR front panel is on.

**Q.** I see nothing but a blue screen after I turn on DVR.

**A.** Check the camera input and video output connection on DVR back panel. If you can't find problem with these connections, check whether the camera power cable is firmly connected. Make sure the system format for NTSC and PAL is right.

**Q.** I see a fatal error message on the screen.

**A.** If you see the error messages such as "System fatal error is occurred", pull out and put in the hard disk drive or replace the hard disk. Also make sure that hard disk rack is firmly locked. Otherwise, replace the hard disk.

**Q.** Can I prevent other people from stopping the recording while I am gone?

**A.** If the DVR is in schedule or recording mode, no one can change the set unless he has the right password.

**Q.** How can I erase all data on the hard disk drive?

**A.** Select "HDD Format Set" option on the menu.

**Q.** I forgot my password. What should I do?

**A.** Press the "1234" when entering password and it will reset DVR's password to factory default. Then the password will reset to factory default (0000).

**Q.** Can my desktop PC read the video data on hard disk drive in DVR?

**A.** Yes, you can use our software to read all video data on hard disk.

**Q.** What happens if I install my PC hard disk drive into the DVR?

**A.** You can use a PC hard disk drive in the DVR. However, once it runs in DVR, it will delete any PC operation system and files on the hard disk drive.

**Q.** What kind of hard disk drive should I purchase to make the DVR run?

**A.** Any PC compatible IDE, ATA hard disk drive will work.

**Q.** Does this DVR kit come with sensors, cameras, or hard disk drive?

**A.** No. You have to buy each accessory separately.

**Q.** What is the capacity to record?

**A.** Up to a year with two 120 GB HDD at the lowest quality setting when set at 1 frame per second.

**Q.** Does this DVR come with a remote control either hardwire or wireless?

**A.** Yes, there is a remote control come with the DVR.

**Q.** Can I control the DVR with a computer or a keypad?

**A.** Yes, you can use a computer or a keypad to control the DVR through the RS485 port.

**Q.** Why cannot I access Time/Date Set, HDD Format Set, Record Set menu?

**A.** Please stop record or play before you access these menu.

**Q.** Why cannot I access Network Set menu?

**A.** Please stop the connection of the PC View soft from Internet before you access Network Set menu.

**Q.** I push record button, but the DVR does not start recording, why?

**A.** Push display button to see if there is a hard disk detected, also if the DVR is in schedule mode (there is a "S" on the screen in yellow), you cannot start recording by push record button, you have to push schedule button again to cancel schedule mode.

**Q.** I push stop button, but the DVR does not stop recording, why?

**A.** If the DVR is recording in schedule mode (there is a "S" on screen), you cannot stop recording unless you quit schedule mode first. Push schedule button to cancel schedule mode.

**Q.** There is a movement, but the DVR does not start recording.

**A.** Make sure the motion enable of that channel is on, the area set is ok, the A/M rec time is not set to off, that time of schedule is set to "A", and the DVR is in schedule mode. Otherwise set the motion level to HIGH or VERY HIGH.

## Appendix B: serial port protocol

Serial port setting: BAUD, n, 8, 1 (BAUD =2400,4800,9600,19200,38400)

**PTC1:** (three byte)

Command (CHAR)	Hexadecimal Number	Function Description
/RE	0x2F 0x52 0x45	Record
/TP	0x2F 0x54 0x50	Play
/PE	0x2F 0x50 0x45	Pause
/RT	0x2F 0x52 0x54	Reward
/FT	0x2F 0x46 0x54	Forward
/FS	0x2F 0x46 0x53	Auto/1
/FS	0x2F 0x5A 0x4D	Zoom/2
/ZM	0x2F 0x50 0x50	PIP/3
/RS	0x2F 0x52 0x53	Trip/4
/SP	0x2F 0x53 0x50	Stop/5
/SH	0x2F 0x53 0x48	Search/6
/QY	0x2F 0x51 0x59	Water mark/7/+
/DY	0x2F 0x44 0x59	Display/8/-
/SE	0x2F 0x53 0x45	Previous field/9
/FF	0x2F 0x46 0x46	Next field/0
/AF	0x2F 0x41 0x46	Menu
/SC	0x2F 0x53 0x43	Schedule
/01	0x2F 0x30 0x31	Ch1/up
/02	0x2F 0x30 0x32	Ch2/down
/03	0x2F 0x30 0x33	Ch3/left
/04	0x2F 0x30 0x34	Ch4/right
/22	0x2F 0x32 0x32	Chall/enter

**PTC2:** (seven byte)

Transmitting S.N	Transmitting worth	Instructions
Byte1	0x03	Fixed byte
Byte2	0xaa	DVR identifier word
Byte3	0x01	Fixed byte
Byte4	Device id	DVR device address
Byte5~7	Refer to PTC 1	Same command as PTC 1

**PTC3:** (seven byte)

Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7
0xFF	Addr	<i>Var1</i>	<i>Var2</i>			Check sum

Var1	Var2	Function	PELCO-D
0x00	0x08	Ch1/up	Up
0x00	0x10	Ch2/down	Down
0x00	0x04	Ch3/left	Left
0x00	0x02	Ch4/right	Right
0x04	0x00	Chall/enter	Iris close
0x00	0x40	Record	Zoom wide
0x00	0x20	Play	zoom tele
0x02	0x00	Search	Iris open
0x00	0x80	WM/+	Focus far
0x01	0x00	Display/-	Focus near

Byte 5 and byte 6 are ransom value from 0x00 to 0xFF.

Byte 7 = mod [(byte2 + byte3 + byte4 + byte5 + byte6)/100]

**Note:** This protocol is the same as PELCO-D, which is used to control speed dome. So, if you use PELCO-D to control speed dome by a keyboard, you can also use the keyboard to control the DVR through this protocol, we can use different address to distinguish the DVR and the speed dome.

**PTC4:** (eight byte)

Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7	Byte8
0xA0	Addr	0x00	0x07	0x00	<i>Var</i>	0xAF	Checksum

Byte8 = byte1 xor byte2 xor byte3 xor byte4 xor byte5 xor byte6 xor byte7

Var	Function	Var	Function
0x01	Ch1/up	0x0C	Schedule
0x02	Ch2/down	0x0D	0/next field
0x03	Ch3/left	0x0E	1/auto
0x04	Ch4/right	0x0F	2/zoom
0x05	Chall/enter	0x10	3/PIP
0x06	record	0x11	4/trip
0x07	Play	0x12	5/stop
0x08	Pause	0x13	6/search
0x09	Reward	0x14	7/WM/add
0x0A	Forward	0x15	8/display/DEC
0x0B	Menu	0x16	9/previous field

**Note:** This protocol is the same as PELCO-P's call function; you can use PELCO-P's call function to control the DVR. First, you must set right protocol, baud rate and address, second, you push call button on the keypad, then push the number according to *Var* above, last push enter button.

**Appendix C:** record time for 40G hard disk (hour)

<b>Rec rate field/sec</b>	<b>Picture quality</b>	<b>Resolution</b>	<b>Recording time</b>
50 fps	Very high	720	7.5 hours
50 fps	Low	720	20 hours
25 fps	Normal	360	24 hours
25 fps	Low	360	67 hours
1 fps	Normal	720	720 hours

**Note: The above figures are from our test results. Just for users' reference. Different definition and stabilization (objects' movement) of the images will make some kind of different results.**