Preface

Thank you for selecting our products. We will offer the best service for you wholeheartedly.

We take DVR7024 as a sample.

It is for reference only. We will not provide any new information separately for later firmware update. The updating files will be added into the new edition of the user manual and will also be posted on our website in the download center. This user manual may have some inaccuracy or misprint. We sincerely hope your timely feedback and comments to let us correct and improve this booklet in the subsequent edition.

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Chapter 1 Brief Introduction about the DVR

1.1 Summarization

DVR7024 Digital Video Recorder is designed for video/audio digital surveillance system. It adopts H.264 compress format, integrate the embedded Linux OS and integrative design to realize all of the functions like video and audio acquisition and compression, storing, remote control, Multi-PTZ control and alarm in a single board. This series DVR achieve the integrate host to a single plate structure, which ensure the system' s high-integration and reliability.

DVR7024 adopts latest file system, which named MFS, it's the latest file system which is based on the Microsoft FAT32.It is the innovative and dedicated DVR file system. It won' t create the disk defragment in a long run; Logical stream media operation, fast response; Add the key information verify protection, avoid the key area of the HDD damage.

The DVR7024 provides many kinds of interfaces, such as USB2.0 high speed backup , mouse, serial keyboard. And also support alarm email,NTP, multi-playback functions.

1.2 Product Introduction

DVR7024 series CIF resolution standalone DVR:

model / function	DVR7024	DVR7024V
Video format	CIF	CIF
Video input	24 channels	24 channels
Video output	CVBS/VGA	CVBS/VGA
Audio input	8 channels	N/A
Audio output	1 channel	N/A
Voice chat	support	support
HDD port	SATAx2	SATAx2
Alarm input	24 channels	24 channels
Alarm output	2 channels	2 channels
Multi - playback	16 channels	16 channels
Backup interface	USB	USB
USB mouse	support	support

Chapter 2 Technology Guideline and Main Functions

2.1 Technology Guideline

1. Video parameters
   Video input: composite video input PAL(25 fps) NTSC (30 fps) (BNC ,1Vp-p ,75 Ω)
   Video output: 1 channel composite video output(BNC,1Vp -p,75 Ω)PAL(625 line/frame)NTSC (525 line/frame)
2. Audio parameters
   Audio input: BNC interface, input resistance: 10K Ω,input extent: Vp-p=2.0VLINE
   Audio output:BNC interface, input resistance: 10K Ω,input extent: Vp-p=2.0VLINE
   Voice chat:Input (3.5MM interface,input resistance: 10K Ω, input extent: Vp-p=2.0VLINEin/50mVMICin)
3. Video compression: Compression arithmetic H.264,Resolution CIF: PAL(352x288) 25FPS; NTSC(352x240)30FPS
4. Audio Compression: Compression arithmetic G.711A,Audio sampling rate 8K sample/ sec., 16 bit/sample
5. Operation System: Linux
6. HDD interface: 2 SATA interfaces support 48bit LBA working mode
7. Alarm interface
   Alarm input: Alarm input support normal on/off
   Alarm output: 2 channels alarm output (Normal on, relay output)
8. Series interface:RS485 and RX ,support network transparent connection,support serial keyboard
9. Operation mode: multi-functional IR remote control, USB mouse,serial keyboard

10. Backup interface: USB2.0 interface
11. Network port: RJ 45 10M/100M Ethernet Interface
12. Power supply: 220 ± 30% V,50 ± 3% HZ, 110 ± 20% V,60 ± 3% HZ
13. Dimension: 405mm×310mm×55mm (Length * Width * High, mm.)

2.2 Main Functions

High effective Linux OS and embedded processor are adopted in this series DVR, as well as all functions needed for the monitoring system are integrated. Code is solidified in the flash chip to keep the system in high stability and reliability. System can also work in a long time surveillance environment and even in stringent circumstance.

Note: The following features might differ from the below description since we have series products and different hardware and software versions.

u Compression features

1. Support PAL/NTSC video format signal.
2. Video compression algorithm is H.264.
3. Video and audio signals are compressed into H.264 code stream. Audio and video stream are synchronous when playback, and audio recording can be canceled if only video is in need.
4. Audio compression algorithm adopt G.711A, the video and audio signals of each channel is compressed in real time and separately, then become a composite compressed code stream .The video and audio stream are synchronous when playback, you can also setting disable audio. Audio sampling rate: 8K sample/sec., 16 bit/sample.
5. Support dual stream encode.Main code stream used for local storing ,sub code stream used for transmission to internet in narrow bandwidth condition.
6. 6-level record quality is provided for you to select. Users can choose any preferred one.
7. Support TV remove jitter function which improves the preview.

u Recording function

1. Support 4 record modes: manual, schedule, motion and alarm recording.
2. Video motion detection function: multi detection areas can be set up to 5 sensitive levels.
3. Support screen shield. Each channel can max setting 4 mask areas, support part area or full screen mask.
4. Support sensor alarm. One sensor can be linked to one or more cameras. Support alarm recall to PTZ preset point.
5. Monitoring center can record the real time compression code stream, and support synchronizing record video and audio into client PC.
6. Video and audio parameters of each camera can be set up separately.
7. Support OSD, such as channel name, record time , date ,week , etc.
8. Support multiplex operation, can real time recording without impacting other functions(such as playback, fast forward, slow playback, rewind, network monitor, VOD and remote download)when displaying the record files at the same time.
9. Support pre-record feature, and pre-record time is 0- 30 seconds.
10. Support record status inquiry function.

u Playback functions

1. Accurate time orientation.
2. Playback by search category(All,manual,schedule,motion,alarm).
3. Support digital zoom function.
4. Support 16ch SYNC playback which accurate to the second,multi-playback do not support audio output. Support (2X/4X/16X/64)4 level fast forward and reverse playback. Support (1/2, 1/4,1/16,1/64) 4 level slow forward playback and frame forward.

u Real time display features

1.Support VGA,BNC output;
2.Support digital zoom function.

3. Support part area or full screen video mask.
4. Support video parameter adjustment (brightness, contrast, hue, saturation).
5. Support channel auto sequence cruise.
6. Support intercommunication(inter-talk).

- Storing and backup functions

1. There are several USB2.0 backup interfaces on the DVR back and front panels.
2. Backup record files through client manager software.
3. Backup record files through windows IE.
4. Powerful HDD management function, support formating the HDD when the DVR is in normal state, support damage sector masking function. It can reduce the DVR temperature and power consumption.
5. Standard FAT32 file system format. The recording file can be recognized on the PC and played by our player.

- Alarm inspection functions

1. Local alarm: video lost alarm, motion detection alarm, sensor alarm, video abnormal alarm.
2. Remote alarm: Video lost alarm, motion detection alarm and sensor alarm can be sent to client manager via network.
3. Video lost alarm, motion detection alarm and sensor alarm can be transmitted to the external equipment such as mobile phone or fixed phone within three seconds.
4. Network alarm relation (Alarm signal upload),It is alarmed by the PC integrated loudspeaker.
5. Video motion detection function, user can set multi-area on each channel.
6. Support alarm email linkage upload function , can auto upload the information (channel No., alarm type, snapshot) to the target email.

- Network functions

1. Support TCP/IP protocol (support ARP, RARP, IP, TCP,UDP, PPPOE, DHCP, DDNS). Support PPPOE ,auto reconnect and DDNS function.
2. Perfect network-end control order (Client manager and IE browse can be used to control the DVR, such as setting the parameters,remote upgrade, etc).
3. Support WebServer function,DDNS,remote view ,VOD and PTZ control, etc.
4. User can control the PTZ , lens and wiper in both host and client side,user can add and modify the custom protocol by himself. (This function is realized by client software)We add the PTZ auto sequence curise function.
5. Firmware upgrade through network makes after sale service much easier.
6. Support USB disk upgrade.

- Security guarantee

1. High quality 32 bits embedded microprocessor and embedded RTOS, which ensure the system's high-affectivity, reliability and stability.
2. Perfect log search function (sensor record log, motion detection record log, remote login log, record parameter modification log, update log, playback log, system start-up log, backup log).
3. System lock, keystroke lock, password verification, multi-level user authorization(using the username and password as encryption key of code stream when transmission.).
4. Video lost alarm, motion detection alarm and sensor alarm can be transmitted to the external equipment such as mobile phone or fixed phone.
5. Network alarm linkage (alarm signal can be uploaded).
6. Watchdog function. When the system is abnormal, watchdog automatically detects and reboots the system.

- Exploitation Support

Client manager software and client management SDK.

Chapter 3 Equipment Installation and Illustration

3.1 Installation Environment and Cautions

Installation environment:

- Normal working temperature is -10℃-55℃. Storage temperature is -10℃-70℃
- The equipment must keep horizontal either in installation or on using
- Avoid installing in high temperature or humidity conditions
- Heat release fans are placed for cool down, so you should put the device on ventilated place
- The back of Net DVR should be placed 6cm away from the other device or wall while installing
- Moving the Net DVR between two places with high difference in temperature will shorten the using life
- Please install the lightning conductor when the machine is used in frequent thunder areas

Cautions:

- Don’t touch the power switch or the Net DVR by wet hands.
- Make sure the machine and its case are grounded (There is an earth interface on the back panel of the machine).
- Keep the power supplier stable to avoid abnormal power cutoff.
- Avoid dropping liquid or metal into machine that may cause short circuit or fire.
- Don’t record or playback until at least one HDD is installed.
- Short circuit would happen when moist dust is on the board , so user has to termly brush the board and other accessories to make the machine work in good condition.
- Video/audio/RS485 devices cann’t be plug or draw when the power is on, or else the equipment will be easily damaged.
- Use the power on/off button on the front panel instead of direct shut off the power directly when turn off the Net DVR, so that the hard disk won’t be damaged.
- After installation, machine can automatically detect hard disk. If an unformatted hard disk is detected, system will give off information whether to format the disk. For a used dick, please delete the used partition in PC, or system meight have errors. The system only supports FAT32 file format.
- When hot swap the SATA hard disk, please plug in/out the data cable and power cable together.
- In order to keep the integrality of the records, damaged disks should be exchanged promptly. (There is information about the error of the disk in the logbook.)

3.1.1Attentions on Installing Hard Disk

1. Recommend high speed hard disk above 7200 rpm.
2. The capacity of the single hard disk is above 32GB at least, each HDD can max support 2000 GB.
3. The selection and calculation for capacity:

Total capacity= channels number * record time needed (hours) *capacity per hour (M/hour)

For example: If you choose the recording bit rate type for CBR 512KB (refer to 4.3 for bit rate types), the HDD Capacity /hour/channel=bit rate (Mbps) * 3600s=512Kbps * 3600s=1800MBb=225MB (1MB=8Mb). Due to the various factors, the calculated result is for reference only. Some slight differences or small errors might exist in the calculation.

Audio recording capacity is about 15MB per camera per hour. In order to save HDD space, we suggest closing the audio except users mandatory require audio recording. If you choose CBR recording, the recording data will not differ from the bit rate option.

Notes: When HDD is full, the default set will let system overwrite the earliest recorded files,and the free space will show 0M.

4. The attachments, such as data cable, power line, and hard disk are prepared well.

Notes: This series DVR don't support the hot swap, please install the HDD and connect the data line first then plug the electricity in.

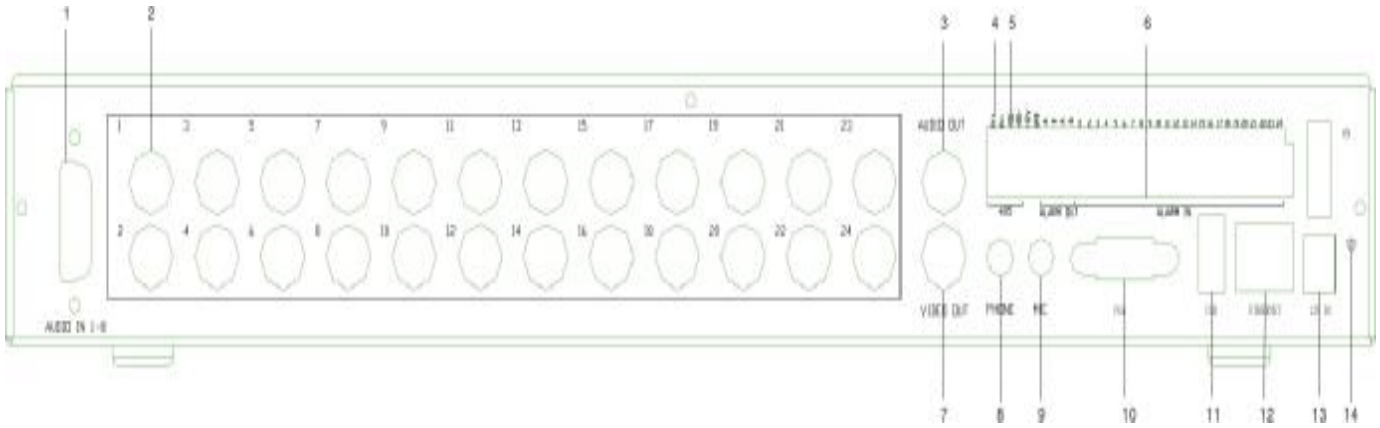
3.2 Package Checking

After opening the box, please check the host computer whether it is distorted or mangled. If there have, please do not use it and contact your suppliers in time. Meanwhile, please check all accessories of the host computer; do read the attached information carefully.(Notes: Accessories as for the packing list)

3.3 The Back Panel Instructions of DVR

3.3.1 The Back Panel Chart

We take the DVR7024 as a sample:



NO.	Interface	Operation Manual
1	AUDIO IN	Connect audio input, BNC
2	VIDEO IN	Connect video input, BNC
3	AUDIO OUT	Connect audio output, local audio signal output
4	RX	Connect series keyboard
5	RS-485	Connect RS-485
6	Alarm input	Connect alarm input
	Alarm output	Connect alarm output
7	VIDEO OUT	Connect monitor, local video signal and menu output
8	Phone	Intercommunication output interface
9	MIC	Connect MIC for voice talking
10	VGA	Connect VGA
11	USB	Connect USB, Backup files
12	ETHERNET	Connect HUB
13	Power	220V/110V
14	Ground	Ground line

3.3.2 Video/Audio Connection

Video output: 1 VGA output, 1 CVBS output.

Audio input: User can use our special cable to capture audio.

Audio output cautions: If you want to connect sound box for audio output, please use 3.5mm to two lotus flower cable for change.

3.3.3 USB Backup Interface

This port is just used to backup. The capacity for the U disk should be larger than 512M, and the format is FAT32. If you want to format the U disk, please enter the “disk management” to check it.(Specific operation please refer to “Disk Management”)The U disk backup operation please refer to “Backup Operation”.

3.3.4 Network Interface

There is a RJ45 10M/100M adaptive Ethernet interface which is used to connect the PC and the DVR. The indicator lights ACT and LINK are used to indicate current network status.

LINK (Network speed indicator) on —100M off —10M

ACT (Send/Receive data indicator) Blink — Sending/Receiving data

Notes: When you directly connect the computer's network card with the host DVR, please use the cross line; when connect with the computer through router, please use the parallel line.

3.3.5 Alarm Input/Output Connection

Alarm input: Input resistance : 22K Ω, window contrast voltage (3.0 V-4.18 V).

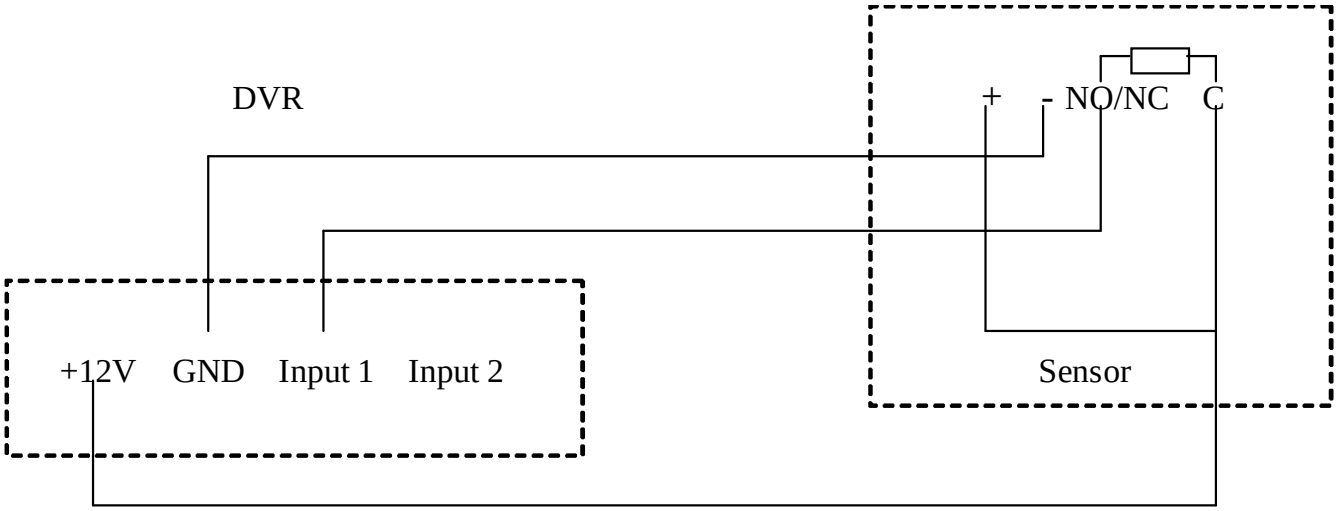
(Note:There will be alarm when the voltage between 0V-3V or 4.18V-12V, and no alarm when the voltage between 3V-4.18V)

Alarm output: relay (240VAC/7A,125VAC/10A,28VDC/10A), normal (relay open), alarm output (relay close).

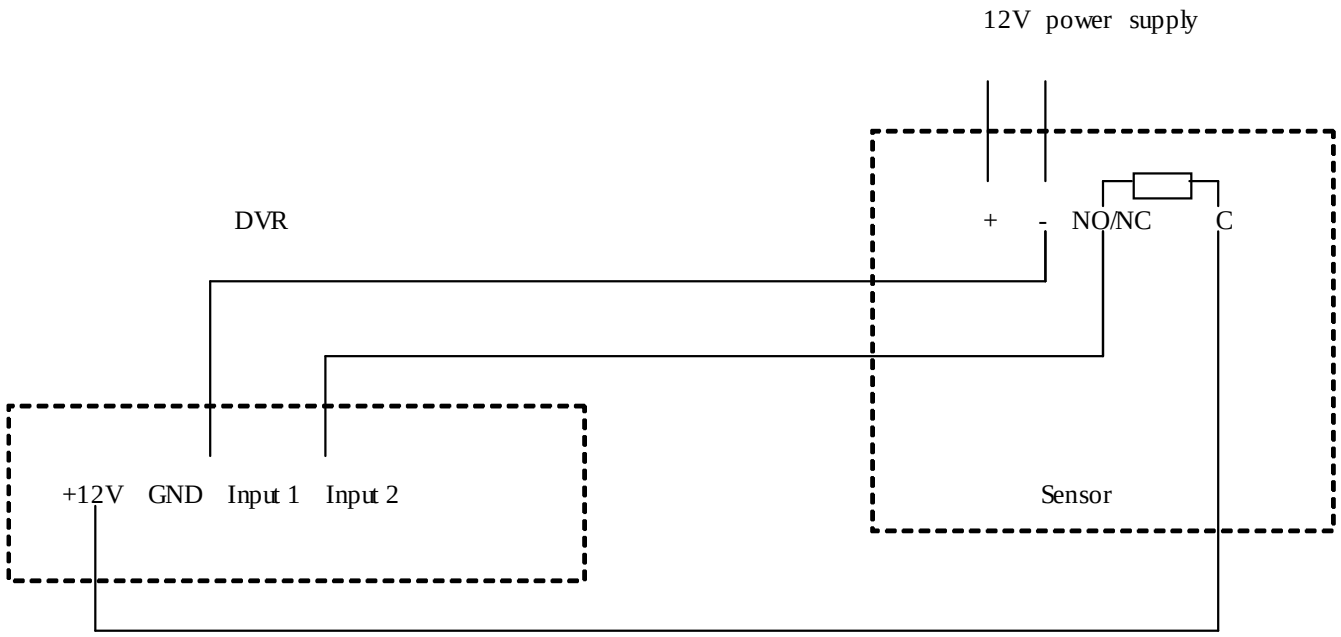
Sensor power: The machine provides a +12V DC power output port.

Alarm sensor connection:

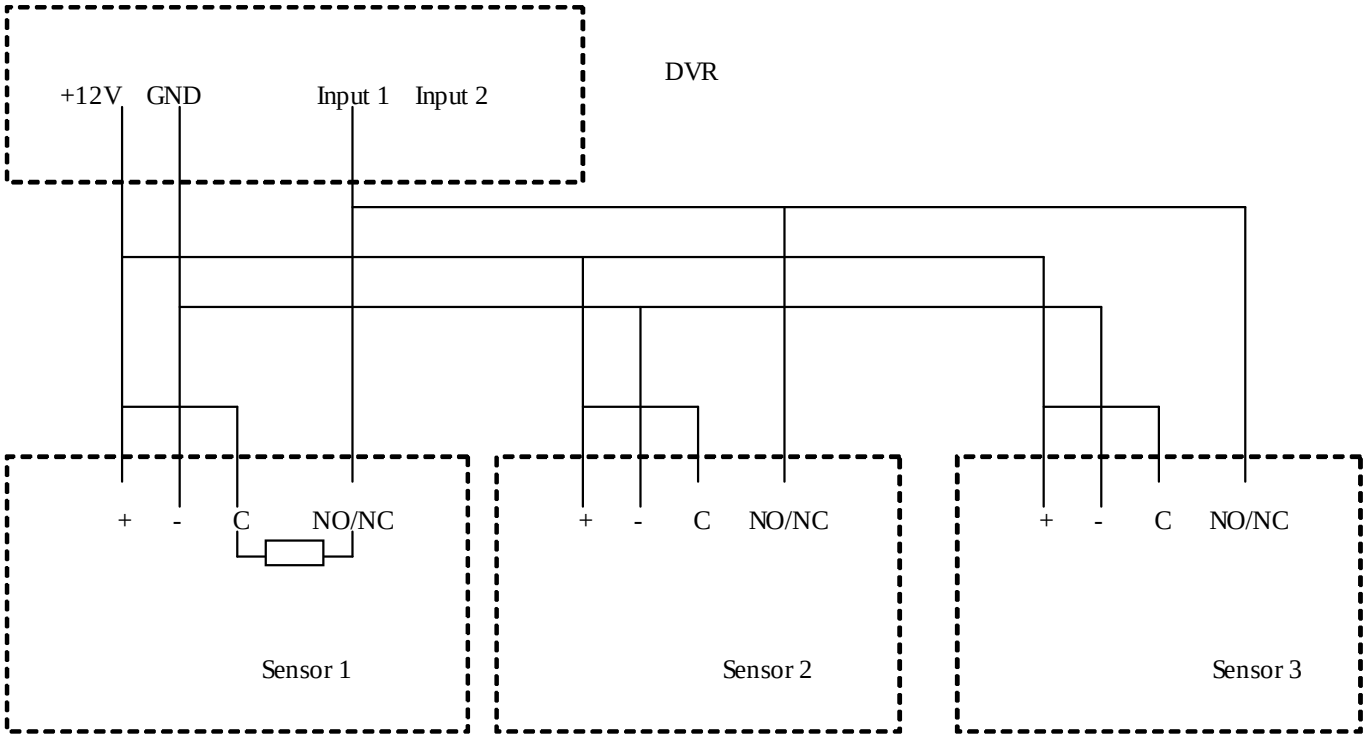
Alarm input: The physical connections of the normal on/off mode are the same. And user can select normal on/off mode in the DVR. Typical alarm connection: the sensor power supply is provided by DVR. The fig is as follows:



If the distance between the probe and DVR is too far, the probe requires a separate power supply:

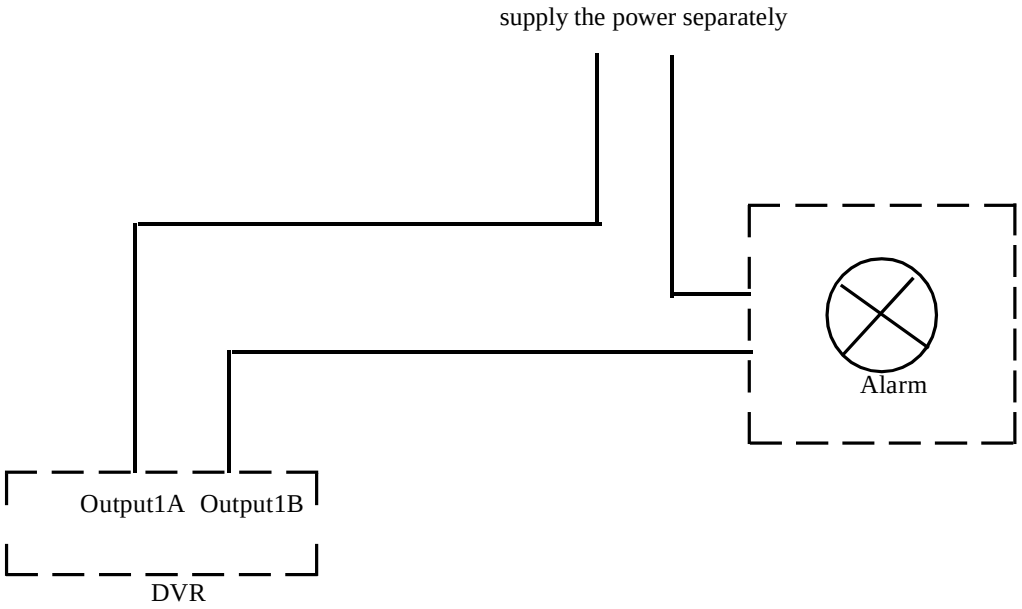


If we parallel connected the sensor, the DVR can not recognize the triggered sensor. User need to have a resistance.



Alarm output connection:

The alarm output side is normal-off and do not have voltage output. The other alarm equipments need the individual power supply.



Normally, Alarm’s power usually is much bigger, preferably supply power separately, and do not use the DVR's power to supply.

Each series alarm output critical parameters are as follows: 120VAC/1A,24VDC/1A.Exceeding these parameters will damage the motherboard.

3.3.6 RS-485 Connection

Attentions for PTZ decoder connection:

1. Confirm that the PTZ decoder and Net DVR are one point ground connected, or common mode voltage might exist to cause the PTZ invalid.
2. Prevent high voltage inroad, carefully dispose connection cables secure thunder proof.

RS485: For PTZ control, series keyboard and transparency port connection.

RX:For common series port, keyboard and transparency port connection.

3.3.7 Keyboard Controlling

It you want to unify control more than one DVR, you have to use the series keyboard (we suggest user using one series keyboard to control more than one DVR in the same model). The function of the keyboard is the same with the front panel of DVR. (Note: the keyboard must be added with the protocol from our company and go through the test of our company). Take the RS485 interface series keyboard for example:

1. In the DVR menu: “series set”, to setup the protocol,baud rate,address code.
2. Connect with the power supplier.
3. Connect between RS485+ of the keyboard and RS485+ of the DVR, also RS485- of the keyboard and RS485- of the DVR.
4. Shift keyboard mode to DVR mode, input corresponding address code, then you can control DVRs.

The detail set of keyboard can refer to the user manual of keyboard.

3.3.8 Intercommunication Port

There is a voice input port on the back panel, which is used to connect the extral power microphone.

3.4 Front Panel

3.4.1 Front Panel

3.5 Mouse Operation

Besides remote controller, mouse also can be used to control the DVR. System also supports mouse hot plug. Right click the mouse:

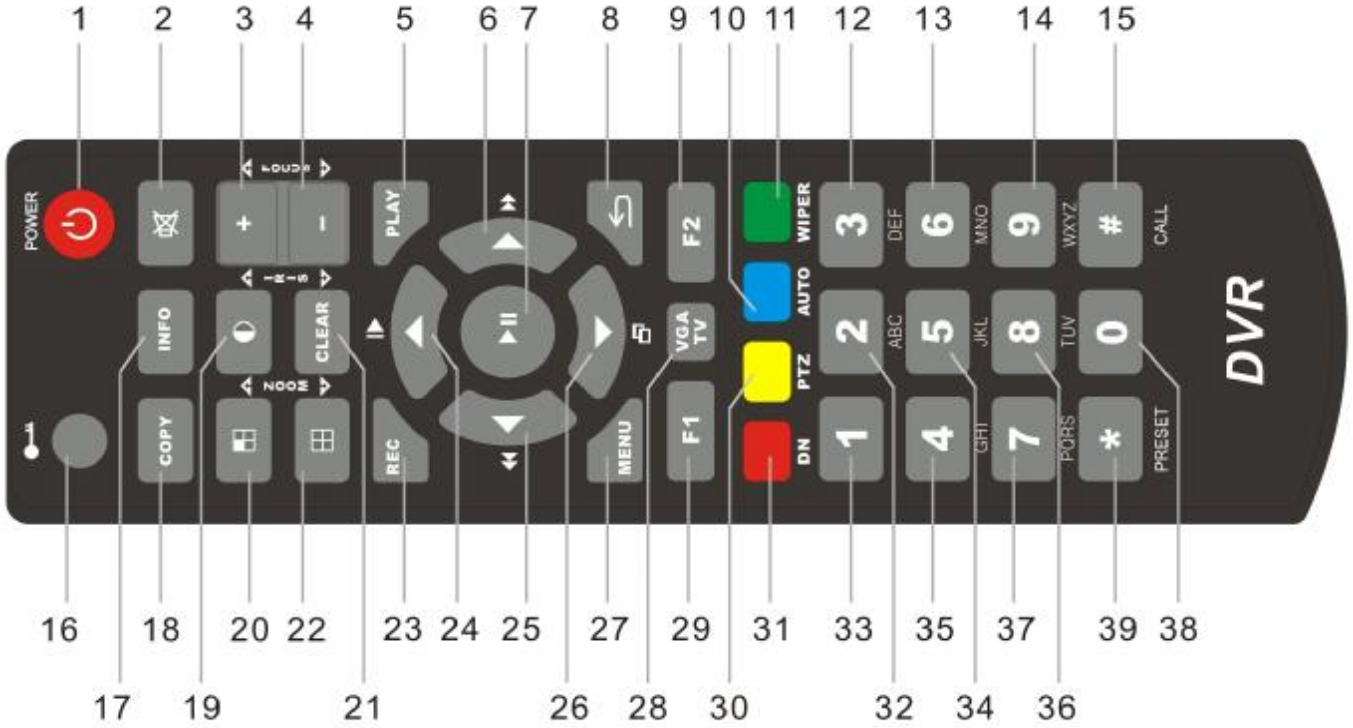
1. If the system is in login status, right click the mouse,then shortcut menu will display.
2. If DVR is locked and in real time monitor status, the login menu will pop out when right click the mouse. The system default setting user name is “admin”, and password is 888888(double click left button to open the flexible keyboard).
3. Once entering the menu, right click the mouse, it will let you exit the current interface and back to the former menu or exit the main menu.
4. For date input, left click the mouse you can see the software keyboard. After input date, right click the mouse you can exit the software keyboard.

Left click the mouse:

1. Left click the mouse, and you will enter the functional menu.
2. In the main menu, left click and choose the item to enter or set up the parameters.
3. When selecting the motion detection setup, left click the mouse to change the status of the motion detection square unit.
4. To set up the video images parameters, you can change the brightness, contrast, saturation, hue of the image by left click the mouse on a certain point you prefer.
5. For data input, left click the mouse and select the software keyboard, it is the same as press the corresponding key on the PS keyboard. (click the “caps” key, it will turn into blue on the left of the space key , which indicates the Caps Lock state)

Double click left mouse: the division can be switched by double click. Double click left mouse in the input box to enable the software keyboard , right click the mouse to exit software keyboard. The interface is as follows:

3.6 IR Remote Control



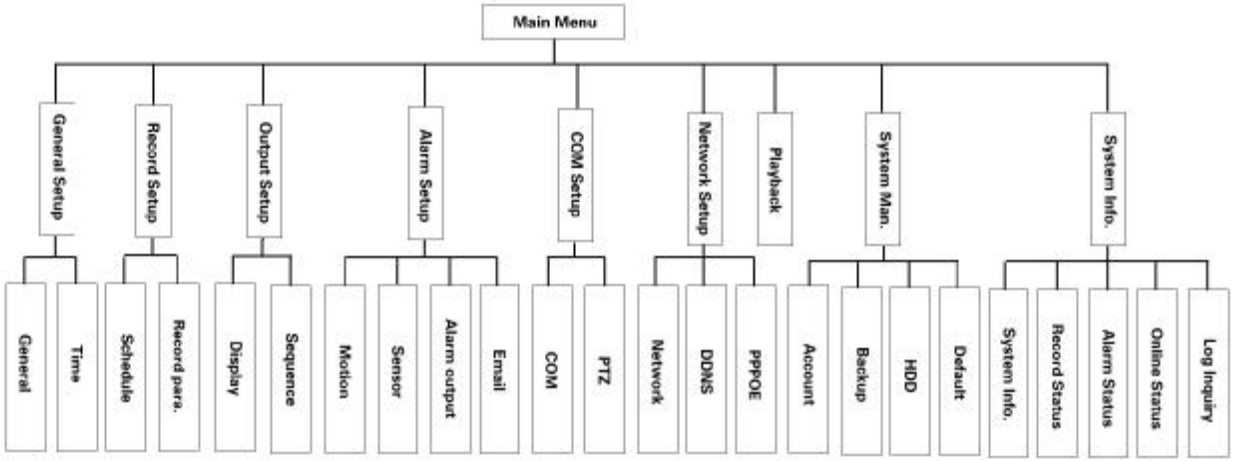
3.6.1 Remote Controller Layout

Keystroke instruction		
1. Power	14. 9WXYZ	27. Menu
2. Mute	15. CALL	28. VGA/TV
3. +, Focus+	16. Log in/Log off	29. F1
4. -, Focus-	17. Information	30. PTZ
5. Playback	18. Backup	31. Server Index
6. Fast Forward	19. Image/Iris+	32. 2ABC
7. OK, Play/Pause	20. Shift/Zoom+	33. 1
8. Return	21. Clear/Iris-	34. 5JKL
9. F2	22. Format/Zoom-	35. 4GHI
10. Auto	23. Record	36. 8TUV
11. Wiper	24. Up, Slow Motion	37. 7PQRS
12. 3DEF	25. Left, Backward	38. 0
13. 6MNO	26. Down, Frame Forward	39. *, Preset

(Note: F1 and F2 are preserved functional keys.)

3.7 Menu Operation Description

3.7.1 Menu Structure Chart



3.7.2 Menu Option Schedule

Menu	Instruction	
General setup	General setup	1.Display contrast:from 1:1 to 1:5,the color of background is changed from light to dark. 2.Video format(PAL,NTSC). 3.Record overwrite mode(auto,alarm indicate); 4.Auto lock setup:1-10 minutes. 5.Resolution:1024X768,1280X1024,1440X900.
	Time setup	Set system date,time.
Record setup	Schedule record	Set continuous record time table.
	Record parameters	1.Record type: manual, schedule, motion detection and alarm record. 2.Definition:CIF; 3.Bitrate type:CBR,VBR; 4.Bit rate size:100K,128K,256K,512K,1M; 5.Image quality:6 level(highest, higher, high, middle, low, lowest) 6.Video frame rate:PAL 2-25F/S optional;NTSC 2-30 F/S optional. 7.Audio. 8.Network HD, bitrate, quality, audio(corresponding to sub stream).

Output setup	Display Setup	1.Setting channel name. 2.Video mask area. 3.Channel duplication. 4.Date format setup:year - month - day,month - day - year. 5.OSD setup:channel name,time,week,temperature. 6.Video parameters setup:brightness,transparence,contrast,hue. 7.Video input adjustment.
	Sequence Setup	Sequence setup:Sequence cruise channels,polling interval,sequence cruise type.

Alarm setup	Motion Detection	1.Alarm schedule. 2.Motion detect sensitivity:1-5 level(5 is the highest). 3.Set motion detection area. 4.Video lost alarm. 5.Channel duplication.
	Sensor Detection	1.Sensor ID. 2.Alarm schedule. 3.Relate the recording channel. 4.Recall PTZ preset position. 5.Channel duplication.
	Alarm Output	1.Full screen when alarm output. 2.Buzzer alarm output. 3.Alarm retain time(0- 300 s). 4.Alarm type:normal on/off. 5.Alarm recording time. 6.Alarm output duplication.
	Email Setup	Support email alarm upload.

Network Setup	IP Setup	Setting server name,DNS server,IP address,network transport ports,LAN multicast
	PPPOE	Setting dial-up username and password, for PPPOE dial-up
	DDNS	Choose DDNS server
COM Setup	COM Setup	Keyboard address,series type,COM device,baudrate,date bit,stop bit,parity bit
	PTZ Setup	PTZ protocol,speed,address code
System Management	User Management	1.Add and delete user account. 2.Change local/remote user account and authority.Support remote user authorities: remote preview,parameter setup,remote playback,remote backup,log Inquiry,voice talk,remote upgrade,user binding IP and MAC address.
	Backup Setup	Support backup, require, playback the record date.
	Hard Disk Management	Display the status, information of each HDD,HDD format.
	Restore to Default	Restore to default setting,such as common setting.record setting,input setting,alarm setting,network setting,serial setting(User can select any options to reset.)

Syetem Information	Syetem Information	Display software version, main board serial No.,SCM version, IP address, MAC address, file system, video standard and language
	Recording Status	Display the recording status of each channel
	Alarm Status	Display the alarm status of each channel(sensor alarm,motion alarm,lost alarm)
	Online Status	Display the username, IP address, connected channel
	Log Information	Require system log, display number of log
Menu of Right Click the Mouse	Main Menu	Enter the main menu rapidly
	Image Switch	Switch the channel rapidly
	Video Zoom	Enter the real time digital zoom menu rapidly
	PTZ	Enter the PTZ menu rapidly
	Alarm Clear	Alarm Clear
	Video Parameters	Video parameter adjustment(brightness, contrast, saturation, Hue)
	Logout	logout
	Shutdown	Shutdown （user should press the power in front panel next time in this case
	Mute	Mute
	Restart	Restart the local DVR
	USB Upgrade	Doing the USB upgrade rapidly

Chapter 4 Device Operation

4.1 Power On/off and Login /Lock

Power on: After connected up the power cable, the front panel of the DVR will start and enter the standby state. Click the “power” button on the remote controller for 3 seconds to enter the running state.

Power off: When the system is under the running state, click “power” button on the remote controller to popup the shut down interface. And clicked the “confirm” button, the system will enter the standby state.

Login/Lock:To avoid unauthorized user using the machine or influencing the system’s normal working, we specially set the key lock and unlock function for the machine.

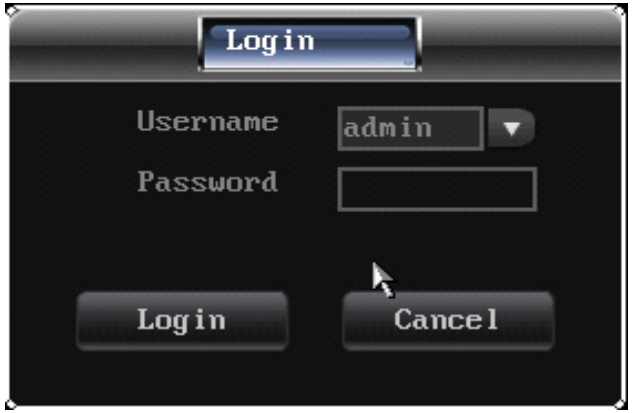
4.1.1 Keystroke Unlock/Lock

When multi DVRs are put to work together, using the remote controller may influence the machines which users do not intend to control. So we set system key lock function correspond to remote control. Under the system management of DVR main menu, please enter series configuration and setup device number, then enable key lock and save it. Now to press the DN button on the remote controller, the DVR is locked.To unlock the DVR, please press the DN button and input the corresponding DVR device number(Device number range is 0-99,default set is 1).
Note: If the remote control does not respond, please check if this function is enabled.

4.1.2 System Login

When the system is in the status of locking “ ”, press the “Login/Lock” on the remote controller or right click the mouse, the figure of login will appear as follows:

Input user name and password on the login port(distribute in authority in advance), after you input correct user name and password and press “ENTER”, the sign “ ” on the lower left corner will switch to “ User” automatically, and show the current user name. Then you can carry on the operations in the authority to the system at the moment.



1.Default user:admin,default password:888888.

2.When you input the incorrect password 3 times continuously,the system will alarm and get into the status of locking automatically. In that case ,you need to click the “clear” on the remote controller to retype the password.

3.To input name and password, you can left click mouse .It will pop out software keyboard. Right click mouse to exit.

Note: For the sake of safety, please change the default password immediately.

4.1.3 System Lock

When the system is in login status, according to the automatic locking time setting in the “general setting”(System default automatic lock time is 3 minutes),if there is no operation in the automatic locking time,the system will automatically logout. You can also press “login/lock” on the remote controller or right click mouse to logout.

4.1.4 Main Menu

After user log in successfully, and click the “MENU” on the remote controller, the system will switch to main menu.

4.2 General Setup

4.2.1 General Setup

- Overwrite

We suggest that user select auto overwrite mode, when disk is full, the DVR will auto overwrite the earliest recording file. The alarm indicate method: When HDD is full, GUI information indicates whether overwrite the earliest recording files, and stop the recording.

- Auto locking

When you enable auto locking, system will enter the status of locking in fixed time(1~10 min). For example, if you set the locking time to 3 minutes, during this period if there is no operation, the system will auto lock.

- Video format

User can choose the systerm video format as PAL or NTSC.

- Resolution

Support 1024*768,1280*1024,1440*900 adjustable.

- Display contrast

When you enable this option, you can setup the menu display contrast. There are 5 levels and the default value is 3:1. When “1” is chosen, the background color is the lightest.

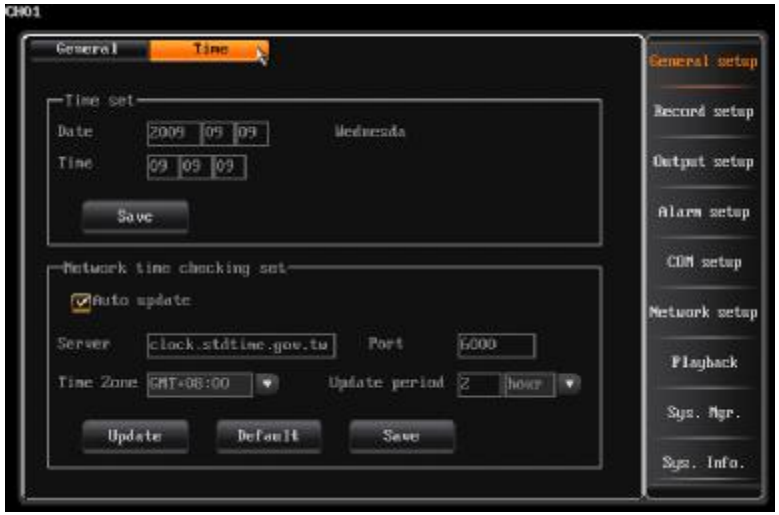
4.2.2 Time Setup

- Time setup

After login, user can through “general setup”-> “time setup” to enter the time setup interface. The fig is as follows:
This function is used to set or modify current system time, the system adopted the perpetual calendar, the day will change as the date’s change.
(Note: please check the system time when firstly use. Because system time is in close relation with video record, try not to adjust system time on general occasion)

- Network time checking

NTP:NTP(Network Time Protocol) means regulate the time form remote server via network.
The default sever is hk.pool.ntp.org, port: 123,time zone is GMT+08:00.
Make sure select “NTP” before use this function.
1.The system support 26 time zone for setting, user can set according to current zone.
2.We do not suggest user change the Time server on general occasion. If connect failed, you can manually select the other server.
3.Port and time zone is optional.
4.The system will automatically regulate time by update interval which selected by user.
5.DVR need to access internet to realize NTP.



4.3 Record Setup

4.3.1 Record Parameter

Before using the record function, it is important to setting the record parameter. It is related to video playback and hard disk capacity, etc. After login, select “record setup”-> “record parameter”,enter the interface as follows:

- Channel No.:Customer can select the channel by pressing “+”, “-” on remote controller or by the mouse.
- Record mode:The record parameters will be active in the selected record mode.
- Resolution:CIF(PAL:352 * 288).
- Encoding stream type: VBR and CBR.

VBR: It means when compress the video signal, system can adjust the compression bite rate dynamically according to the changing of the image source.Thus, when recording, system maximally saves HDD capacity, and for net transmission, the bandwidth is also maximally utilized.

CBR: The compression bitrate keeps constant even when image source changes. The characteristic for CBR is in limited bitrate to have good compression images, as well as easy to estimate the HDD occupation and network bandwidth.

- Encoding stream: When compressing the intense moving image, we should make a upper limit of the compression bitrate, there are (unit: bps): 100K, 128K, 256K, 512K, 1M(Note: the more intense of the movement, the higher bite rate you should set).
- Video quality:There are 6 levels of video quality(highest, higher, high, middle, low, lowest).
- Audio:The on/off switch for audio(Tick off indicates open, otherwise means off).
- Dual streams

1.The parameters of local stream are for main stream. The local stream parameter settings affect the recording main stream and network main stream.
2.The parameters of net stream are for sub stream. The net stream parameter setting affect network sub stream.

- Pre-record time: The 4 record modes support Pre-record function, default pre-record time is 10s, range is 0-30s. Due to the variable bitrate, the actual pre-record time may have some difference with what your set.
- Delay record time :The record duration time when the motion/sensor alarm appears, default duration time is 30s,range is 0-180s.

4.3.2 Manual Record

After login, click the “Manual” on the lower left corner,or press the “Record” button on the remote controller to enter the manual record interface, the figure is as follows:

When the channel button turns yellow ,the manual record is started, otherwise the button is grey.Once the manual recording is started, it will not stop recording until manual closing.If the power is off abnormally, the recording will continue after the power is on.

4.3.3 Schedule Record

To enter the schedule recording interface,follow the steps below:

1.Select the corresponding channel No..

2.Select the recording date(everyday or someday),and set the record deployment period.

3.Set the alarm deployment period ,system supports setting multi-periods. Time period should be selected in chronological order. Tick off the date and then enable the time period. By dragging the left mouse to set the deployment period .

(Note: double click left mouse can cancel one selected time period.)

4.Click “save” to activate the settings, you can also duplicate the settings to other channels.

4.4 Output Setup

4.4.1 Display Setup

After login,click “main menu”-> “output setup”-> “display setup”, enter the interface as follows:

It’s used for adjusting the channel parameters, include channel name, video mask, video adjustment, channel name position and OSD setting.

1.Channel Name

- The channel name can be established at most 16 Chinese characters or 32 English letter and numeral.
- Modify by mouse:Double click left button to pop out the software keyboard; In the pinyin input states, click “En” to switch to English input method.
- Modify by remote controller:Use "#" to switch the input method.
- Channel name fixed fold on the top left corner of the corresponding channel, you can enter the channel name position interface, and select the channel name to adjust its position by dragging the mouse .
- When copy the channel settings, not include copying the channel name.

2.Mask Area Setting

In some surveillance occasion, user need to mask the sensitivity or private area in the surveillance area of the location, such as ATM’s password area.

Each channel can max support 4 mask areas. The way of set the mask area is as follows:

- Tick off the video mask to enable this function, click “mask area”to enter the video mask status.
- Set by mouse:Left click a pane as the start position of the mask area, then click another pane as the end position, and the area will shown.

❙ Set by remote controller: Press direction key to move the cursor, press “OK” to confirm the start position, then move the cursor to select the area you want to mask, press “OK” again to confirm the end position. Press “clear” to cancel the area.

❙ Back to the channel setting interface, click save to activate the setting.

❙ The selected mask area will take effect both in the real-time and the record.

3.Video adjustment

❙ After login,user can “display setup”-> “Video Para” or right click mouse and press “image” button on remote controller instead, then select the “Video Para” to enter the interface.

❙ Default video parameter: brightness(128), contrast(128), saturation(128), hue(128).

❙ Channel No.: used to switch channels,user can also setup all channels directly.

Adjustment Method:

(1) Select the parameters you want to change, then press “+” “-” button on the remote controller.

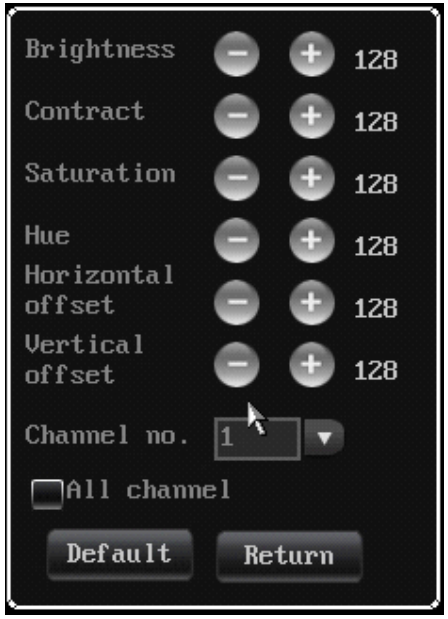
(2) Click the left mouse on the “+” “-” to change the value , the “+” “-” on the interface can indicate the increase or decrease of the value.

(3) Video input adjustment

Video input adjustment: Adjust black edges on each channel. The input video is normally with black edges, actually DVR reduced black edges by moving the capturing window position to capture more effective information.

Horizontal offset: Set the capturing window potion.

Vertical offset: fixed.



4.4.2 Preview Digital Zoom

Setup method:After login, right click the channel to enlarge to full screen,then click mouse wheel to start setting, left click to select start point, then move to the end point and click again. Drag any border to enlarge the selected area. Double left click the mouse to cancel the selection, right click

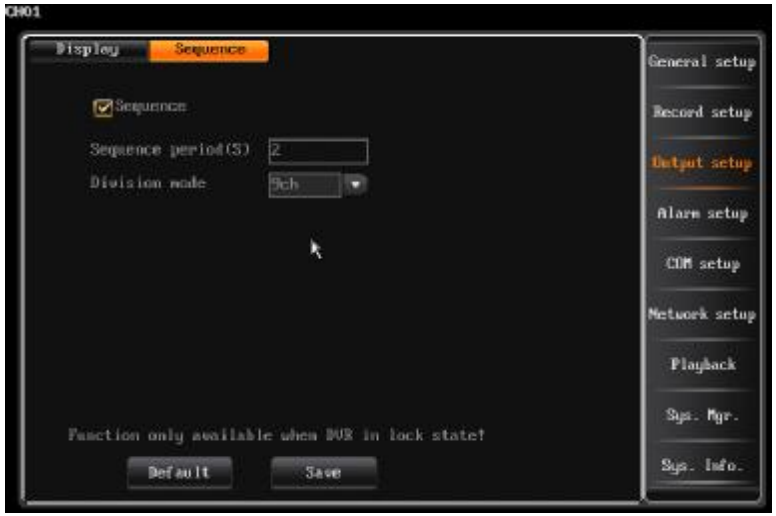
the mouse to exit the digital zoom.

4.4.3 Sequence Cruise

This function is used to polling different channels, user can select sequence channel No.,sequence division,sequence interval time. The interface is as follows:

- Sequence format:1ch,4ch,6ch,9ch,12ch,16ch,25ch divisions.
- Sequence channel number: user can set the sequence channel number, the sequence channel number must be more than the selected division.
- Sequence interval time: range is 3-60s.

Note: The sequence function is only enable in system locking status.



4.5 Alarm Setup

4.5.1 Motion Detection

1.After login, click “main menu”-> “alarm setup”,the interface is as follows:

By analyzing the real-time video, the system could confirm whether the video scene has changed or not. If you need record when the video scene is changed, then you can through “Motion Detection” to perform it, user could set the motion detection time, schedule time, sensitivity, detection area, alarm output channel and whether enable audio alarm.The specific operation steps of motion detection setup is as follows:

(1) After login, through “main menu”-> “record setup”-> “record parameter” to set the corresponding channel pre-record time and delay record time.

(2) Choose the motion record channel.

(3) Set the schedule time(the specific setting please refer to schedule record).

(4) Select the sensitivity:The sensitivity of the motion detection is adjustable and the sensitivity goes up in order from 1 to 5.When the motion detection of the current channel happens, the system will alarm and record. If the sensitivity is low, such as “1”,when the video scene make a big change, the system will motion detection alarm; If the sensitivity is high, such as “5”,when the video scene make little change, the system will motion detection alarm.

(5) Setting detection area:

Before you start the motion detect, you should define which areas are detection areas, then when image is changed in these areas, it will detect and make alarm. System default yellow area is detection area.

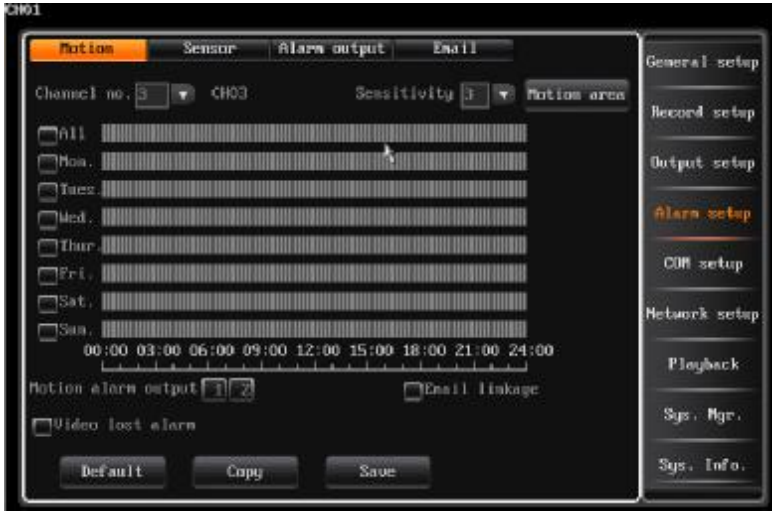
Setting detection area by remote controller.Press direction button, move the cursor to set the start point,then move cursor to the area you want to be the end point. Press the confirm button to finish the operation. Left click the mouse to change the status of the motion detection square unit. Then press “return” button to the record setup status ,click “save” to activate the setup.

Setting detection area by mouse: Left click a pane as the start position of the detection area, then click another pane as the end position, and the area will shown. Double left click mouse to cancel your choice. Click “return” to record setup interface, click “save” to save the setup.

(6) Alarm output setup: The button will turn yellow when enable the alarm output function ,otherwise the button is grey.

2.Video Lost Alarm

The DVR default enable alarm output when video lost. We provide three ways to output alarm: audio, buzzer, full screen.You can press “information” button to enter alarm information status rapidly.



4.5.2 Sensor Alarm Setup

The steps of sensor alarm setup is as follows:

(1) After login, choose “main menu”-> “Record setup”-> “record parameter” to enter the setting interface of alarm record, set the corresponding channel, pre-record time and delay record time.

(2) Choose “main menu”-> “alarm setup”-> “sensor”, enter the interface of alarm record, the interface is as follows:

(3) Choose the sensor type.

(4) Choose the sensor number.

(5) Set the deployment period (the specific setting please refer to schedule record),left click mouse to set start point then drag mouse to the end point.

(6) The linkage record channel can record when alarming, we recommend that each channel correspond with each sensor, so that we can find the alarm record files by channel, the yellow channel button means have linkage alarm record, gray means not linkage to any alarm record.

(7) Alarm output setup: you can select the alarm output button. (Yellow indicates enable, and grey indicates disable).

The system support recall to preset point function when alarm appear(the precondition is the camera support preset function),the setting procedure is as follows:

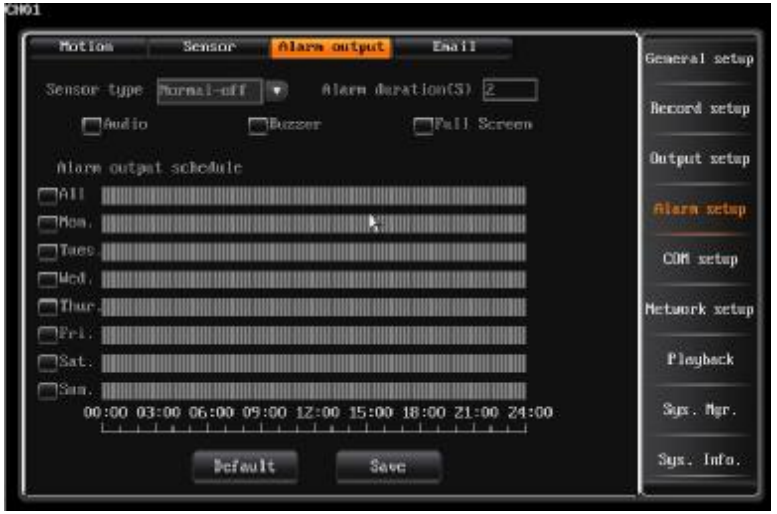
1.Click “PTZ preset point” to enter the PTZ preset interface, then you can set the preset point.(Note: the range of the PTZ preset is 1-255,255 means close, when copying the channel parameters, these settings will not copied to other channels). After finishing this operation, you should right click mouse to enter the up menu and click “save” to activate the setting.
2.In “COM Setup” interface you can set COM type, COM device, baudrate. In the PTZ setup interface you can set the protocol, address code.
3.Switch to the channel which you want to set preset points, press the “PTZ” button on remote controller to enter the PTZ control mode, then press “PRESET”, input the preset number mentioned in step 1,or you can right click the mouse to enter the PTZ status, select “PTZ”, then you can see the interface, input the preset number mentioned in step 1 to the box, click “preset” to save setting. Right click the mouse again to quit.

4.5.3 Alarm Output

After login,through “Alarm setup”-> “Alarm output” continuous operations to enter Alarm output interface.The interface is as follows:

The “Alarm output” interface have the following options: Sensor type,Alarm to full-screen,Alarm to Buzzer,Audio Alarm,Alarm output Time, Alarm output deployment time.

- Sensor type: normal on/off.
- Alarm to full-screen: when the system is in multi-picture and the alarm is triggered, the alarm channel will auto full-screen.
- Alarm to buzzer: when the alarm is triggered,the system will start buzzing.
- Audio alarm: when the alarm is triggered, the alarm sound will output to the audio output.
- Alarm output time: inspection(2~300s),the system default is 30s.
- Alarm deployment time: the system default alarm output schedule time is 00:00-23:59 of everyday.



4.5.4 Email Setup

After login, click “main menu”-> “alarm setup”-> “email setup” ,the interface is as follows:

Email setup steps:

(1) Enable the Email upload, select the related email. When alarm(video lost, motion detect, sensor detect) triggered, the DVR will send email to user mail account automatically.

(2) Set the SMTP server, default is smtp.126.com.

(3) Input the username and password of the mail account.

(4) Input the mail address which applied from SMTP server in the “sender email”.

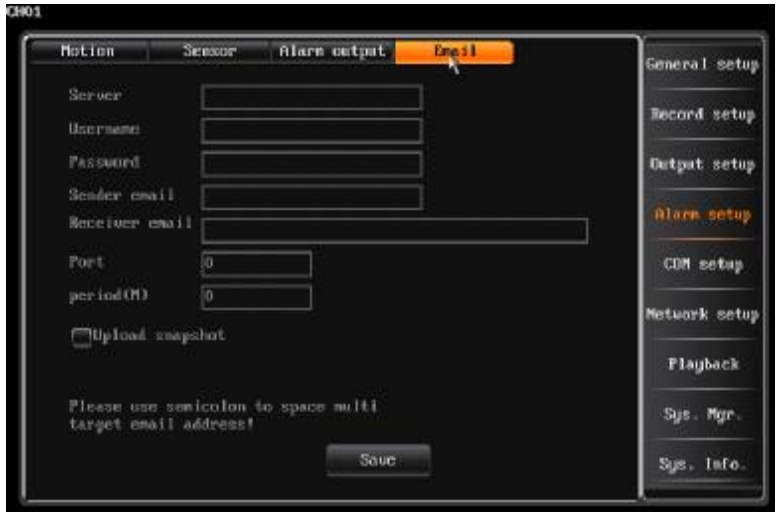
(5) Input the receiver mail box which can be multiple and separated by “;”, the maximum length of the letter you input is 256 bit.

(6) Default port is 25,nomally do not need to change.

(7) Set the e-mail upload interval time, that is the time interval for upload alarm information to the target email, no matter how many times alarm triggered, it just upload once during every interval time, and also can be uploaded a snapshot which is .jpg in default.

(8) After saved the setting, the receiver mailbox will get the alarm information mail when alarm is triggered.

Note: If mail unable to send, please check whether DVR can access internet, or the mail server can work well.



4.6 COM Setup

After login, click “Main Menu”-> “COM setup” ,the interface is as follows:
You can do the operation of connecting other serial device to DVR in this interface.DVR provide two pairs of serial connection terminal:RS485 and RX.The two serial port both are full duplex terminal which have receive and transmit function. DVR can be connected to PTZ, serial keyboard and other serial devices at the same time.

4.6.1 COM

“COM”’s interface is as follows:

The parameters of RS485, RX include:baudrate, data bit, stop bit,check bit etc.

These parameters are used for defining the COM type, there are 3 types to choose: PTZ, Serial keyboard, transparency channel.

- Baudrate:Set the baudrate of the communication between COM and its outer devices.Such as PTZ ,keyboard's baudrate must be identical with DVR system's baudrate.
- Data bit,stop bit,check bit: Set the data bit, stop bit and check bit according to the PTZ protocol code. Commonly, the PTZ protocol’s default date bit is 8,check bit is None, stop bit is 1.
- Host address: When one keyboard connect with several DVRs in the parallel way,the keyboard is used to control and differentiate different DVR’s identify code.
- PTZ protocol: Set the outer PTZ protocol in this option, and the protocol must be the same with the PTZ itself.

4.6.2 PTZ

The procedure of PTZ setting:

❙ Set COM type, COM device and baudrate in the “COM setup” interface.

❙ Enter the “PTZ Setup” interface to set protocol and address code (The default PTZ address code is coincide with every channel, for instance, the first channel’s PTZ address code is 1).

Note: PTZ protocol, baudrate, address code must coincide with the PTZ camera itself.

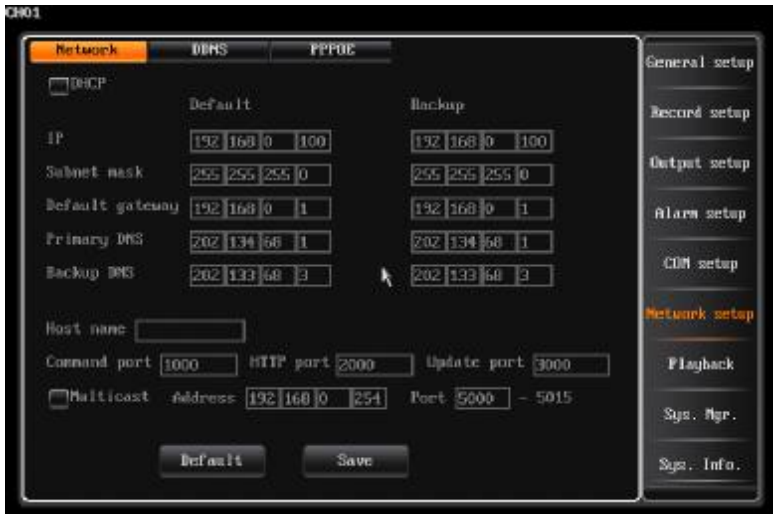
❙ Switch the channel to single picture display status, press the “PTZ” key on the remote controller to get in the PTZ control mode, then you can use the remote controller to control the PTZ, press “PTZ” again you can quit the PTZ control mode; You can also right click the mouse to enter the PTZ control interface.

❙ Setting and calling preset point by the remote controller:

Enter the PTZ status, press the direction button make the PTZ turn the direction which you want to set as preset point,press “*preset” botton on remote controller and input the No. of the preset point in the box(such as 001),then turn the PTZ to another direction,if you press the “#call” button and input the No. (001) which you preset to the box,the PTZ will turn to the 001 preset point automatically.

❙ Setting and calling preset point by mouse: Enter the PTZ status, double left click mouse at the preset input box to enable the software-keyboard and input the preset No.(such as 001).Right click mouse to quit software-keyboard, then click “preset” to activate the setup. Then turn the PTZ to another direction,if you click the “call” and input the No.(001) which you preset to the box,the PTZ will turn to the 001 preset point automatically. Click “return” to quit the PTZ interface.

- Multi-preset position sequence (Note: Only enable when system log off)
  (1) Sequence interval time:0-99s.
  (2) Preset No.:each channel can max set 16 preset position.
  (3) Range of preset No.:001-255,255 means closed.



4.7 Network Setup

After login, user can through “Main menu”-> “Network Setup” to enter the network setup interface.

4.7.1 IP Setup

The Network setup interface is as follows:

- Auto acquire IP address:If the server in the LAN where the DVR is placed has the DHCP service and you have selected the “DHCP” option, DVR will obtain a dynamic IP address from the server and displayed within the IP address column.
- Disable DHCP: If there is no DHCP service in the LAN, you can choose this option to designate the static IP address.
  IP settings: This IP must be unique. It can’t conflict with the IP of other servers or working stations in the same LAN.Default: 192.168.0.6.
  Subnet mask code: Used to differentiate subnet.
  Gateway address:Used to realize communication between different networks, it needs to set up gateway address.
  DNS server:Input the DNS address acquired by PPPOE(Note: Please ensure the DNS address is correct, otherwise the DDNS will not work).
- Command port: The port for data transmitting with client, default set is 8101,port range 8000-9000.
- HTTP port:IE browse port, default set is 81. Port can be changed. You have to restart the system to effect the changes. After you change the

HTTP port, you should type http://IP:port for IE browse.

- Enable multicast: This function only affects UDP stream.
- Multiple IP address:Multiple IP address set range is from 224.0.0.0 to 239.255.255.255;The system default is 239.0.0.1.
- Multiple port:The default port is start with 8000.Note: If there are 2 DVRs or above in one section of the net, please ensure that the multiple port is unique, or you cannot open the multiple video.

It shows the network information of the public network after the ADSL connection succeeds(Such as IP address and Subnet mask code). Click the "save" key to save the information. Next time, it will be dial to net automatically(Note: You must connect the net manually after first set the "auto re-dial").

4.7.2 DDNS

Our DVR system support DDNS function. You can analyze the WAN IP which is directly dial form the ADSL, and also the router mapping WAN IP address.This function supports the Domain name which is registered from www.oray.cn, www.dyndns.com. You can choose one of them according to the need.

- Login www.oray.cn to apply the oray DDNS service, please write down the username and the password.Choose the oray server on the DVR, input the username, password you have applied, save it, then you can see the DDNS information after a few minutes.
- Login www.dyndns.com to apply the dyndns DDNS service, please write down the username and the password.Choose the dyndns server on the DVR,input the username, password you have applied, save it, then you can see the DDNS information after a few minutes.

4.7.3 PPPOE

Select “Network Setup” and click “PPPOE”, and the interface is as follows:

PPPOE is one of the mode to connect to the WAN: Connect to the WAN by system via dial the ADSL directly.

- Username:ADSL account user name.
- Password:ADSL account password.
- Connect:After you input the correct ADSL account and password,focus the cursor on the icon and press “Connect” to connect the WAN.
- Auto Connect: If you select this option, system will automatically connect the WAN after disconnection.
- Save password: If you select this option, system will automatically save the ADSL password, so you don't need to input them again when reconnect to the WAN.
- It shows the network information of the public network(such as IP, Subnet address) after the connection succeeds. Press “save” button, it will save the options include auto re-dial and save password.

Note: You must connect the net manually after first set the “auto re-dial”.

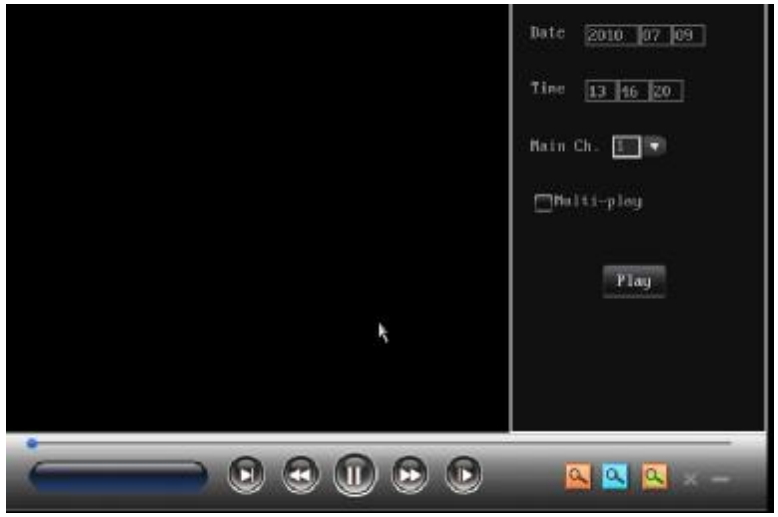
4.8 Playback

System has two ways to enter playback interface:

(1) Press “play” on the remote controller to enter the record playback interface.Then click playback to do the accurate playback.

(2) After login,click “main menu”-> “playback” to enter the playback interface.

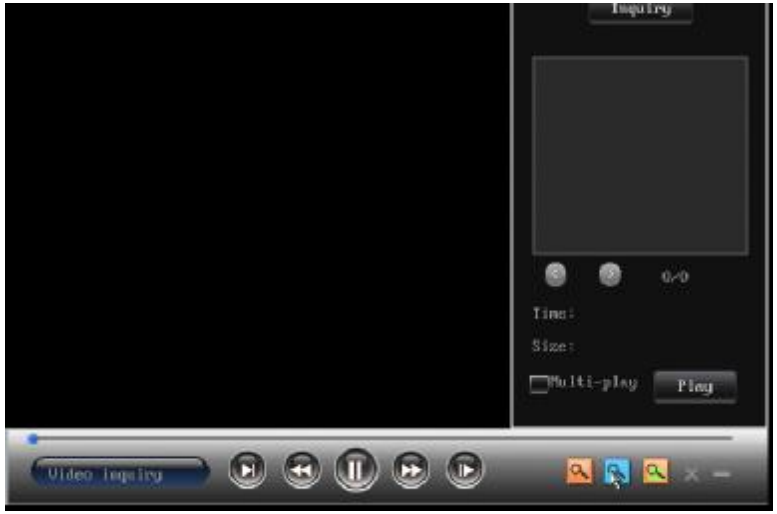
Click the blue zoom key to enter the record inquire interface, you can choose record files by period or record type. Click yellow zoom mark to switch to the accurate playback interface.



- There are 4 types record file: manual, schedule, motion, alarm. You can press “+” or “-” button on the remote controller or left click mouse to choose file type. System default list all record types files.
- Full channel playback:System support multi-playback (16channels) function.They are all real time playback. You can press the number button on remote controller to switch to another channel when playback the record.
- After choose time period and channel, system will update the record data.
- When you choose a record file, the start/stop time and size of the file will display at the lower part of the interface.
- Move cursor to the file you want by remote controller, press “confirm” button to start playback the file.you can also use this function by double left click mouse on the file.
- Click page up/down key for category search in different pages.

- Right click the mouse during playback to use/hide playback control menu.
- Support digital zoom when playback by mouse. Operation procedure: Enter the playback image, click mouse wheel to start option,left click mouse for selecting digital zoom start point, then drag mouse to the point where you want to be digital zoom end point. There will be appear an square. Drag any border of the square area to zoom in. Right click mouse to quit the digital zoom interface.

4.9 System Management



After login, user can through “Main Menu”-> “System Management” enter the system management interface. The figure is as follow:

4.9.1 User Management

When the DVR leaves the factory, there is just one user named “admin”, the default password is 888888,please use this password when firstly login the DVR. User “admin” has the most powerful right of all the users, and can create15 users at most, all the rights of the 15 users are distributed by “admin”. In order to protect the DVR’s security, the administrator should modify the password on the “User management” interface.

1. User management

- Add/delete user:Focus the cursor on the “add” icon and click to add new user, move the cursor to select the user in the user list, then focus the cursor on the “delete” icon and click to delete the user.

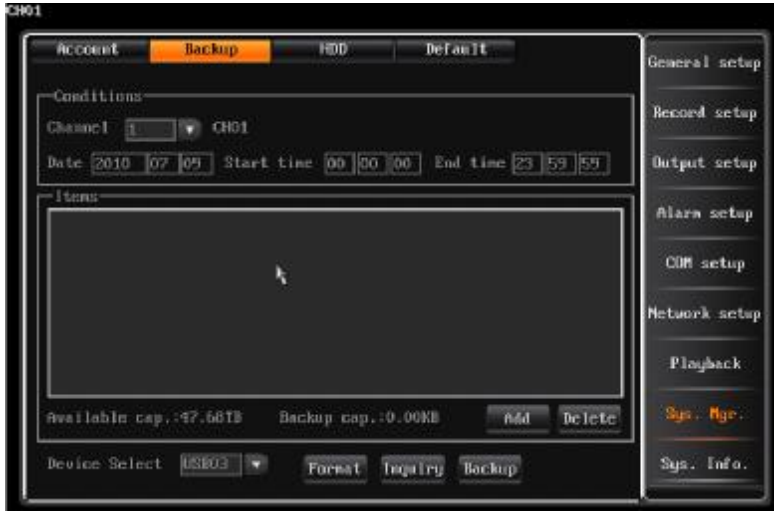
l Modify password:Using the direction key of the remote controller to move the cursor to the user list, press “OK”, then you can get in the interface, or double click the mouse to get in.

l Support local and remote rights setting.

l Display the user list when login: When login the DVR, use the “+”, “-” on the remote controller or click the wheel of the mouse to select the user; If not select “Display the user list when login”, you must input the username when login.

2. User Group

Support user group function:each user can just take part in one group,the admin user can distribute rights to users in this group.The interface is as follows.



4.9.2 Backup Management

There are three ways for backup:(1) Backup the file to remote computer through network. For detail operation please refer to the DVR client user manual. (2) U disk backup,suppot U disk hot-swappable:The backup disk must be FAT32 and capacity is bigger than 512M.(3) Support CD/DVD burnner.

1.File Backup

The backup interface is the right figure above:

Backup function allows to backup up to 16 record files for different channels or different time periods. The details of backup is as follows:

(1) Input time period and channel number.

(2) Move the cursor to “ADD” and press to confirm. The added file will appear in the backup files list. For more record files, please select the time period and channel number and add them to the list.

(3) After you add all the files, move the cursor to “BACKUP” icon and press to confirm, then system would automatically start to backup.

(4) You can backup any record files without waiting.

Backup files list: Display added record files for different channels and different time periods.

Backup host: User can name the host to differ it from other hosts. After setting up the host name, user can click “save” to confirm it.(Note: The host name can be set up to maximum 32 characters.)

2.Backup file playback

To playback the backup files, user has to enter the backup interface and click “Inquire” button,select the record file and press “ENTER” to playback.

Backup date: Display the backup files in current HDD backup partition.

Move the cursor on the date icon and press “ENTER”, and the file list at the right side would display all files information of the date.

Backup file list: Display backup file information of a certain date.

Note: User can not use the fast forward function when display backup file.

4.9.3 Disk Management

After login,enter the interface through “Main Menu”-> “System Management”,the interface is as follows:

The 1st line displays the connective HDD NO.. The 2nd line displays the HDD status. The 3rd, 4th and 5th lines display the HDD capacity, free space and partition type information. The last line displays the total HDD capacity and total free space of all the HDDs.

Disk format: System supports only FAT32 format, the capacity of the HDD is above 32G.System supports only one partition for backup.

Format: Select the HDD NO., then focus on the “format” icon and press “OK” to choose the type of the partition (DATA or BACKUP). The interface is as follows, after you confirmed the partition type, press “OK”, the system will prompt “It’s formatting...”.

4.9.4 Restore Default

The way to restore default setting: After login, through “System Management”-> “Default” continuous operations to enter the interface, the interface is as follows:

Note: Network IP and port, System time, user account and hard disk management wouldn’t be restore default when do this operation.System default parameters:

Common Para.:Contrast(3:1),Video format (PAL);Record overwrite mode(Auto cycle);Open auto locking(Enabled),auto lock time 3 minutes.

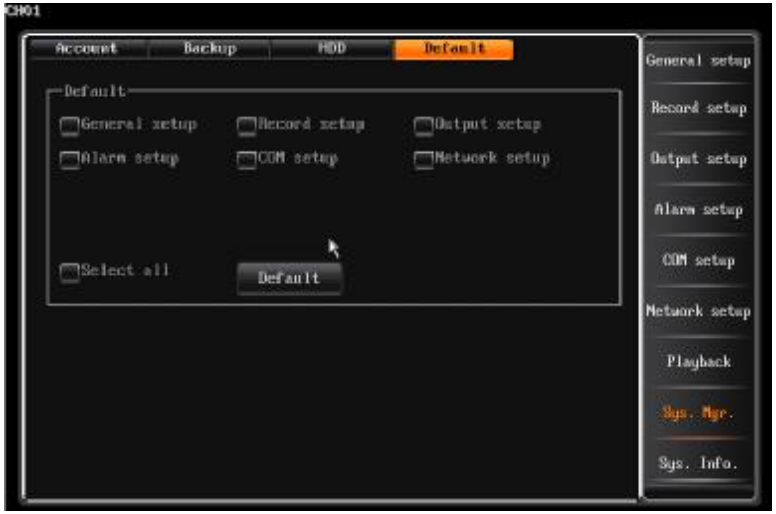
Rec. Para.:Record mode(All);Encoding stream type(VBR);Encoding stream(512K);Record quality(High);Video frame(25);Audio(Enabled); Transmission encoding stream(512K);Transmission record quality(High); Transmission audio(enabled);Pre-record time(10s);Delay record time (30s).

Record Mode:Manual(Closed);Schedule(Closed);Motion detection (Closed);Alarm detection(Closed);Video loss alarm(Enabled);Alarm output(1~2).

Network:Auto redial(Closed);Auto login(Closed).

COM:Baudrate(9600);Data bit(8);Parity bit(None);Stop bit(1);Keyboard address(1);Protocol(Unknown).

Channel:Channel name(Reset to default);Video area mask(No mask);



Date format(YYYY-MM-DD);Display channel name (Enabled);Display time(Enabled);Display temperature(Enabled);Channel switch(Closed).

4.9.5 Password Reset

When you forget the system password or the admin's password, the factory's default setting can be retrieved by the following operation.

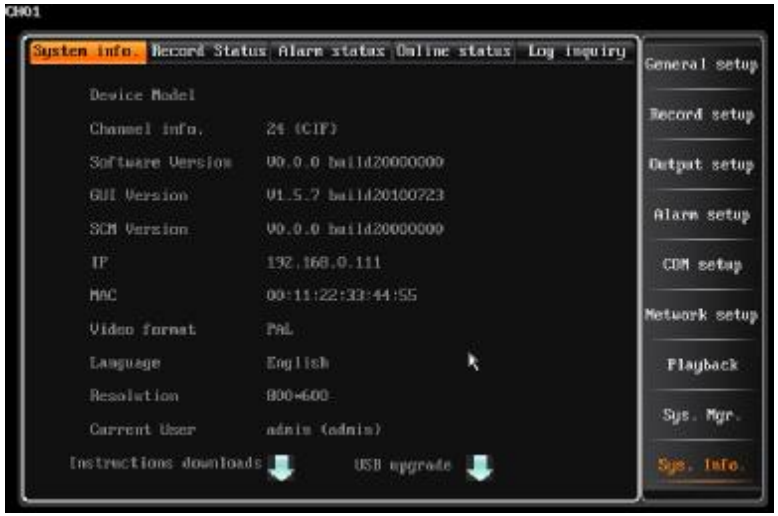
Shut off machine and cut off the power supply. The operations are as follows:

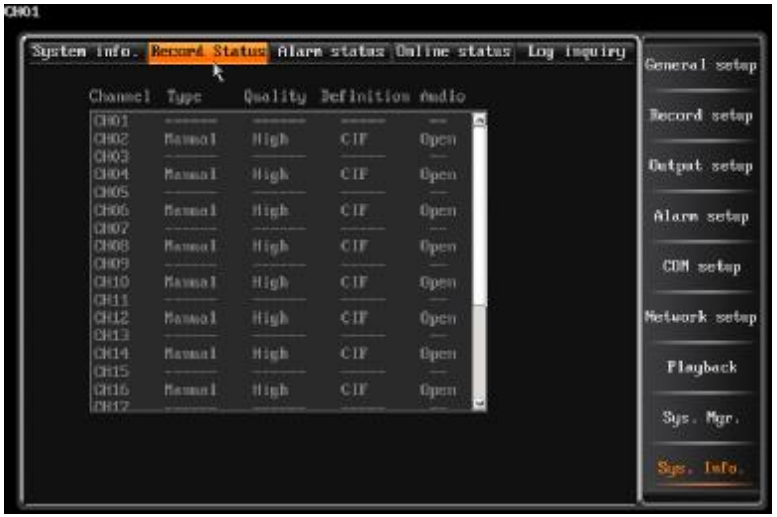
1. Unload the cover screw, and remove the case lid from the machine.
2. Find J1 pin on the back of the front panel (on the back of the IR indicator).
3. Jump the thread piece to put the legs 1, 2 of J1 to the status of short circuit(Default is 2,3).
4. Connect the power supply, and start the machine. You can hear buzzer sounds, and it indicates that the passwords have been set to the default value at the moment.
5. Shut off the machine again, and cut off the machine power supply.
6. Pull out the jumping thread piece, and let the legs 1, 2 of J1 to the status of open circuit, and then insert the jumper cap in the legs 2,3.
7. Place back the case lid.

4.10 System Information

4.10.1 System Information

It displays software version, IP address etc. The interface is as follows:





4.10.2 Record Status

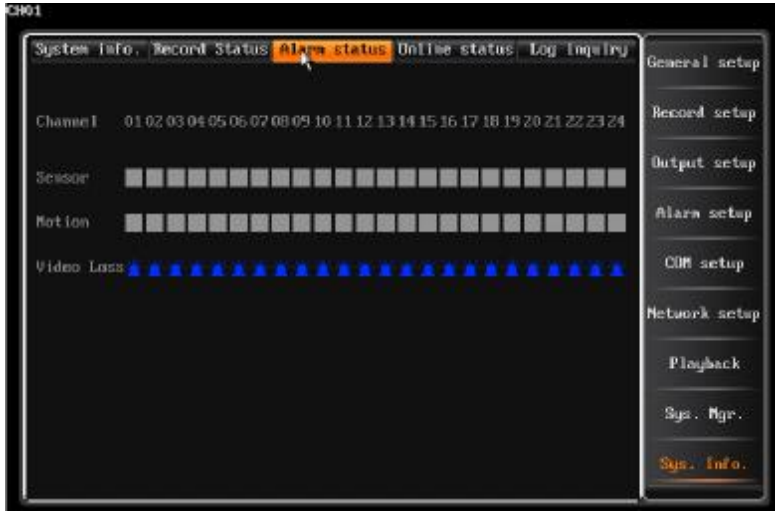
The interface is the right figure above:

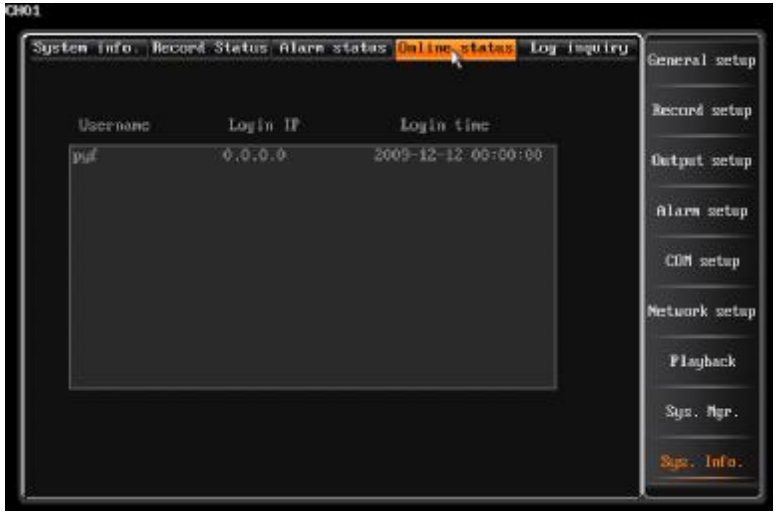
Quick inquire the current system record status. It shows the record status of each channel's current record type, record quality,definition and the audio record status(on or off),if in the recording status, the "Type" bar would show the type of current record(manual,timer,motion, alarm), record quality shows the current image quality.

4.10.3 Alarm Status

The interface is as follows:

It shows the alrm type of each channel: Sensor alarm (Red color), motion alarm(Yellow color) and video lost alarm(Blue color). You can clear the alarm through the “CLEAR” button of the remote controller, or click the “alarm clear” on the menu by mouse.





4.10.4 Online Status

It displays the information of outer PC which connected to DVR. Such as: IP address, login/off time.The interface is the right figure above:

4.10.5 Log Information

The interface is as follows:

l At the bottom of log information interface will display page No., user can click page up/down to check (The number of the log item is no limited). The log file can't be recognized on PC,the log information of host side can search and show through client software.Click page up/down key for category search in different pages.

l Contents of the logbook:system start-up/shutdown and change version log, alarm log, PTZ control log, user login /log off, changing system parameters, recording playback log, backup log, format HDD log , user login client log ,etc.

4.11 Software Upgrade

There are 2 ways for firmware upgrade:1.Client software upgrade;2.USB device upgrade.Please read the statement carefully before upgrade.

4.11.1 Client Software Upgrade

Ø Please double check the version of the upgrade software, so you can restore to the former version when your upgrade is failed. If your system are running well or just don't need the new function, we recommend you keep the default version. Please backup the important record files before upgrade.

Ø Do ensure supplying the power and the stability of network when upgrading. Network outages and interrupted power supply will cause upgrading failure. On a PC client remote upgrade download files completed, the host-side did not appear “the update was successful, which is resuming the equipment, please be later...”,in six minutes, you can shut down and then reboot, then check whether the host computer update was successful.

Ø Please double check the version of the upgrade software, including machine model and boot interface, and make sure whether it corresponds to your system.If you have any doubts, don’t upgrade, or in case you fail to upgrade the firmware, you can neither redo the system upgrade nor restart the machine(These upgrade failure machine must send back to the factory).

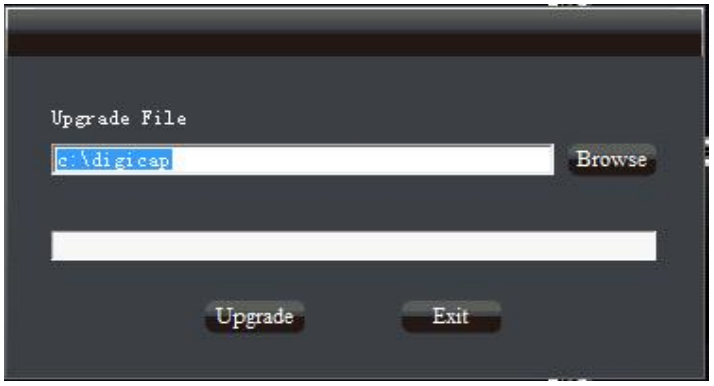
Ø After upgrade, for the new features, please refer to the user manual of the new version. You can get the new version from our website or the suppliers.

Ø Don’t modify the software(including the name of the firmware), otherwise, we will take no responsibility and will not provide free update.

Ø Make sure the client installation procedure is the same as the system.

The procedure is as follows:

1. Connect the Net DVR to PC by coherent network cable or LAN (pay attention to IP conflict).
2. Before upgrading, please confirm the IP address of host computer, then enter client end.
3. After login and choose “system” -> “Remote update”.
4. Choose “Browse”, choose the file to be updated, and refer to the following figure(left figure).
5. The following figure is displayed on DVR (right figure).



6. Waits for 3 seconds, the DVR will display “Transmitting data finished. Updating software ...”. It probably takes 2-3 minutes to update the software.
7. When a window that contains the information of upgrading successfully pops up, it means that the update finished. Then, the machine will automatically restart.
8. After the system restart, the admin password is the former version’s.

4.11.2 USB Upgrade

Operation steps:

1. Copy the upgrade.bin to the U disk.
2. Plug into the USB disk on the back of the DVR, right click the mouse,then pops out the tip, and confirm it.
3. The host says “The system is updating...”.
4. When the upgrade have been finished, the host will pops out “Update success, it’s rebooting, please wait...”,that indicates the upgrade is successful, then the host will restart automatically.

5. After the system restart, the admin password is the former version's.

4.12 Power Resume

If the power is shut down unexpectedly when the system is in standby or working status, system could start automatically restart and resume to the original status after power back. The advantage of this function assures the system maintain the continuity condition for outage.

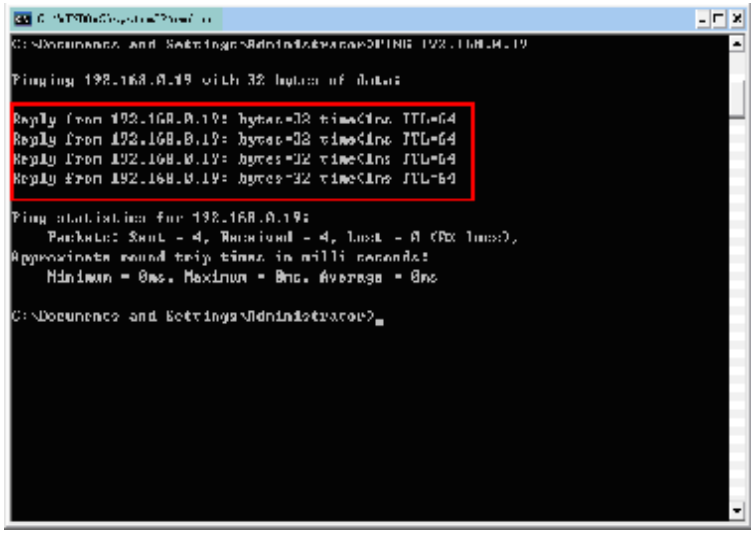
Appendix 1 IE Operation Instructions

Notice: Please set firewall rank for low or medium, and surf software or net assistant software, etc. should be blocked or unloaded. Otherwise the software may not run properly. Please guarantee to install DirectX 9.0 of Microsoft and confirm the Internet Explorer edition is 6.0 version or above.

1. LAN Configuration for IE Browse

1. "Ping"the host IP first to confirm if the DVR is connected.

2. Type the host IP into windows IE and connect to the DVR. Input user name and password to log in. If the log in is succeeded, the following interface will pop out.



3. Please refer to “Client user guide” for further operation.

2. WAN Operation Instructions

n If there is a fixed WAN IP address that can be allocated to the DVR host, the DVR host can directly access wide-area network, and can be visited after set up IP, subnet mask and gateway.

n The host-setting steps are as follows: after logging, click the “Menu” button, enter “Network Settings”, then choose and enter the “Dial-up Settings” interface, input the user name and password, and click on the “Link” to make the DVR host access Internet by dial-up. After dial-up successfully, Net DVR will display relevant information. User can input the host IP address in windows IE and visit the host through network.

If you want to connect multiple DVRs to wide area network with only one IP, please refer to the following instruction:

Firstly, set up IP, subnet mask and gateway in the “IP set up” interface of “network setting” in the main menu of host DVR. Note: Gateway must be set the same as the mapping router’s LAN IP. After set-up, connect the host to LAN to make the network mapping on the dial-up internet router. (Note: The instruction is for TCP protocol mapping)

Through the router mapping:

Host network interface settings are as following:

Note: The values of command port and HTTP port indicated by red box were 8101 and 80. Users can customize the value of the two ports. After setting and saving, DVR will restart to take the setting into effect.

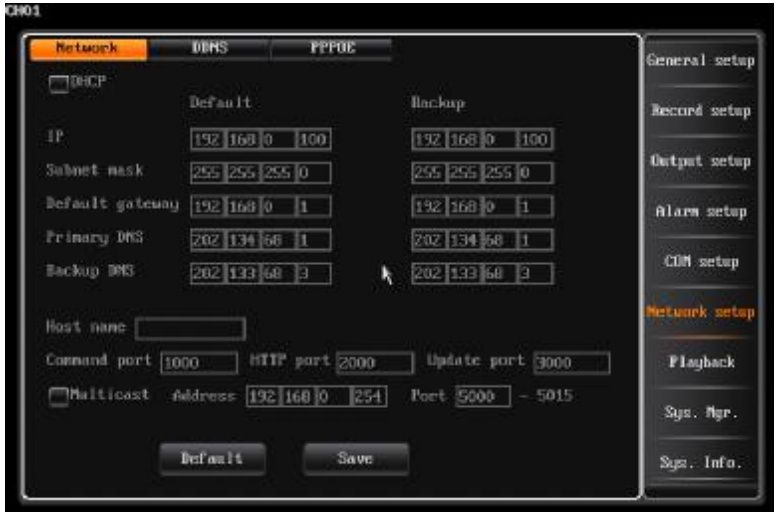


Fig 1

Take the TP-LINK as an example:

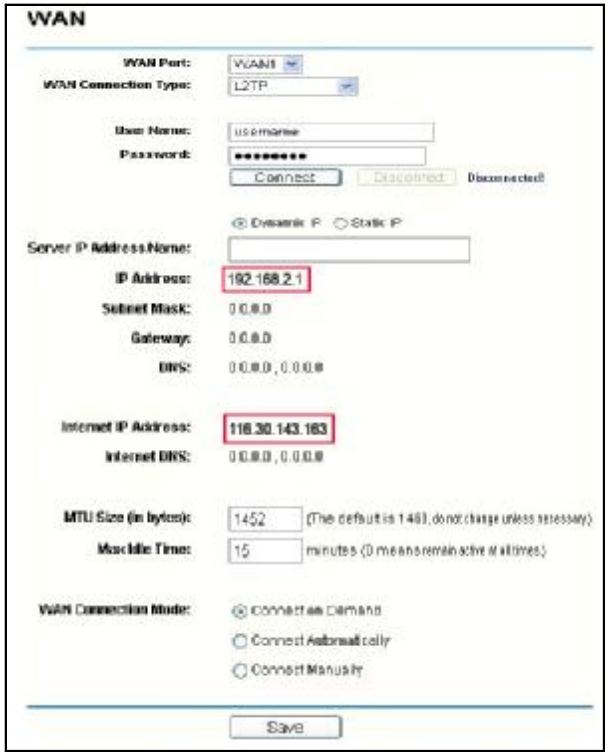


Fig 2

[1] After signing up routers, by choosing “Running Status” icon on left side menu of Figure 2, view the LAN IP and WAN IP address of the routers, such as, the LAN IP address 192.168.2.1, WAN IP address 116.30.143.163.

[2]Choose the “Transfer Rules” on Figure 2 left menu, as shown in Figure 3, respectively input “command port: 8101”, “HTTP monitor port: 80”, “IP Address: 192.168.2.6”, as shown in Figure 1, and choose to enable the agreement “ALL”. Click the “Save” to save the settings.

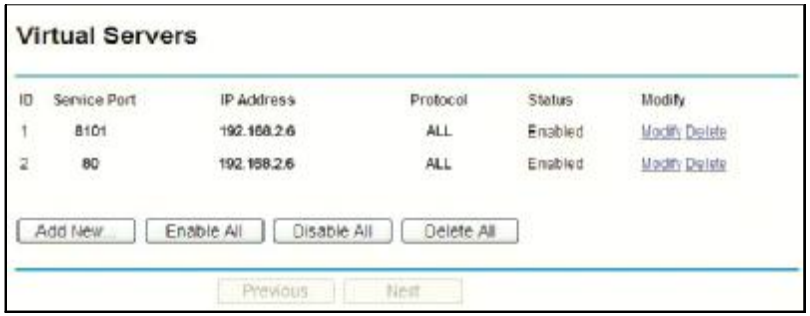


Fig 3

[3]Port Description: The command port is the TCP port of all DVRs communications, and HTTP port is IE browser port.

a. When the two ports are default setting, directly input the WAN IP address (116.30.143.163) shown in Figure 2 into client manager, and sign in. After login successfully, the interface is shown as Figure 4. For IE browse, directly input the WAN IP address (116.30.143.163) shown in Figure 2, and input the correct user name and password, you can log in. After login successfully, the interface is shown as Figure 5.

Fig 4

Fig 5

b. when these two ports are not the default values, for IE browser, input as the following mode: http://116.30.143.163:http port. For client manager, when login, input the command port in the login box.

Note: between IP address and port number, or between user name and port number, the punctuation ":" must be input.

Appendix 2: Net DVR Q&A

Thank you for choosing our DVR series products. We will always be at your services. In case you have any difficulty while using the products, please refer to the below frequently asked questions & answers. If you cannot find solution here, or the solution offered here still fails, please feel free to contact us by our hotline and/or technical support E-mail box. We will make most timely reply to your questions.

Testing Methods:
[1] Replace Method(Replace the power supply and HDD of the DVR).
[2] Minimum Load Method(Get rid of the HDD, video, audio and alarm resource).
[3] Upgrade(Solve some incompatible problems).

Note:Some problems may be caused by incorrect operation. If you can not make sure the problems, please run “Reset default”option.

(A)The problem about rebooting, self testing, system halted.

01: Why the DVR doesn’t start up though power cable is well connected to power source?

01: 1. Check if you have turned on the switcher on the back panel. 2.Check if you have inputted the right power password and pressed Enter button.

02: I see the Super DVR logo, but why it stops at self-check process?

02: To detect if the problem is caused by hard disks, please remove all the hard disks and start system again. The DVR can start up without a hard disk. After start up, system will prompt “system does not detect the disk information, whether to continue”. Click “OK” button, and the host can engage in normal operation.

03: My system can finally start up but seems to be quite slow. Why?

03: Hard disk error will take system much time on rechecking.

04: Why does my system restart after self-check?

04: 1.Check the hard disks if they are in FAT32 file format, if not, change to FAT32. 2. Check Color System setting in Record Parameter menu. In case this setting is PAL, while present video input is in NTSC format, which will cause system restart. 3. Please unplug the network cable, to see whether DVRs run normally, since there are serious problems of the network which may also cause the host to restart repeatedly.

05: Why my remoter doesn't work?

05: 1.Please check if the IR indicator light on the front panel flashes when you make operations with the buttons. If not, please check whether the remote control has run out of battery, or the remote control has been damaged. 2. Check if the front panel is in lock up status. If so, press Login/Lock button and input power password to unlock. 3. Please check if the host software locks the operation. If yes, please input user name, password to login, so to make IR remoter control work.

06: Why system halts at some certain time?

06: In case system halts at some certain time, for example, around 7:30am, please check your electricity system. This problem is mostly happened in factories, when at around 7:30, all machines start and cause power supply in a short temporarily. Try to make the DVR not connect to the same circuit as the industrial machines.

(B)Display Problems

01: Why there is nothing displayed on the monitor or the display keeps shaking?

01: 1.Check if the power is on or not. If the power is on, the power light at the front panel should be on. 2.Check the display mode. Refer to VGA/CVBS display switch from the user manual.

02: Why my DVR display images that seems to be interfered, and like water wave shape?

02: 1.Please check if the video cable has well connected. 2. Check if there are strong electricity current around the video cable. Please don't put video cable together with electricity cables to avoid interfering. 3.Please check if the DVR case is well grounded.

Only connect the case to ground by the screw on the back panel, while no other points connect to ground. 4.Please check camera, monitor and video cables if they are aging.

03: Why both the live display image and playback image are not showing the true color?

03: Please check if you have set the parameters well. (Please refer to chapter 4.2.1 for details)

04: Why my DVR displays distorted images on VGA monitor or cannot make full screen display?

04: 1.Please check if your VGA monitor is well set up. 2. Change your VGA monitor settings till make it full screen.

05: Why my DVR system shows disordered color?

05: 1.Please check you VGA data line, as well as connection condition between DVR to VGA monitor. 2. Check if the DVR system has overheat.

06: I started my system seeming to be successfull, but there was a certain channel displaying nothing, neither caption. Why?

06: Please make restore to factory default settings.

07: Why it displays mosaics when playback?

07: 1.Check the recording parameter setting. If the recording parameter is set too low, it can influence the image quality and cause mosaics. 2.If bad sectors exist in the HDD, it might cause mosaics when playback. Users need to check HDD.

(C)Client manager and remote functions

01: Why my windows system refused my installing client manager software?

01: You may haven't installed DirectX8.1 or above. Please make sure you have installed before installation.

02: How to make remote surveillance?

02: 1.Install the client manager software, and connect the computer to the network, e.g. LAN, ADSL.2. Set a fixed IP for the DVR:a.In LAN, manually give the DVR an IP, like 192.168.1.188.b.In Internet, you should apply for the fixed IP from Internet services suppliers.3. Client PC should also get an IP. If it's in the same LAN as DVR, then set manually an IP like 192.168.1.23 for the PC.

4. Test the connection between client PC and DVR by PING the DVR IP address on the PC.5. Input DVR IP address and port number in the client manager software, as well as the user name and password that is preset on DVR.

03: When I connect to remote DVR, but I can get only picture with mosaics, and sometimes pictures are still. Why?

03: 1.Please check the network conditions. It's probably blocked or very busy, so some video data may lose in transmission, which will cause mosaics. 2. Check the DVR server side, if the original images have mosaics. 3. On win2003 operating system, after the successfully sign, if DVR client cannot open image or images have mosaics, please set as the following: On the desktop space, click the right button of mouse, and select Attribute - > Settings - > High - > FAQ - > hardware acceleration option completely.

04: I have well connected the DVR with network cable (network cable indicator light flashes), but I fail to Ping the DVR from remote computers. Why?

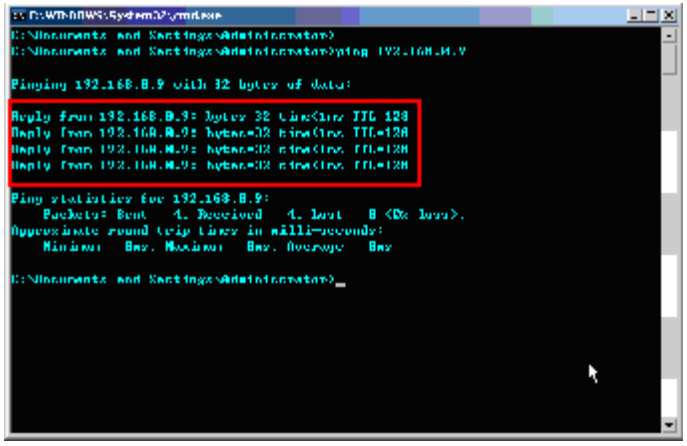
04: Please input "arp-d *" command on "Run Interface of Computer" to delete items set by inet_addr.

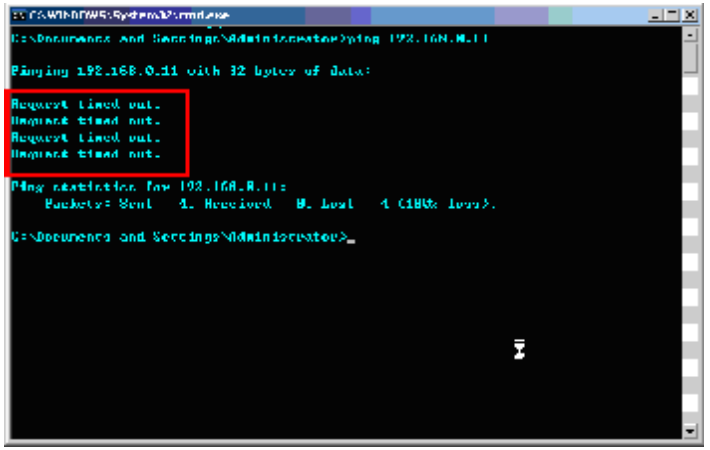
05: How to use client software to access DVR server?

05: A. Make sure whether the DVR server is turned on. B. Make sure the IP of DVR server is unique. C. Make sure the client software is installed correctly on the client side. D. Use command ping to check whether the computer connected to DVR host. If not, Please input "arp-d*" command to delete items set by inet_addr.

For example:

Following picture shows computer and 192.168.0.19 DVR connection has been established;Following picture shows computer and 192.168.0.11 DVR connection has not been established:





E. Enter the client software. F. Input the IP, Port, user name, password of the DVR server, and then click login.

Note: If you still can not login successfully, please confirm the above user name and password or repeat checking A-> F steps. If you can not login, please uninstall the client program, select new directory for installation, and then implement A-> F steps again.

06: I input DVR IP address, user name and password in client manager software, and system shows successfully connected to remote DVR, but I cannot view the cameras. Why?

06: 1.Please check if the computer has opened firewall protection. If so, close it or set the security level lower.2. Try to close/open the Multicast function in host DVR. When multicast data can't be received, some devices fail to have images although user successfully log in. 3. Check the model of your display card. Some diaplay cards are not compatible with our products.

(D)Record, video data and backup

01: Why my DVR system can't record audio?

01: 1.Please check if you have enabled 'Mute' function. 2. Please check the Record parameter setup window if you have enabled audio record. 3. Check the audio cable if it is in good condition.

02: Why I enable manual record, but there is no recording data in the file list?

02: 1. Check if you have set the correct search mode. Be sure that you have selected manual record mode to search the record data. 2. Please make sure you have formatted the HDD before use the DVR. The system only supports FAT32 format.

03: Why I cannot make timer record (schedule record)?

03: 1.Please check if you have corrected the set of the schedules. There are two period of time, and please make sure the first time period is before the second one. 2. Please check if power supply was cut off in the scheduled time periods. 3. Users needing the data has been covered. 4. User's hard drive has a physical damage or a logical error, which will result in the data to refresh normally.

04: Why I cannot make motion detection record?

04: 1. Please check the motion detection record schedule setting. There are two periods. The first one shall be ahead of the second one. 2. Please check if you have correctly selected the motion detection areas. 3. Maybe caused by too low sensitivity. Try to increase the motion detection sensitivity.

05: Why cannot I make alarm record?

05: 1. Please check the alarm record schedule setting. There are two periods. The first one shall be ahead of the second one. 2. Please refer to the alarm record setup window to check if the alarm linkage channels are well set. 3. Please check if the sensors are well mounted.

06: Why the recorded videos are not continuous?

06: 1. In case you are applying manual record or timer record mode, please check if power supply was cut off in the period. 2. In case

you are applying motion detection or alarm record mode, as system only records after the motion or alarm happens and lasts for a specific time and stops recording. So the recorded files may be not continuous.

07: Why use client manager software to backup data, click on the backup but not respond?

07: Check if firewall is open. Opening a firewall could lead the client program can not backup data from host-side.

08: Why show that backup is successful, but there is no backup data in the list?

08: Host side can not back up the data recorded within 15 minutes. (For example: It is now time 12:00, the video data between 11:45-12:00 can not be backupped.)

09: Why it displays mosaics when playback?

09: Hard disk errors may also cause mosaics. If it is logic damage, please repartition and reformat the hard drive. If it is physical damage, please replace a hard drive.

10: Why playback is quite slow?

10: 1. Please check whether you choose the slow playback. Our DVRs support 1 / 2, 1 / 4, 1 / 8, 1 / 16 of the slow-speed. 2. Please check whether the hard cable is connected well, meanwhile check whether there is a damage to the sector of hard disk. When there is an existence of a bad hard drive sector, it will appear the phenomenon such as playback pause.

11: Why the images are shaking during live view or playback?

11: Check the format of DVR and cameras system. Make sure they are in same format, PAL or NTSC.

(E)Alarm PTZ control

01: How to connect sensor to the system?

01: Our system supports general sensors, e.g. smoke sensor, IR sensor, and supports normal open and normal close working modes.

1. In case your sensing equipments are of high power consumption, to avoid damaging the alarm output module, please make relay extension connection.
2. In case you are using high frequency equipments, e.g. High frequency lights please make relay extension connection method, or alarm module may not work properly.

02: How to connect multiple PTZ cameras, or PTZ devices?

02: 1. Please make connection in star method: Connect multiple controlling lines (RS485) in parallel connection, and set addresses properly. 2. Bus connection: Connect 485+ and 485- to the DVR's 485+ and 485- pins, and connect the next DVR's 485+ and 485- to the first DVR's 485+ and 485-. You may need to add a terminal resistance. Please read the P/T unit manual.

03: I opened motion alarm and sensor alarm, but I got misinformation frequently. Why?

03: Please check and set motion detection sensitivity properly. (Motion detection is sensed motion by light intensity. In case you set it very high sensitivity; day & night changing may trigger an alarm)

04: How to clear the alarms?

04: Under the status of login, you can clear the alarms by pressing the "Clear" button on font panel or "Alarm Clear" key on the IR remoter, or by clicking "Alarm Clear" in the menu using mouse. If the host DVR is locked, please login first.

05: Why I cannot control PTZ devices, e.g. speed dome?

05: 1. please check if you have connected 485 controlling line to DVR correctly. 2. Please check DVR settings, i.e. protocol, baud rate are set the same as the PTZ device. 3. Check whether the address code of the PTZ devices and the settings of DVR host channel are consistent or not (if can not control, can adjust forward or back one address code for testing). 4. If several DVR hosts connect with a same PTZ, the host must enable "System Management"-> "Serial Port Setting"-> "Serial Port Keyboard" on DVR host. (Note: The host has over 30 kinds of commonly used protocols, please patiently test whether your PTZ or high-speed dome protocols can be used in our DVRs.)

NOTES: