

User Manual

V4.23

[4 / 8 / 16 Channel DVR]



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Safety Warning and Precaution

TO REDUCE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

All the safety and operating instructions should be read before the unit is operated.

- Refer all work related to the installation of this product to qualified service personnel or system installers.
- Do not block the ventilation opening or slots on the cover.
- Do not drop metallic parts through slots. This could permanently damage the appliance. Turn the power off immediately and contact qualified personnel for service.
- Do not attempt to disassemble the appliance. To prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside. Contact qualified service personnel for maintenance. Handle the appliance with care. Do not strike or shake, as this may damage the appliance.
- Do not expose the appliance to water or moisture, nor try to operate it in wet areas. Do not take immediate action if the appliance become wet. Turn the power off and refer servicing to qualified service personnel. Moisture may damage the appliance and also cause electric shock.
- Do not use strong or abrasive detergents when cleaning the appliance body. Use a dry cloth to clean the appliance when it is dirty. When the dirt is hard to remove, use a mild detergent and wipe gently.
- Do not overload outlets and extension cords as this may result in a risk of fire or electric shock.
- Do not use the appliance beyond its specified temperature, humidity or power source ratings. Do not use the appliance in an extreme environment where high temperature or high humidity exists. Use the appliance at temperature within indoor type DVR for 0°C ~ +40°C and humidity below 90%. The input power source for this appliance is AC100 ~ 240V.
to the product.

Note

This equipment has been tested and found to comply with the limits for a Class A digital device. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice:

The information in this manual was current when published. The manufacturer reserve the right to revise and improve its products. All specifications are therefore subject to change without notice.

Package Contents

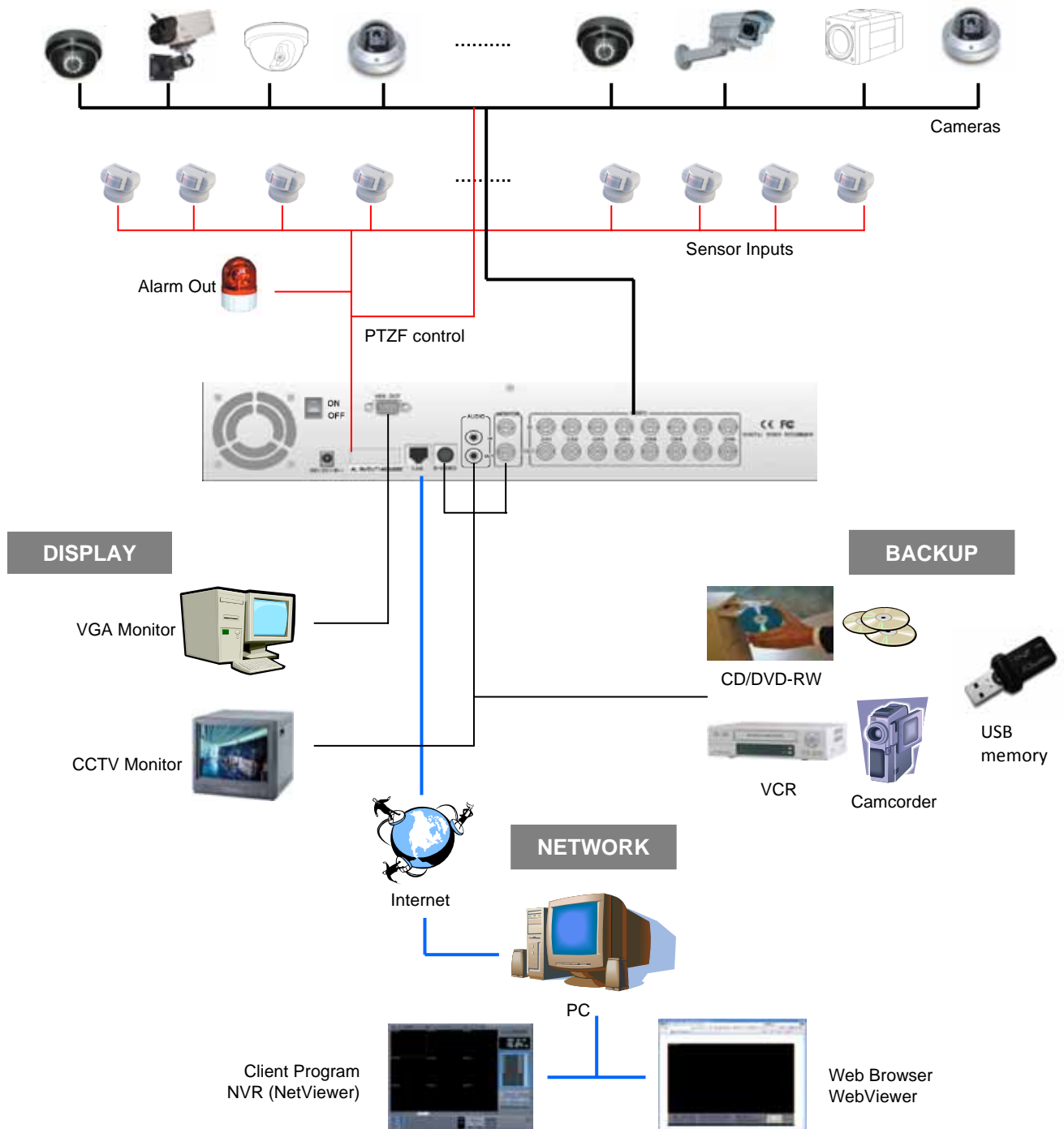
Please make sure the following parts are all included with the main DVR when you open the product package. If there is any missing item, contact your distributor.

Part Name	Quantity
MPEG4 Pentaplex Standalone DVR	1
Remote Controller	1
DC Power Adapter	1
Power Cable	1
Install CD	1
AAA Battery	2
RJ-45 LAN Cable	1



Chapter 1. Understanding Your DVR

1.1. Basic Security System Configuration



Note

You can use general TV or PC Monitor as well as CCTV monitor.

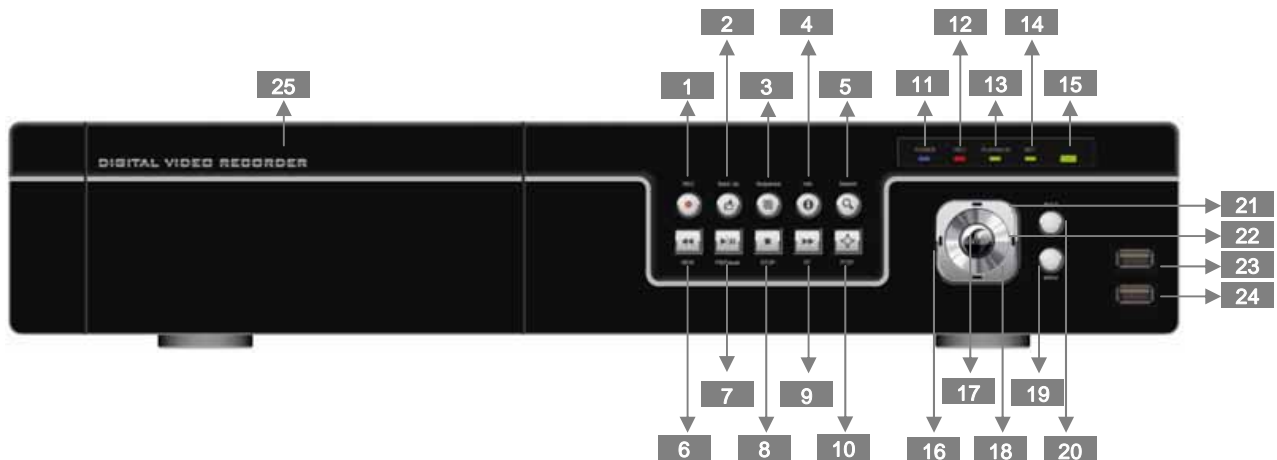
1.2. Features of Your DVR

- Real-time 480/240/120fps (16/8/4CH) live display, recording and 240/120/120fps (16/8/4CH) playback
- Pentaplex : simultaneous live, recording, playback, backup and network access
- Small recording file size using MPEG4 video and G.723 audio technology
- Independent channel adjustment and control
- Video backup directly to AVI format for easy viewing or to MPEG4 format for image authentication
- High speed network transmission with full screen mode and each camera mode
- Dynamic / Static IP address support, own client (NetViewer) / web browser (WebViewer) support
- Remote view and control via high speed internet or USB telephone modem
- Remote recording, still image capturing and printing via network
- Multiple DVRs and multiple clients support by CMS application
- PTZ camera control by RS-485 and via Network
- Independent color adjustment for each camera input and VGA output
- Mouse and IR remote control unit for user interface
- Self-diagnosis system and hardware watchdog : error checking and restoring functions
- Powerful event search function (by manual, schedule, motion, sensor, network or all)
- Pre-alarm recording for motion and/or sensor by selecting ALL-CH recording set up
- Protect files from HDD Overwriting
- System & event log file management
- Copy channel (camera) configuration to other channels for easy setup
- Export / Import DVR configuration for easy installation of multiple DVRs
- CD (or DVD)-Burner, USB and Network PC for data backup
- Composite Video (2), S-Video and VGA output

Notice:

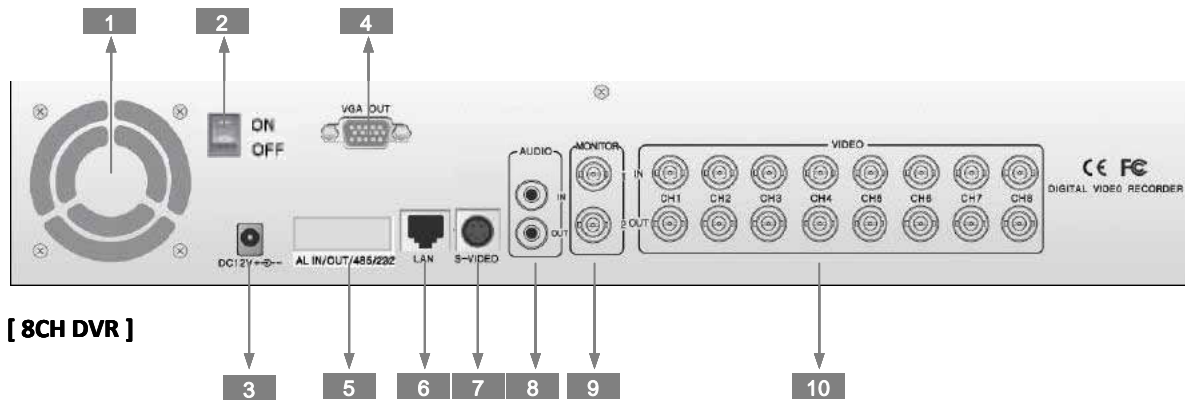
The information in this manual was current when published. The manufacturer reserve the right to revise and improve its products. All specifications are therefore subject to change without notice.

1.3. Front Panel View and Keypads



1. **REC key:** Start/Stop manual recording.
2. **BACKUP key:** Copy your video/audio files from DVR HDD to CD/DVD or USB memory devices.
3. **SEQUENCE key:** Display live videos (channels) in sequence mode (a.k.a. auto display mode). Press it to on/off.
4. **INFO key:** Display system information. Press the key to on/off (exit).
5. **SEARCH key:** To search video/audio files.
6. **REW key:** Rewind the video during playback. Select the rewind speed from REW1/2/3/4 by pressing the key.
7. **PB/Pause key:** Playback and pause the recorded video and audio files.
8. **STOP key:** Stop playback
9. **FF button:** Fast forward the video during playback. Select FF speed from FF1/2/3/4 by pressing this key.
10. **PTZF button:** Control PTZ camera(s) connected to your DVR.
11. **Power LED:** DVR power indicator. When DVR power is on, a steady red light will be on.
12. **REC LED:** Recording indicator. When your DVR is recording any cameras (channels), a green light will be on and will be off after completing the recording.
13. **PLAYBACK LED:** Playback mode indicator. A green light will be on when you play a recorded file back.
14. **NET LED:** Network connection indicator. A green light will be on when the DVR is connected to the network.
15. **IR Remote control sensor**
16. **LEFT key:** Move to the left when navigate through menus.
17. **ENTER/IMAGE CAPTURE key:** Select items shown on the display when navigate through menus.
Also press this key to capture the image during live or playback mode.
18. **DOWN key:** Go down when navigate through menus.
19. **MENU key:** Press to pop up main menu window.
20. **MULTI (channel display) key:** Press to change the display type from various split screen mode.
21. **UP key:** Go up when navigate through menus.
22. **Right button:** Move to the right when navigate through menus.
23. and 24. **USB 2.0 Port:** Connect USB mouse or USB memory device for file backup or firmware upgrade.
25. **CD (or DVD) Burner:** To backup video/audio files in a blank CD or DVD. – **DVD burner is an optional for certain models.**

1.4. Rear Panel View



- 1 Cooling Fan
- 2 Power on/off Switch
- 3 DC Power Input
- 4 VGA Output for VGA monitor
- 5 RS485 (PTZF control), Sensor Inputs, Alarm Output

16CH	16	G	15	14	G	13	12	G	11	10	G	9	8	G	7	6	G	5	4	G	3	2	G	1	NC	C	NO	A+	A-
8CH	8	G	7	6	G	5	4	G	3	2	G	1	NC	C	NO	A+	A-												
4CH	4	G	3	2	G	1	NC	C	NO	A+	A-																		

16 ~ 1, G : Each channel sensor inputs, ground (common) for sensors
 NC, C, NO : Alarm output (Normal close, Common, Normal Open)
 A+, A- : RS485 for PTZF control

- 6 Ethernet Port
- 7 S-Video (Separated Video) Output
- 8 Audio Input / Output
- 9 Composite Video Outputs
- 10 Cameras Inputs / Loop-Through Outputs

1.5. IR Remote Control



1. **REC (Record):** Start/stop manual recording
2. **Mute:** turn on and off the audio out
3. **Number buttons:** Select camera (channel) number
4. **Zoom/Protect file:**
 - (1) Zoom in/out the video when the channel is in full display mode
 - (2) During the playback mode, press this key to save the file as a protected file. Protected file will be saved and will protected from HDD overwriting.
5. **Info:** View your system information.
6. **Menu:** Enter or exit the menu.
7. **Multi:** change the display mode to 1/4/8/16/32 split screen.
8. **PIP (Picture-in-picture):** Enter and exit PIP mode.
9. **Auto (Sequence):** Enter and exit auto (sequence) display mode.
10. **Left**
11. **Up**
12. **Right**
13. **Down**
14. **Enter:**
 - (1) To Select the menu and change the parameter.
 - (2) Capture an image during live or playback mode.

VCR-like functions

15. **Search all:** Go to recorded file search menu.
16. **Search time:** Select the date and time to search recorded files.
17. **Search list:** Select the month and date to search recorded files.
18. **Stop:** Stop playback.
19. **REW:** Rewind (select a speed from 1, 2, 3 and 4 for faster rewind)
20. **FF:** Fast forward (select a speed from FF1, 2, 3 and 4)
21. **Play:** Play a recorded file.
22. **Pause:** Pause a video during play mode

Backup functions

23. **CD/DVD Backup**
24. **USB Backup**
25. **P/T/Z/F Control**

Installing batteries

1. Remove the battery cover by sliding in the direction of the arrow.
2. Insert two AAA batteries according to directions provided.
3. Replace the battery cover by sliding in the direction of the arrow.



Chapter 2. Installation

2.1. HDD Installation



Before Installation

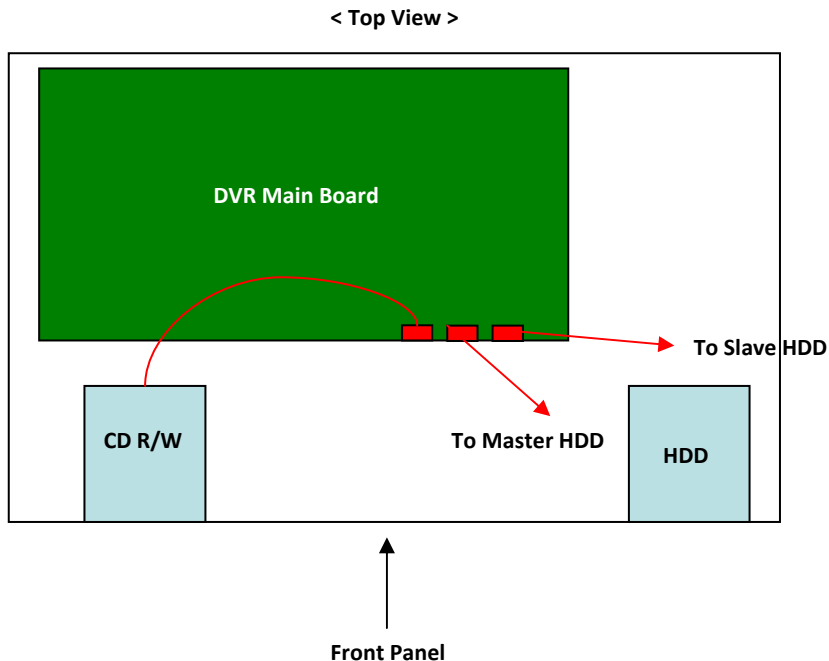
Please make sure that the power of DVR is switched off.

If you install 1 SATA HDD, you must connect a master cable to the HDD (master cable is located next to CDR/W driver port)

- Step 1. Make sure the DVR power is switched **OFF**
- Step 2. Open the top cover of DVR using a cross screw driver.
- Step 3. Take out the HDD mounting plate from DVR.
- Step 4. Place HDD(s) on the mounting plate and mount it with screws.
- Step 5. Replace the mounting plate into the DVR and fix it with screws.
- Step 6. Attach the data and power cable and power cable to HDD(s) correctly.
- Step 7. Replace the top cover of DVR and fix it with screws.

After the HDD(s) installation

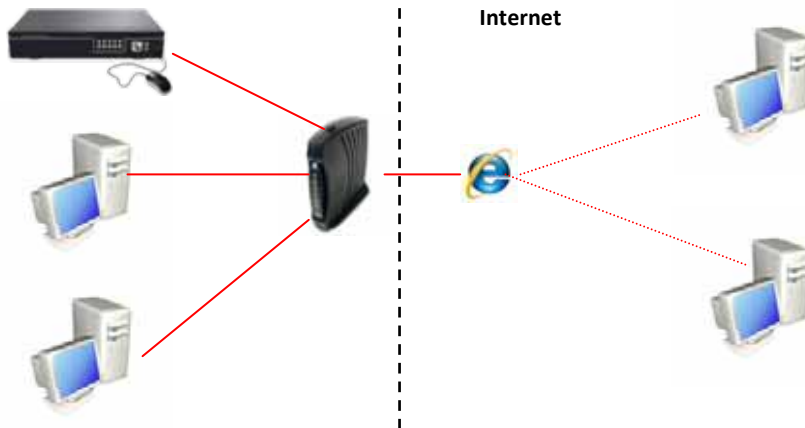
- Step 8. Turn the DVR power **ON**.
- Step 9. DVR will detect HDD(s) during the booting and start formatting.
- Step 10. DVR will automatically be rebooted after formatting and ready to work with HDD(s).



2.2. Network Connection Setup

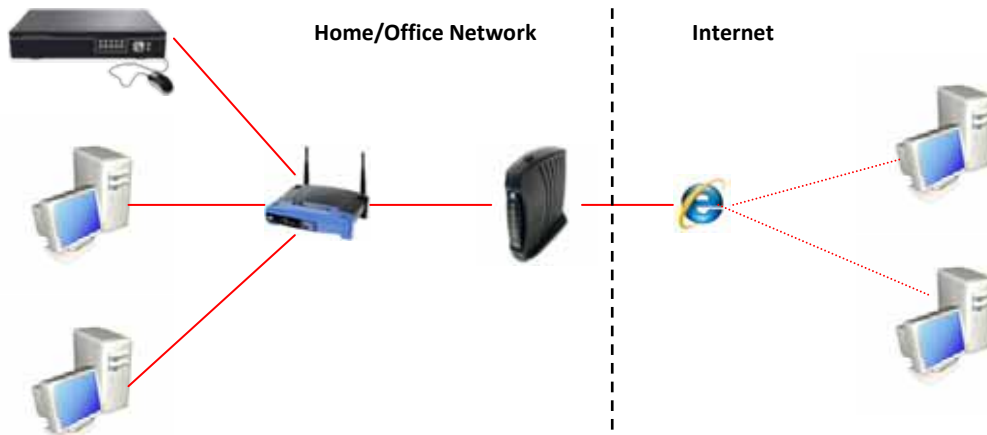
2.2.1 Using a Static IP Address

You can use one of the Static IP addresses, Subnet Mask and Gateway address provided by your ISP (Internet Service Provider) for your DVR. The Gateway address is the IP address of your broadband modem.



2.2.2 Using a Dynamic IP Address

You can use a router with your Dynamic IP broadband modem. In this case, you should set the configuration of a router properly for network connection between DVR and Net/Web Viewer. Please follow the instruction in next section to configure your router correctly.



If your Broadband Modem does not support internal loop back (port forwarding) function and you want to monitor DVR using a PC located in same Intranet, you should use Direct IP instead of DDVRLS in the connection menu of Net Viewer. If your PC is located outside of Intranet, you can use both DDVRLS and Direct IP to connect to DVR even though your Broadband Modem has limited features. You will know about DDVRLS and Direct IP in **Chapter 7, NVR (NET VIEWER)**.

2.2.3. Router Configuration

If your DVR is connected to the network through a router, you should configure router properly. There are 3 steps as follows.

1. WAN Setting 2. DHCP Setting 3. Virtual Server Setting

*A Router from D-Link is quoted as an example in this manual.

2.2.3.1. WAN Setting

Home Advanced Tools Status Help

WAN Settings

Please select the appropriate option to connect to your ISP.

☒ Dynamic IP Address Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)

☐ Static IP Address Choose this option to set static IP information provided to you by your ISP.

☐ PPPoE Choose this option if your ISP uses PPPoE. (For most DSL users)

☐ Others PPTP, L2TP and BigPond Cable

☐ PPTP (for Europe use only)

☐ L2TP (for specific ISPs use only)

☐ BigPond Cable (for Australia use only)

Dynamic IP

Host Name: D1624 (optional)

MAC Address: 00 . 11 . 95 . 02 . 10 . 57 (optional) Clone MAC Address

Primary DNS Address: 206.13.26.12

Secondary DNS Address: 206.13.31.12 (optional)

MTU: 1600

Apply Cancel Help

When you connect to your Router, you can find menu for Wan setting. Please confirm the WAN setting. If you are using DSL service, you should select PPPoE, and you will see sub-menu to type in DSL user name and password.

2.2.3.2. DHCP & IP Address Setting

Home Advanced Tools Status Help

DHCP Server

The D1624 can be setup as a DHCP Server to distribute IP addresses to the LAN network.

DHCP Server: ☒ Enabled ☐ Disabled

Starting IP Address: 192 . 168 . 0 . 120

Ending IP Address: 192 . 168 . 0 . 199

Lease Time: 1 Week

Static DHCP

Static DHCP is used to allow DHCP server to assign same IP address to specific MAC address.

Static DHCP: ☐ Enabled ☒ Disabled

Name:

IP: 192 . 168 . 0 .

MAC Address:

DHCP Client: unknown:00-11-0B-F3-92-E3 Clone

Apply Cancel Help

To assign an unique private IP address to DVR in your intranet environment automatically, you can enable DHCP option in the Network Setup menu of your DVR and your Router. In this case, you can skip the procedures described on this page. But we recommend to assign IP address to DVR manually to prevent unexpected change of IP address.

If you have any problem with DHCP function or want to assign the private IP address, please disable DHCP option in the Network Setup menu of your DVR and check the starting and ending IP addresses used by DHCP server of the Router. **You can assign any private IP address to your DVR, if it is out of the DHCP range. But the IP address should be same with the one in Network Setup menu of your DVR.**

2.2.3.3. Virtual Server Setting

You should register your DVR as a virtual server. Please type the information into IP address field of the router. (e.g. 192.168.0.110). You can check an IP address of DVR by pressing Info. key on the front pane of your DVR.

Protocol Type is TCP, and Private/Public Port numbers should be the same with the Port numbers assigned in DVR. And you can change port numbers in Network Setup menu to avoid the conflict with other network servers.

Your DVR uses 2 port numbers and the default Port numbers are 9310 and 80. 9310 is for controlling the video and audio of Net Viewer, and 80 is for Web Viewer. You need to register both port numbers into the router as network servers. Please make sure that your router does not block those port numbers to/from the DVR with filter and firewall features.

The screenshot shows the 'Virtual Server' configuration page in a web interface. The left sidebar contains buttons for 'Virtual Server', 'Applications', 'Filters', 'Parental Control', 'Firewall', and 'DMZ'. The main panel has tabs for 'Home', 'Advanced', 'Tools', 'Status', and 'Help'. The 'Virtual Server' section is active, showing a description: 'Virtual Server is used to allow Internet users access to LAN services.' Below this, there are radio buttons for 'Enabled' (selected) and 'Disabled'. The configuration fields are: Name: 'DVR Video', Private IP: '192.168.0.110', Protocol Type: 'TCP', Private Port: '5000', and Public Port: '5000'. The Schedule is set to 'Always'. At the bottom, there is a 'Virtual Servers List' table with one entry: '9310'. To the right of the table are three icons (checkmark, X, plus) and buttons for 'Apply', 'Cancel', and 'Help'.

Virtual Servers List
9310

The screenshot shows the 'Virtual Server' configuration page in a web interface, similar to the one above. The configuration fields are: Name: 'DVR Control', Private IP: '192.168.0.110', Protocol Type: 'TCP', Private Port: '5001', and Public Port: '5001'. The Schedule is set to 'Always'. At the bottom, there is a 'Virtual Servers List' table with one entry: '80'. To the right of the table are three icons (checkmark, X, plus) and buttons for 'Apply', 'Cancel', and 'Help'.

Virtual Servers List
80

Chapter 3. Main Menu Setup

- **Go to Main Menu Window using:**

Front panel – Press **MENU**, Remote control – Press **MENU**, Mouse – Right click and click **MENU** icon.



- **To go to desired sub menu:**

Use direction keys and press **ENTER** (front panel or remote control)

- **To go to the higher menu:**

Front panel – Press **MENU**, Remote control – Press **MENU**, Mouse – Right click

Main Menu Tree

DISPLAY	RECORD	DEVICE	SYSTEM	SEARCH	BACKUP
Name: Set camera name and hide option	Policy: Select recording policy	HDD: HDD information and format	Language: Select the language	Calendar: Search/play recorded files by calendar	CD backup: Backup recorded files to a blank CD or DVD
Input: Camera color setup	Quality: Select recoding video quality	Sensor: Select the sensor type	Time: Setup the current time for DVR	Time: Search/play recorded files by time	USB backup: Backup recorded files to a USB memory device
Sequence: Select the camera for sequence display and set display time	Schedule: recoding schedule setup	Alarm: Alarm/Buzzer enable and disable setup	Network: Setup the network configuration for remote access	Protect: View/play protected recorded files	
VGA: Control the quality of VGA monitor display	Motion: Motion detection area and quality setup	PTZ: Select and setup PTZ camera type.	Password: Enable/Disable password access	Capture: View/backup captured still image files	
PIP: Select the camera for picture in picture display	Audio: Select audio input, output channel and volume		Signal: Select video signal type. NTSC/PAL		
OSD: On screen display setup	Warning: HDD overwriting, Disk failure warning setup		Config: Export/Import/Copy the configuration. factory reset. Firmware upgrade		
			Log: List and view all activities of DVR		

3.1. Display Setup

There are 6 sub menus under **Display setup**. To exit to main menu, press **MENU** (or right click on the mouse) key again.

3.1.1. Camera (Channel) Name and Display

1) NAME

Create your own name for each camera connected to DVR using on screen keyboard. (up to 8 digits).

If you skip this setup, channel # will be displayed on the screen. Press **MENU** or **▲** to save and exit.

2) BLANK [ON/OFF]

If you select "**ON**", the live video from the selected camera will not be displayed on the screen.

But the camera will still record normally as you originally have set.



3.1.2. Input (Input Video Quality Setup)



Adjust the **brightness/contrast/hue/color** for each camera connected to DVR. Press direction keys to change the value and press **MENU** or **▲** to save and exit.

3.1.3. Sequence (Sequence Display Feature Setup, a.k.a. Auto Display Feature)

Your DVR can display the each live video channel (or a group of channels) in sequence mode similar to slide show in PC. You can select the order (1st through up to 16th), camera# (or group of cameras), display time from this menu. Using the direction keys, select the value for **ORDER/VIEW/INTERVAL**.

You can activate sequence display mode (= a.k.a. auto display mode) during the DVR operation

3.1.4. VGA OUTPUT QUALITY SETUP



You can adjust the **BRIGHTNESS** and **CONTRAST** for your VGA monitor display. (if applicable). Use direction keys to change the value of brightness and contrast. Press **MENU** to save and exit.

3.1.5. PIP (Picture In Picture) SETUP



With **PIP** (Picture In Picture) feature, you can monitor multiple channels while focusing on a specific channel. You can select one main video channel for full screen display and (up to) three other channels as sub channels. Use **direction keys and ENTER** to change the channel number. Press **MENU** to save and exit.

MAIN : Select one channel for full screen display
SUB 1/2/3 : Select up to 3 channels for sub display
 * When you select **MAIN** and **SUB** cameras (channels) in 4CH DVR, the channel (camera) should not be duplicated.

3.1.6. OSD (On Screen Display) SETUP



You can configure each parameter for on-screen display using **direction keys** and **ENTER** button. To save and exit from this menu, press **MENU**.

1) CAMERA TITLE [NUMBER / NAME / OFF]

You can display a number or name of your camera on the screen. Select **OFF** not to display any.

2) BORDER COLOR [WHITE / BLACK / OFF]

Select the color of border line on multiple channel display mode. Choose from WHITE/BLACK/OFF. OFF will not display the colored border line.

3) DATE//TIME POSITION [TOP / BOTTOM / OFF]

Select the position of date/time displayed on the screen. **OFF** will not display current date/time on the live screen. But the DVR will record the video with time/date stamp.

4) RECORD ICON [ON / OFF]

If you select **"ON"**, RECORD ICON will be shown at the right top of the screen during recording.
OFF will hide the RECORD ICON during the recording.

5) PLAYBACK ICON [ON/OFF]

PLAYBACK ICON will be shown at the right top of the screen during playback of recorded video file.
Select **OFF** to hide this icon during the playback.

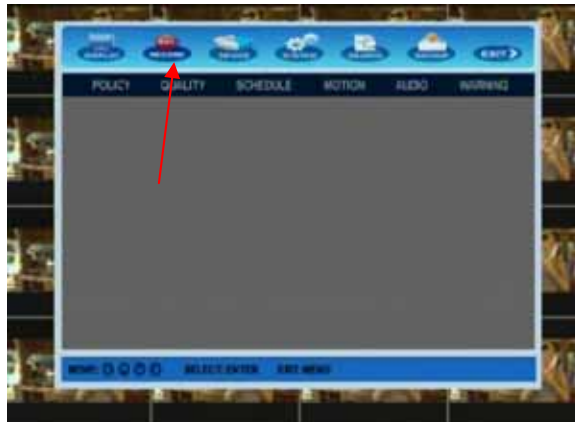
6) NETWORK ICON [ON / OFF]

If you select **"ON"**, NETWORK ICON will be displayed on the right top of the screen when DVR is connected by any network client(s). Select **OFF** to hide this icon during network (remote) access to your DVR.

3.2. Record Setup

With this menu, you can set all parameters (see the picture as below) related to recording for each cameras independently. Use **direction keys** and **ENTER** button to select the camera (channel) and change the setup value. Press **MENU** to save and exit.

Note: Please stop recording before this setup!



3.2.1. POLICY

DVR can record a live video by manual, schedule, event (motion detection and/or external sensor) and network user's command. You can set the recording policy for each camera independently. You can copy this setup to other cameras by pressing **"APPLY TO ALL CH"** button.



1) MANUAL (R) [ON / OFF]

ON: When this is **ON**, you can start manual recording by pressing a **REC** button (or click **REC** icon on mouse menu). Press **REC** key again to stop recording.

OFF: Manual recording is disabled on selected camera(s).

2) SCHEDULE (S) [ON / OFF]

ON: Schedule record enabled. DVR will record as your schedule setup on page 20.

OFF: Schedule record disabled on selected camera and DVR will not record by your schedule setup. This will override schedule setup menu.

3) MOTION (M) [OFF / 30SEC / 45SEC / 1MIN / 2MIN / 3MIN / ALL CH]

OFF: Motion recording disabled. DVR will not record even if it detects a motion.

To enable MOTION detection recording mode and set the recording time, please choose one of the followings;

30SEC/45SEC/1MIN/2MIN/3MIN: Motion recording enabled and recording time selected.

DVR will record a live video from selected camera(s) when motion is detected. DVR will keep recording for the selected time(ex; 30sec., 45sec.,...3min.). If DVR keeps detecting the motion, it will continuously record another selected time and will repeat this process until there is no motion detected.

ALL CH: Motion recording enabled with 30 seconds recording time. When selected camera (set to ALL CH) is triggered by the motion, DVR will start recording **ALL** cameras for 30 seconds.

After 30 seconds, if DVR still detects the motion, DVR will continuously record another 30 seconds until no motion is detected by the selected camera.

4) SENSOR (E) [OFF / 30SEC / 45SEC / 1MIN / 2MIN / 3MIN/ ALL CH]

To enable or disable the recording of each camera which are activated by external sensor.

All setup menu and features are same as MOTION (M) setup.

- If you select **ALL CH** at **MOTION** and/or **SENSOR for all cameras** connected to the DVR, **PRE-ALARM RECORDING** will be **enabled**. The DVR will keep 15 ~ 30 seconds of pre-recorded video frames occurred prior to event (MOTION and/or SENSOR) triggered DVR.

What is "Pre-Alarm Recording"?

Amount of buffered video that occurred prior to motion/sensor detection to be inserted at the beginning of the recorded sequence.

3.2.2. RECORD QUALITY

Setup the record quality parameters for each camera. (see picture as below)

Important: You must check **Remaining Available Speed** before you increase size or speed for certain channel(s). If remaining speed is not enough, you need to reduce the size or speed of other channels.

16CH model supports total speed of 480 FPS @ CIF 360x240 recording resolution.

8CH model supports total speed of 240 FPS @ CIF 360x240 recording resolution.

4CH models support total speed of 120 FPS @ CIF 360x240 recording resolution.



1) SIZE [720x480, 720x240 and 360x240]

There are three recording resolution modes you can choose from.

With 720x480 mode, DVR records video at full D1 resolution.

With 720x240 mode, DVR records video at half D1 resolution.

With 360x240 mode, DVR records video at CIF resolution.

2) SPEED (F/S) [30 / 15 / 10 / 7 / 6 / 5 / 4 / 3 / 2 / 1 / 0]

Select recording speed in frame/image per second.

Higher F/S requires more HDD spaces. Set lower F/S for more recording time.

Recommended speed is 30 F/S with CIF resolution.

If your remaining available speed is less than 240 (120) F/S for 16(8) CH DVR, the optional "All-In-One Channel Mode" for Net Viewer clients will be disabled. If you want to use this feature for Net Viewer, please make sure to have enough remaining available speed for All-In-One Channel Mode.

3) QUALITY [Normal / Good / Very Good / Excellent]

Select recording video quality. Higher video quality requires more HDD space.

4) GOP [15/30]

This number indicates the number of P-frames between I-Frame (=base frame of picture) and a following I-Frame.

15: DVR will record I-Frame per every 15 frames.

30: DVR will record I-Frame per every 30 frames.

Lower number (means more I-Frame) provides a **better picture quality** and smooth FF, REW and transmission through the network but requires **more HDD spaces**.

What is I-Frame?

A video compression method used by the MPEG standard. In a motion sequence, individual frames of pictures are grouped together (called a *group of pictures*, or *GOP*) and played back.

3.2.3. SCHEDULE RECORD SETUP

This menu allows you to create own **recording schedule and trigger type**. To enable this feature, schedule recording feature at **RECORD->POLICY->SCHEDULE** menu must be **"ON"**. Using direction keys and **ENTER** button, choose preferred record types (such as **ALWAYS, MOTION, SENSOR** or **MOT+SEN**) on the selected time and date.

Important: If you select **SENSOR**(or **MOTION**) recording on certain time and date, the DVR will not start recording even if **RECORD->POLICY->MOTION**(or **SENSOR**) is **ON**(30sec/45sec...ALL CH) and the camera is triggered by a motion(or a sensor) during that period. After that, it will go back to normal **MOTION**(or **SENSOR**) mode.

Manual recording is available all the time if RECORD->POLICY->MANUAL is "ON".



1) CAMERA [CH1 – CH4, CH8 or CH16]

Select your desired channel for schedule recording.

2) DATE [DAILY / SUN – SAT]

Select the desired date for schedule recording.

3) TIME

Move the cursor to desired time and press **ENTER** key to set it highlighted. Press **ENTER** again to change schedule recording option by color. You can set different recording schedule and type for each camera (channel) or you can apply current schedule setting to all other cameras by pressing **APPLY TO ALL CH** button.

3.2.4. MOTION RECORD SETUP



This menu allows you to set motion detection area for motion recording. To start a motion trigger recording, **RECORD-> POLICY->MOTION** must be **enabled**.

1) SENSITIVITY [LOW / NORMAL / HIGH / HIGHEST]

The higher level is more sensitive to detect motions.

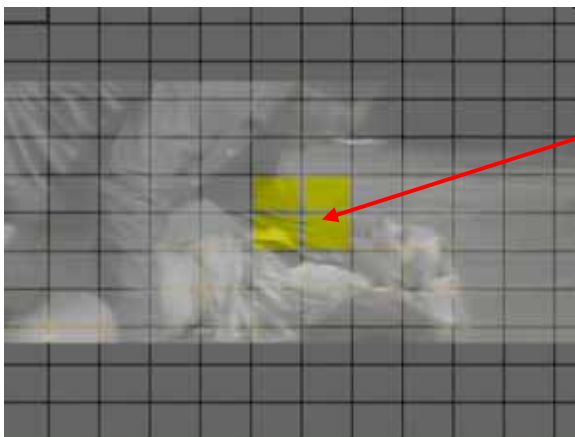
2) AREA [FULL / SETUP]

FULL : Motion will be detected from full viewing area.

SET : You can setup the detection area manually. To set up the area, go to **POSITION** menu.

3) POSITION

To set the motion detection area, go to desired area using direction keys and press **ENTER** key to select or to release. Once you select the area, it will remain the same unless you change it manually.



Important:

Motion detection area will be displayed in yellow on the screen.

3.2.5. AUDIO RECORD SETUP

1) **4CH / 8CH DVR**: You can record and retrieve one audio signal from camera(channel)# 1 for 4CH/8CH DVR model.

RECORD [ON / OFF]

To enable or disable an audio record mode.

VOLUME [1 – 8]

Higher number increase the volume. Audio is linked to video channel# 1.

2) **16CH DVR**: You can set **FOUR** audio input channels and **ONE** audio output channel with RECORD on/off and volume control



3.2.6 WARNING SETUP

You can enable/disable HDD overwriting feature and set warning method when HDD is full and overwriting is disabled.



1) HDD OVERWRITE [ON / OFF]

If you select **"ON"**, DVR will delete the old recorded file (from the oldest file) and will record the new video file when the HDD is full. If you select **"OFF"**, the DVR will stop recording when the HDD(s) is full.

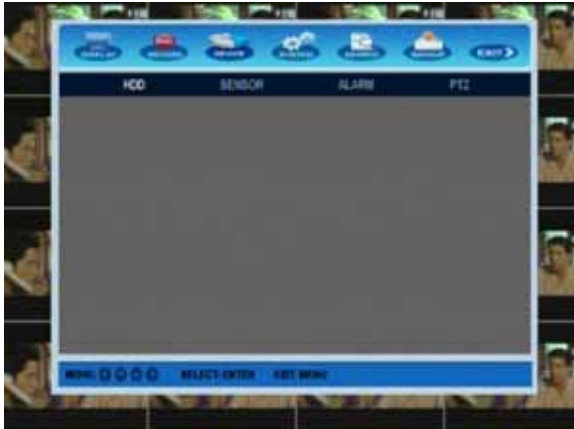
2) DISK WARNING [ON / OFF]

When HDD OVERWRITE is OFF and the HDD is full, the DVR will warn you to change the setup or replace the HDD. If DISK WARNING is **"ON"**, a Yellow **"F"** sign will be flashing on the screen. Then, enable the HDD overwrite feature or replace your HDD(s) immediately.

3) WARNING METHOD [OSD / BEEP+OSD]

Select a preferred DISK WARNING method.

3.3. DEVICE SETUP



With this menu, you can configure the peripherals in your DVR such as HDD, external sensors, alarm and PTZ cameras.

3.3.1. HDD INFORMATION/FORMAT



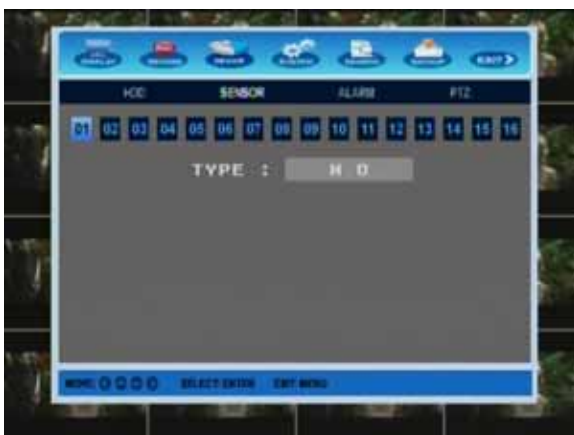
HDD-MASTER: Master HDD size and percentage of the used portion will be shown.

HDD-SLAVE: Slave HDD size and percentage of the used portion will be shown (if installed).

FORMAT: You can format each HDD if necessary. But you do not need to format HDD after new installation of HDD. After new installation of the HDD (DVR power must be "OFF"), DVR will automatically detect and start formatting the new HDD when power is "ON". DVR will reboot automatically after formatting.

Important: In case you have some damaged video/image during playback from existing HDD, it's time to format HDD using this menu.

3.3.2. SENSOR SETUP



Select the right type of your external sensors to be connected to DVR. There are 2 different types of sensors. (**N.O.**- Normal Open and **N.C.**- Normal Close) in the market. Please select the correct sensor type per each channel connected to DVR. Press **ENTER** button to change and select the sensor type.

1) CHANNEL [CH1 - CH16]

Select the **CHANNEL** which the sensor is connected to.

2) TYPE [N.O. / N.C.]

N.O. : "Normal mode-Open". Two sensor lines are not connected (=open) in the normal mode.

Sensor lines will be connected (=close) in the activation mode.

N.C. : "Normal mode-Close". Two sensor lines are connected (=close) in the normal mode.

Sensor lines will be disconnected (=open) in the activation mode.

Press **MENU** to save and exit.

3.3.3. ALARM SETUP

If you use external alarm devices and connect them to DVR, you should enable/disable **ALARM OUT** and **BUZZER** setup.



1) ALARM OUT [ON / OFF]

You can enable or disable the alarm signal output through external alarm device. It will be activated during event recording (MOTION and/or SENSOR) if it is "ON".

2) BUZZER [ON / OFF]

You can also enable or disable the internal buzzer. If you select "ON", the BUZZER will be activated when DVR warns external alarm device.

3.3.4. PTZ CONTROL SETUP

DVR supports Pan, Tilt, Zoom and Focus control for PTZF cameras or servers. It has RS485 port to connect to PTZ cameras and supports most industrial common protocols.



1) **TYPE** : Select correct protocol for each PTZ cameras connected to DVR.

2) **BPS** : Set the Baud Rate (BPS).

3) **ID** : You can create own ID number for each PTZ cameras (up to 16 cameras).

4) **SPEED** : Select the speed of camera movement (1-5). The higher number indicates faster speed.

3.4. SYSTEM SETUP

This menu helps you to configure DVR for basic operation. You can set the current time for your area, network parameters, and password for security purpose.

3.4.1. LANGUAGE



DVR supports several languages. You can select your favorite language using **ENTER** button and press **MENU** to save and exit.

3.4.2. DATE/TIME SETUP

You can setup the current date and time manually or automatically.

IMPORTANT: To setup the current time automatically, the DVR must be connected to internet. Make sure the NETWORK setup is completed and working properly. DVR receives the time information from time server located in a certain area of the internet.



1) AUTO TIME SET [ON / OFF]

To adjust time manually, please set Auto Time Set “OFF” and go to **DATE FORMAT**. If you want to set time automatically, select Auto Time Set “ON” and go to **TIME ZONE**.

2) TIME ZONE (when AUTO TIME SET is “ON”)

Select the correct time zone where DVR is located.

3) DATE FORMAT (when AUTO TIME SET is “OFF”)

Select display type of date. MM/DD/YYYY, DD/MM/YYYY or YYYY/MM/DD are available.

4) DATE (when AUTO TIME SET is “OFF”)

You can set or adjust current date.

5) TIME FORMAT: 12H / 24H

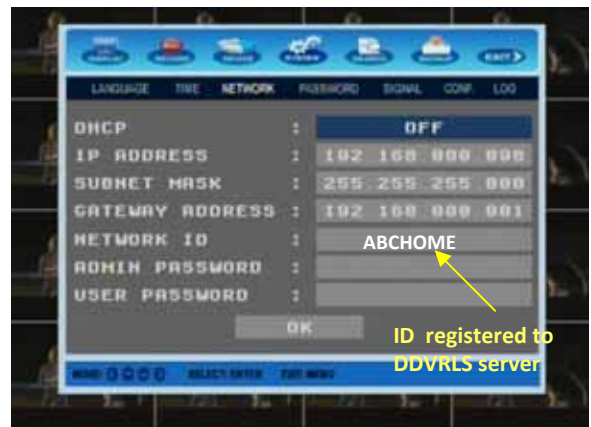
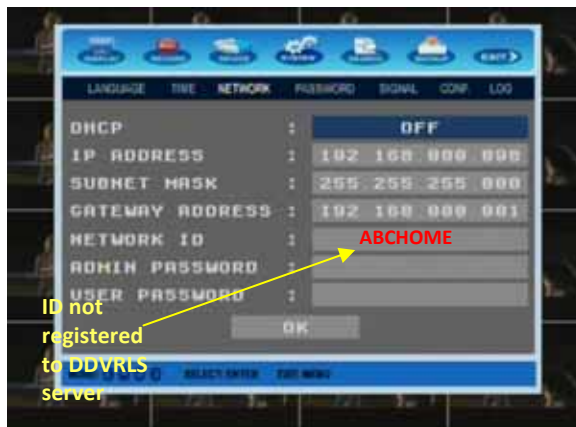
You can select 12 Hours or 24 Hours type for display on the screen.

6) H : M : S (when AUTO TIME SET is “OFF”): You can set or adjust your local time.

3.4.3. NETWORK SETUP

With this menu, you should complete your network setup to control and manage the DVR through the internet and/or local network just like you are next to the DVR. Before starting this setup, the DVR must be connected to the router by LAN cable and also make sure internet is working properly.

Important: If you are not familiar with network configuration and find any difficulties during this setup, please consult with your IT specialist or contact your distributor.



1) DHCP [ON/OFF]

When DHCP is “**OFF**”, you can manually assign an IP address for your DVR. If DHCP is set to “**ON**”, DVR can get available IP address from your router automatically by pressing **OK** button at the bottom of the menu screen. It is recommended to set DHCP “OFF” to save correct router port forwarding to your DVR IP address.

2) IP ADDRESS [000.000.000.000] (factory default : 192.168.000.008)

Press “**ENTER**” key and use direction keys to set IP address. This IP address should be the same as the one you used for port forwarding from your router.

Static IP address users: Use one of the available IP addresses, subnet mask and gateway address that you received from your ISP.

3) SUBNET MASK [000.000.000.000] (factory default : 255.255.255.000)

Press “**ENTER**” key and use direction keys to set SUBNET MASK. 255.255.255 means that the first 3 groups of IP and Gateway address are same. If yours are not in this structure, please consult with a network administrator to get the correct value for Subnet Mask.

Static IP address users: Enter Subnet Mask provided by your ISP.

4) GATEWAY ADDRESS : 000.000.000.000 (factory default : 192.168.000.001)

Press “**ENTER**” key and use direction keys to set GATEWAY ADDRESS. It should be the LAN address of your router.

Static IP address users: Enter Gateway Address provided by your ISP.

5) NETWORK ID [Up to 8 letters]

Now you must **create** and **register** your **own network ID**. Press **ENTER** key and use direction keys to create your own ID and press **OK** button. Press **YES** to register your ID to DDVRLS Server. If your ID can not be registered, please change it and try again. It might be taken some other users already.

Unregistered network ID will be displayed in RED and it will be changed to WHITE when it is registered to DDVRLS server. Unregistered ID still can be used in you intranet. But you must register your network ID to use NetViewer and Webviewer through the internet.

Important: Your **NETWORK ID** registered to DDVRLS server in this section will be required when you remotely log in to your DVR through the network via **Net Viewer** or **Web Viewer** site.

6) ADMIN PASSWORD [Up to 8 letters]

Press **ENTER** key and use **direction keys** to create ADMIN PASSWORD and press **OK** button. If you log in to NetViewer or Webviewer with ADMIN PASSWORD, you will be able to **monitor and fully control** the DVR through the network.

7) USER PASSWORD [Up to 8 letters]

Press **ENTER** and use **direction keys** to create USER PASSWORD. Log in to Net viewer or Web viewer with USER PASSWORD will have only limited access such as **monitoring** the DVR through the network.

Note

You can check Mac. Address, Server Domain, Network Ports, and CH17(or 9)* resolution (16/8CH DVR model only). Press 6 on remote controller at **NETWORK** setup mode. With this menu, you can change the maximum transmission bit rate using **BANDWIDTH** menu. You can limit the network bandwidth for DVR if you use other network enabled equipments in the same network. This menu is for professional network administrators only and we do not recommend general DVR users to change any value on this menu. If you are using mouse, **click** the head line of **NETWORK** from the menu bars.



* **All-In-One Channel** (CH17(16CH DVR) / CH9(8CH DVR)) is a special feature for Net Viewer clients only. CH17/9(16CH/8CH DVR) shows all cameras (channels) connected to DVR on selected position on the screen. 4 different resolutions(720x480, 720x240, 360x240, and 180x120) are available to support more video frames at poor network condition.

Full-Screen-Mode sends exactly same videos which is displayed on your monitor connected to DVR video output. This function is available with NVR software coming with your DVR, and you can get more information at Chapter 7 NVR.

DISABLED Message : You'll see this message in CH17 Resolution when the Record Quality Setup exceeds 120 FPS/8CH or 240 FPS/16CH. With this message, you can not change the resolution any more. To enable All-In-One Channels, changing Record Quality Setup is required.

3.4.4. PASSWORD SETUP



There are 2 different levels of passwords. With **ADMIN** password, you can access all information of DVR and fully control the system. **USER** password allows you to access to the limited information and no authority to change the system configuration of DVR.

1) ENABLE [ON / OFF]

To enable or disable System Lock (password) function. If you set it **ON**, you need to enter password to use **MENU** feature.

2) ADMIN [combination of 4 numbers]

Set your ADMIN password. Press ENTER and use direction keys to select desired numbers.

3) USER 1 - USER 5 [combination of 4 numbers]

User 1 through 5 are in the same security level. Set your USER password. Press ENTER and use direction keys to select desired numbers.

3.4.5. VIDEO SIGNAL TYPE [NTSC / PAL]



Select your video signal format type, **NTSC** or **PAL**. NTSC is the video system or standard used in North America and most of South America. PAL is the predominant video system or standard mostly used Europe and Asia. Press **ENTER** key to select the type and press **OK** button.

3.4.6. CONFIGURATION SETUP



- 1) **Export Configuration** : Export current DVR configuration to USB memory stick. You can import this file from other DVR(s) and clone the configuration.
- 2) **Import Configuration** : Import and copy the DVR configuration file from a USB memory stick.
- 3) **Copy Configuration** : Copy sequence time recording channel/quality/schedule and motion setup from certain camera (channel) to all or selected channels.
- 4) **Factory Reset [YES / NO]** : You can restore all configuration to factory default values.
(Except current time and network setup configuration)
- 5) **Firmware Upgrade** : Upgrade DVR firmware with USB memory stick at local USB port

How to upgrade firmware with USB memory stick :

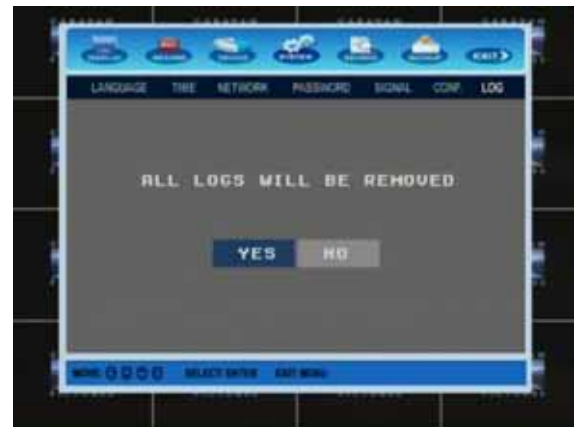
- Check you current firmware version before starting upgrade. Press **INFO** key to confirm the version.
- Have a newer version of firmware software in a USB memory stick
- Insert a USB memory stick to the USB port on DVR front panel
- Press **Menu** button
- Go to **SYSTEM → CONFIG. → SOFTWARE UPGRADE**
- Available firmware software will be shown on the screen. Select right firmware file
- Click **UPDATE**
- DVR will be rebooted automatically after update.

3.4.7. LOG



Your DVR keeps over 64,000 log and you can review the details of each log. Click **LOG** button, then you will see all event log from the latest one.

There are 5 groups of logs by incidents. They are **menu setup change, network connection, event recording (by motion or external sensor), DVR power on/off and record start/stop (by manual, schedule or network driven)**. To see detailed information of each log, press **ENTER** or **click** it with a mouse. To remove all list, press **RESET** button shown on the bottom of the screen.



PREV: To retrieve previous log
RESET: Delete all current log

NEXT: To retrieve next log
EXIT: Exit the current menu

For a faster search, you can sort the logs by incident. Press **MENU**(Menu Setup change), **NET** (Network connection) **EVT** (Motion, External sensor recording), **PWR** (Power on, off) and **REC** (Manual, Schedule, Network driven recording) buttons to narrow down your search.

3.5. SEARCH and PLAYBACK

One of the benefit of Pentaplex DVR is that it allows user to enter search mode while DVR is in other operation like recording. You do not need to stop recording to search and playback recorded files. There are 2 Search modes, **Calendar** Search and **Date/Time** Search. Press **SEARCH** button on the front panel or **ALL/TIME/LIST SEARCH** button on the remote controller. **Select your preferred search method from CALENDAR/TIME/PROTECT/CAPTURE and press ENTER button.**

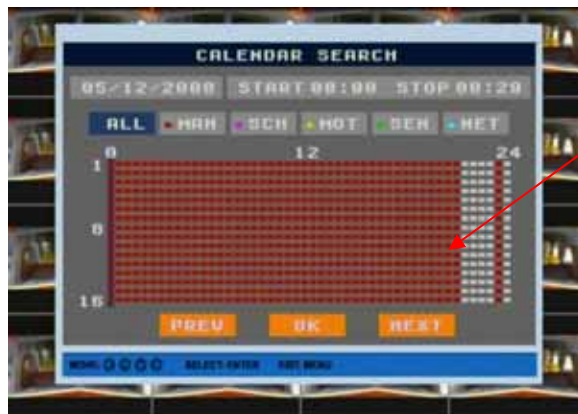
You can stop playback at any time by pressing “**STOP**” button. You can **FF**, **REW** and **PAUSE** during the playback. If you installed 2 HDDs, DVR will show you all events and Date/Time for both Master and Slave on a single screen.

3.5.1. Calendar Search



Select the date that you want to see the events. Use direction keys to change the month and select the date. Press **ENTER** button to see recorded files on that date.

Note: When there is recorded files, date will be displayed in **RED**. Date in white indicates that there is no recorded files.



Colored time blocks indicate that there is (are) a (some) recorded file(s). Each color represents the trigger type of recorded file. (e.g. by schedule, motion, sensors or network client)

3.5.2. Time Search



You can designate a specific date and time to retrieve recorded video files. Select date and time in between first and last. **If there is no recorded files at your designated time, DVR will display the recorded video file closest to that time.**

FIRST: Date and time of the oldest recorded file in your HDD.

LAST: Date and time of the most recent recorded file in your HDD.

3.5.3. Protected File Search



How to retrieve Protected files

Any recorded files(video/audio/captured images) you set as a protected file will be stored under this list and will no longer available by regular CALENDAR/TIME search. You can search, playback, backup, remove from this menu.

Click **SEARCH -> PROTECT**.

You will see the file list with recording start time, recording trigger type and file location (master or slave HDD)

Select a file and click **PLAY** button. **Channel(camera) name** will be displayed in **BLUE** to notify you that this is a protected video file (non protected file will show channel(camera) name in yellow during the playback.)

3.5.4 Captured Image File Search



How to retrieve captured image files

Click **SEARCH -> CAPTURE**.

You will see the list of captured image files. It will show you captured time and a source channel (camera) number.

To open the image file, go to the file using direction keys and press ENTER to select the file. Then click **VIEW** button.

To stop viewing, press **STOP** button.

3.6. BACKUP SETUP

You can copy recorded Video/Audio files from DVR(HDD) to CD/DVD or USB memory stick. Backup process will not prevent DVR from any other operation. You can select a backup file type either AVI or MPEG4. If you need a file with **authentication**, select **MPEG4** file type. Otherwise, select **AVI** file type for an easy playback with a Microsoft Media Player or any other popular media players.

1. Insert a blank CD/DVD into CD/DVD-burner or insert USB memory stick to USB port on front panel.
2. Select **CD/DVD backup** or **USB Backup**
3. Set the **STARTING** and **ENDING** time. Select the camera(channel)# for backup.
4. Select the file type. **AVI** or **MPEG4**
5. Press **OK** button and you will see the total files size and available space of CD or USB.
6. Press **START** for backup. You will see Backup icon on the left-top of the screen until it completes Backup.

Error message #1 : If your selected data size exceeds the current available storage space, an error message : **Data size is too big for CD/DVD/USB** will be shown.

Error message #2 : If starting/ending time is not set correctly or there are no recorded files during selected time or camera(channel), you'll see this error message : **Not Available**.

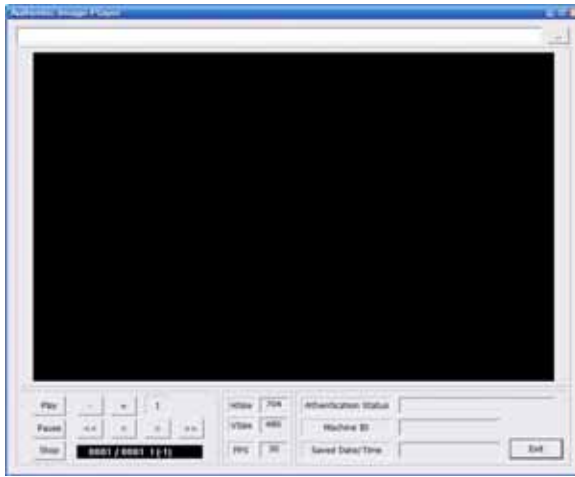


Important: Backup time may take longer than normal if the DVR is in an operation of recording, playback and/or network transmission

If your PC does not have Windows Media Player 10 or higher, you can download it.
Go to <http://www.microsoft.com/windows/windowsmedia/player/10/default.aspx>

If your Windows Media Player 10 can not display video properly, run **xvid.exe** file to your PC from the Installation CD.

MPEG4 format player - Authentic Image Player



You must use Authentic Image Player (install CD provided with the DVR) to retrieve MPEG4 backup files. It retrieves only authentic files and will display messages indicating that the image is not authenticated if you try to playback with non authentic files.

AIP (Authentic Image Player) will be automatically installed when you backup files in MPEG4 format. So you do not have to install this player separately. You can just bring your CD/DVD or USB memory stick to any PC and playback your MPEG4 backup files.



You can choose an image file to playback from directory at top of the player screen.

If the image is certified, it will be played at original recording speed automatically.

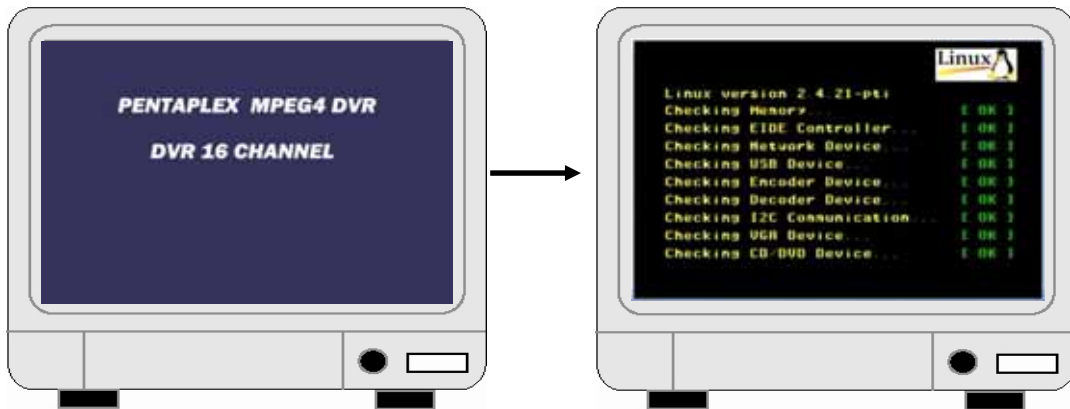
You can adjust playback speed with different frame rate assigning your own number in FPS field. To apply new speed, click Set button.

You can enforce multiple speed of FF/REW, frame advance and pause during the playback.

Chapter 4. General Operation

4.1. Getting Started

IMPORTANT: Turn DVR power off your before connecting all the necessary devices to DVR.



Turn the DVR power on. If you see any failure message during system diagnostics, please contact the supplier.

You can check system information including IP address of DVR, current available hard drives, CD/DVD burner, USB device as well as firmware version when you press **INFO** button. To exit to normal display, press **INFO** button again.



4.2. Controlling the DVR

DVR can be controlled by **front panel keypads**, a **remote control** unit and a **USB mouse**. To operate the DVR with a **mouse**, please **right-click** and **main menu window** will be popped up. Use left button to select a sub menu or change the setting values. If you want to display a full size screen of certain channel on the screen, click the left button on certain channel picture. To return to multi screen mode, click left button again on any position of the screen.



Main Menu Window for a mouse control



Click the **MENU** icon for parameter setup. Then the setup menu window will pop up as below picture.
To use a remote control unit or front panel keypads, simply press **MENU** key to go to setup menu window directly.



Setup Menu Window

4.3. Live View

4.3.1. Multi Channel Display

Press **MULTI** key or **direction keys (up and down)**. You can display 1/4/8/16 live cameras(channels) on one screen. Select preferred display type by pressing **MULTI** key or **direction keys(up and down)** repeatedly.

After selecting a preferred display type (1/4/8/16CH), you can use **direction keys (left and right)** to change the camera (channel) or a group of cameras (channels).

Full screen mode : CH1 → CH2 → CH3 → → CH16)

4CH Display mode : Group1 (CH1,2,3,4) → Group2 (CH5,6,7,8) → → Group4 (CH13,14,15,16)

8CH Display mode : Group1 (CH1,2,3,4,5,6,7,8) → Group2 (CH9,10,11,12,13,14,15,16)



[16 CH display Mode]



[8 CH display Mode]



[4 CH display Mode]



[1 CH display Mode]

4.3.2. PIP Display Mode

To activate **PIP Display Mode**, press **PIP** button. Main channel is displayed on the full monitor screen at the same time as two or three other channels are displayed in inset windows. You can change 2 PIP/ 3 PIP mode with 4 different display positions by pressing **direction keys (up and down)** button repeatedly. To exit from this mode, press **PIP**. To change 2 PIP/3 PIP mode and display position with a mouse, right-click and press **MULTI** icon and select your favorite PIP display.



4.3.3. Auto Display Mode (=Sequence Display Mode)

If you activate **Auto Display Mode(Sequence Display Mode)**, live channels(cameras) will be displayed on the monitor screen in accordance with your sequence setup. To change the camera (channel), viewing time and sequence, please go to **MENU -> DISPLAY -> SEQUENCE** setup(see page 22. sequence set up).

When Auto Display Mode is activated, an auto mode icon will be shown on the upper left corner of the screen until you stop this mode. To activate this mode, press **"AUTO"** button on the **remote controller** or press **SEQUENCE** key on **DVR front panel**. To exit from this mode, press the same button again.

4.3.4. Pan/ Tilt/ Zoom/ Focus Camera Control

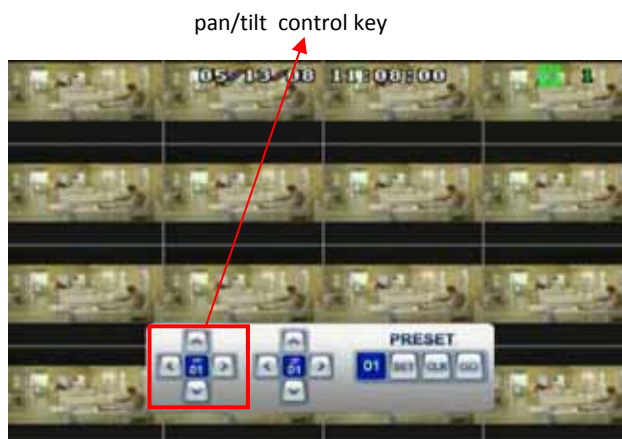
Controlling an external PTZ camera connected to DVR.

1. To use this feature, press **P/T/Z/F** button on the **front panel** or **remote control unit**.

If you use mouse, please click **PTZF** icon from the **main menu window**.

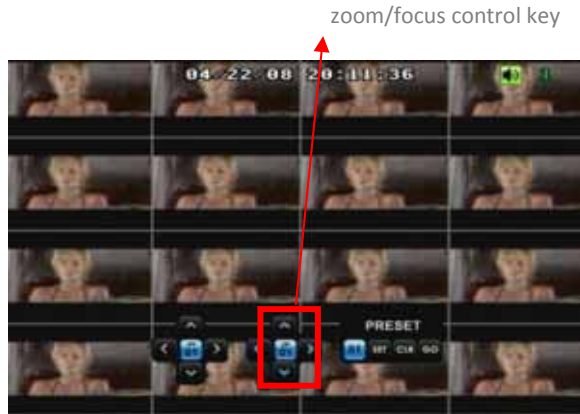
2. Press **ENTER** to select the sub mode, **PT control**, **ZF control** or **PRESET** for your PTZ camera control.
Or just click the sub mode icon with your mouse.
3. The number shown on the center of PT and ZF icon is the channel number of PTZ camera you set in the PTZ setup menu. Please check **MENU -> DEVICE -> PTZ** menu. (see PTZ setup on page 33.)
4. You can save your favorite PT and ZF parameters using **PRESET** feature. You can store up to 10 presets per PTZ camera. Select the **Preset number** and **SET** button using **ENTER** button and **direction keys**.
Or use the mouse and click on the preferred setup icon.
6. You can clear preset parameters by pressing **CLR** button.
7. You can go to preset value by pressing **GO** button.

4.3.4.1. Pan / Tilt control



1. Select your desired channel by pressing the number from remote control unit or click PT icon on the screen using left button on the mouse.
2. Control the camera with the arrow buttons (Up/ Down/ Right/ Left) of remote control unit or arrow icon on the screen using left button of mouse.

4.3.4.2. Zoom/ Focus Function



1. Select your desired channel#. Press the number from remote control unit or click PT on the screen using left button on the mouse.
2. Control the camera with direction keys (Up/ Down/ Right/ Left) of remote control unit or arrow icon on the screen using Left button of mouse.

4.3.4.3. PRESET Function



1. Select your desired channel on the screen.
2. Set the preferred viewing area of camera with PTZF control button.
3. Go to **PRESET** control mode and select number from 1 to 10.
4. Press **SET** button to save setting location or press Clear to delete setting location.
5. Press **GO** button to move camera to the desired preset location.

IMPORTANT: PRESET requires admin password when the system is locked by password enabled.

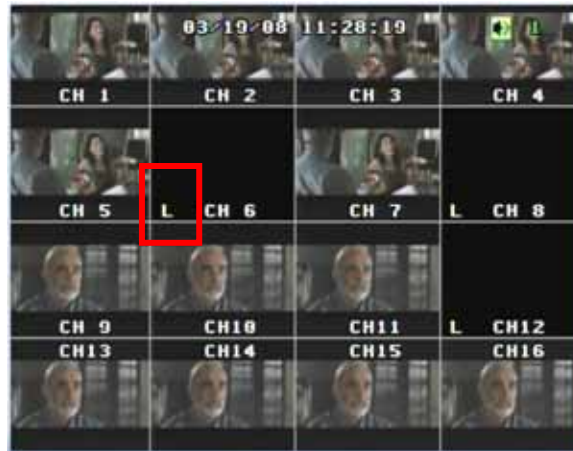
4.3.5. Digital Zoom Display Mode

You can zoom a certain area from the live mode up to two time.

1. Select the desired channel.
2. Press a **ZOOM** button, then you will see 2x2 enlarged video on the screen.
3. Select the viewing area using direction keys or on screen direction keys.
4. To exit and go to normal display mode, press **ZOOM** button again.

4.3.6. Video Loss (L)

If there is no video signal, you will see 'L' (indicating video loss) displayed on that channel. Please check video cables and connection of each camera to confirm the signal loss.



4.4. Recording : (R) (S) (M) (E) (N)



1 Manual Recording Icon: If DVR starts recording by manual trigger, recording indication icon(R) will be displayed on the left top of the screen. To stop recording, press **RECORD** button again.

2 Audio Icon: This audio icon (see picture above) is not displayed if you set MUTE on.



3 Event Recording Icon: When DVR starts recording by events, the recording icon will be **Schedule Recording(S)**, **Motion Recording(M)**, **External Sensor driven Recording(E)**, and **NVR driven recording(N)** activated. Recording will be stopped when the event is terminated.

4.5. Playback (P) and Track Mode (Pause / FF/ REW / Frame Advance)



- 1 **Playback icon:** To playback any recorded files, press **PB** button, 'P' icon will be displayed on the right-top of the screen during the playback. Recorded time will be displayed in yellow under current time. To stop playback and go to live view, press "STOP" button.
- 2 **Playback Audio Icon:** It indicates an audio for the file being playback.
- 3 You can FF, REW and pause during the playback mode. **FF** and **REW** have 4 different speeds.
- 4 During the playback, you can watch pictures in **frame by frame mode**. Press **PAUSE** button and press **FF** or **REW** in **pause mode**. Then you will watch next or previous I-Frame video still image.



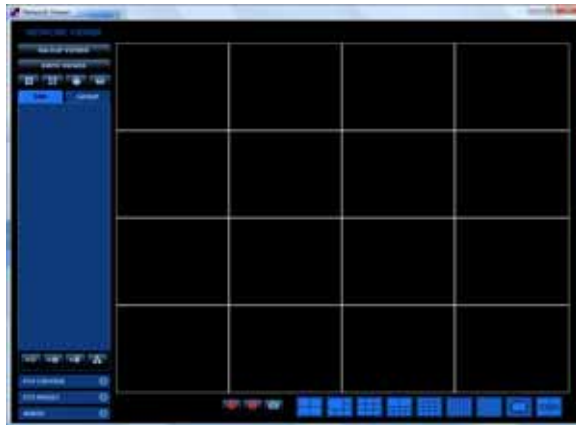
To watch a certain channel in full screen mode, press a channel number from front keypads or a remote controller. To go back to the original playback mode, press the current channel number again. If you use a mouse, click the certain channel screen to display in full screen. And click the screen again to go back to original playback mode.

4.6. Network - Remote Monitoring and Control

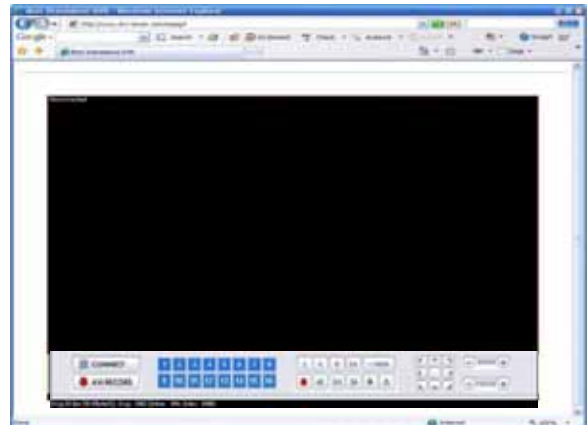


You can connect to your DVR from anywhere through the internet. To monitor and control the DVR from remote sites, you must install **Net Viewer** program into your PC. **Net Viewer** program is our own CMS (Central Monitoring System) program which will provide the user a full access to multiple DVRs through the network. Net Viewer program is included in the install CD. You can also connect to your DVR using a web **browser (IE)** but there are some limited features. Using IE, you can connect to our **Web Viewer** site to connect to your DVR. **Net Viewer** program supports multi DVRs and multi clients at the same time. When any remote users (clients) connect to your DVR, **network connection icon** will displayed on the screen.

For detail operations of Net Viewer and Web Viewer, please see **Chapter 7 and 8.**



[Net Viewer]



[Web Viewer]

Chapter 5. Protect Video/Audio File

5.1. Protect Registration

You can protect important recorded files from HDD overwriting. You can register them to the protect list.



How to protect some important recorded files?

During the playback of recorded file, you can register current retrieving file to **PROTECT LIST**.

Using a **remote controller**, press **ZOOM** button during the playback. Press **YES** on the **REGISTER PROTECT LIST** window.

When using a mouse, right click to pop **main menu window**. Click **Lock** icon. Click **YES** on the **REGISTER PROTECT LIST** window.

IMPORTANT:

1. You can register up to **5 files per each HDD** in your DVR in the PROTECT LIST.
2. You can not register the file in the middle of recording. You must finish recording to register this file to PROTECT LIST.
2. **Lock Button** has two functions. During playback, it is a protect button. In other operation modes, it is a system lock button.



5.2. Playback and Remove Protected File

You can manages protected files separately from regular recorded files (clips) stored in HDD.



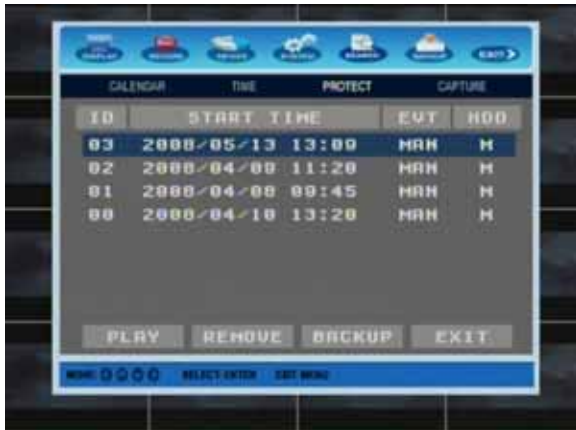
How to search and playback protected files?

Press **SEARCH** button and select **PROTECT LIST**. It will show you start time, recording trigger type and HDD location keeps that files.

Press **ENTER** to select the file, and press **PLAY** button to playback.

Using a mouse, click **SEARCH ->PROTECT**.

During the playback, the channel number/name will be displayed in **blue** instead of yellow for normal recorded file playback.



How to remove protected files?

If there are 5 protected files in your master (or slave) HDD and you try to protect new video/audio files during Playback, you will see warning message, "PROTECT LIST FULL ON MASTER (or SLAVE) HDD" on the screen.

To remove old files from PROTECT LIST, go to **PROTECT LIST** menu. Select file(s) you want to remove.

Click **REMOVE** and **YES** to remove it permanently.

IMPORTANT: If you click **YES**, the file will be erased from HDD permanently and will not be recovered.

5.3. Backup Protected File

Protected files are very important and valuable evidence for any incidents. You can make a copy of protected files into CD/DVD or USB memory same as ordinary backup function of your DVR.



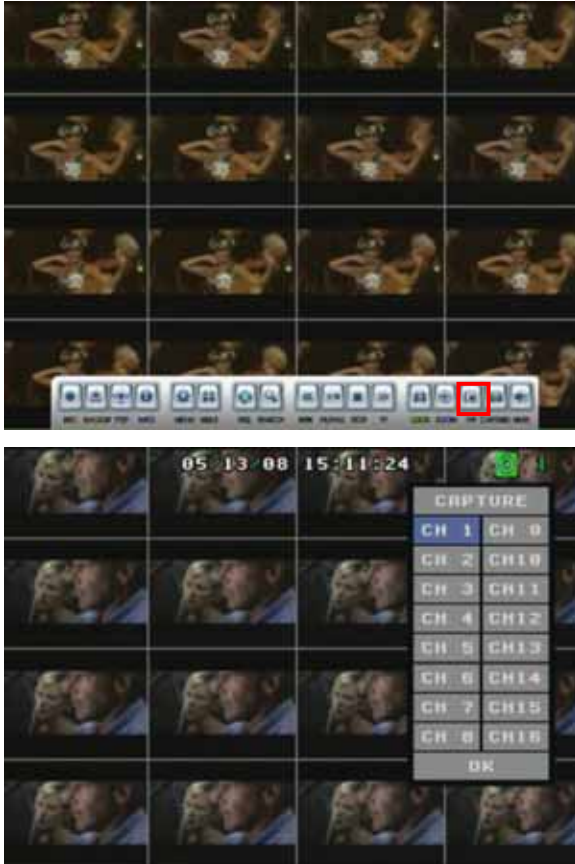
How to backup protected files?

- 1) Go to **PROTECT LIST** menu.
- 2) Select a file to backup
- 3) Press **BACKUP** button and choose CD or USB backup.
- 4) Insert a CD/DVD or USB memory stick to USB port
- 5) You **DO NOT** have to select the starting/ending time for backup. It is automatically detected when you select a file for a backup.
- 6) Select the **channel(s)**, **format type**, and press **OK**. Then you will see the file size for to be backup.
- 7) To start backup, click **START** button.

Chapter 6. Capture Video Still Image

6.1. Still Image Capture

You can capture and save up to 100 still images and retrieve, delete or backup them easily. You can capture videos instantly using mouse, remote control unit or front panel keypads.



How to capture video images?

During playback mode (including FF, REW and Pause) or live display, you can capture current video image using a mouse, remote control unit or front keypads.

Mouse : Click **Capture** (Camera icon) button at the main menu window

Remote controller : Press **ENTER** button

Front keypads : Press **ENTER** button

When you click capture button, DVR stores all channels immediately into temporal buffer.

Then you will see a channel select menu to select channels to save into HDD.

Using **direction keys** and **ENTER** button, you can designate channels to save.

You can select multiple channels to save.

After selecting all desirable channels, press **OK** button to store pictures into HDD.

6.2. Retrieve and View Captured Image

Your DVR keeps and manages captured files separately from other video files stored in HDD. You can retrieve them at any time unless you remove them from CAPTURE LIST. You can store up to 100 captured images in master HDD.



How to retrieve captured files?

When you capture video images, you should go to CAPTURE LIST to search, view, backup and erase captured images.

Click **SEARCH** button and select **CAPTURE LIST**.

Then you will see captured file list. It will show you captured time and channel information.



How to view captured images?

Press **SEARCH -> CAPTURE**

Select a file and press **VIEW** button.

Then you can retrieve selected image. To identify this image is from CAPTURE LIST, **CAPTURED** message will be displayed on left-bottom of the screen.

Also you will see the captured time and channel Information displayed in yellow on the screen.



6.3. Remove Captured Image

You can save up to **100 captured images** into our HDD. You should erase some images to save new captured images.



How to remove captured image files?

IMPORTANT: If there are 100 captured images in your HDD and you try to capture new video images, the oldest image will be erased automatically to save new picture. To protect your captured images, please maintain your captured images not to exceed 100 images.

To erase image files from CAPTURE LIST, press **SEARCH -> CAPTURE**. Select a file to remove. Press **REMOVE** button at the bottom.

6.4. Backup Captured Image

Captured image files are very important and a valuable evidence for any incidents. You can make a copy of captured files into a USB memory stick.



How to backup captured image files?

Press **SEARCH** -> **CAPTURE LIST** menu. **Select a file** to backup from captured file list.

Insert a USB memory stick to a USB port. Press **BACKUP** button.

When the backup is completed, **COPY DONE** message will be appeared on the screen.

Chapter 7. NVR (NetViewer)

7.1. Getting Started

7.1.1. System Requirement

- Pentium 4 or above recommended
- O/S : Microsoft Windows XP or Vista
- 1GB RAM (16CH Display), 2G (32CH Display) & 4G (64CH display) or above recommended
- Super VGA 128M or above recommended
- 10/100 Base T network card for LAN operation

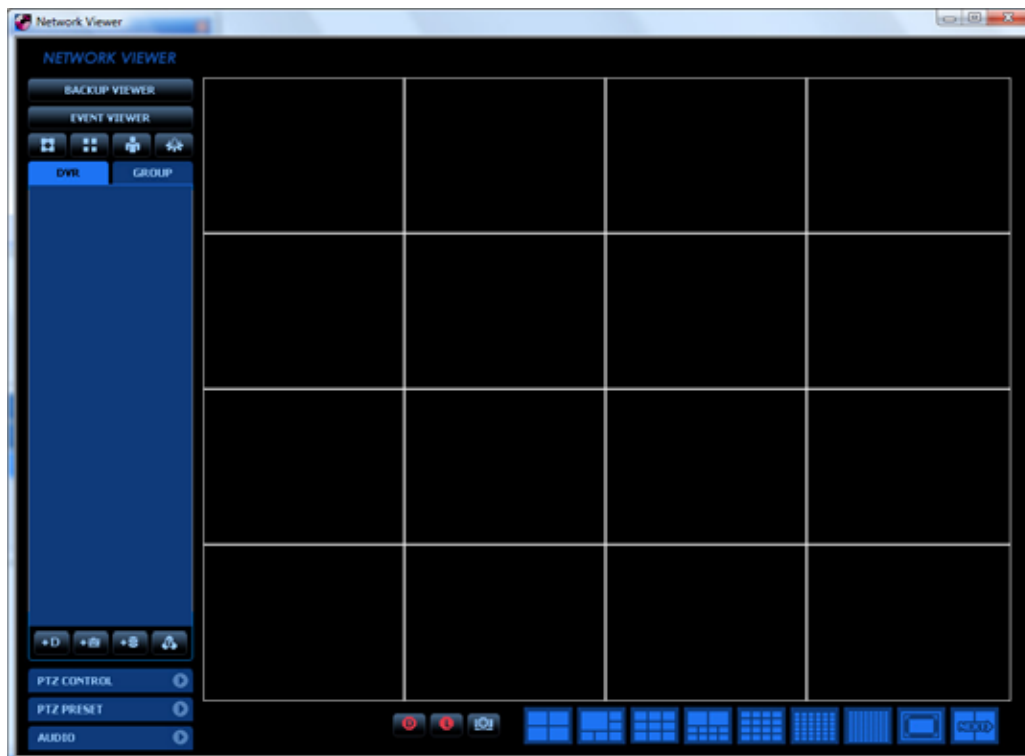
7.1.2. Network Environment

	Client PC	DVR
Minimum	More than 128Kbps	More than 128 Kbps
Recommend	More than 3 Mbps	More than 3 Mbps

7.1.3. Net Viewer Program Installation

To start network viewer installation,

1. Turn your PC ON.
2. Insert installation CD into the CD-ROM drive.
3. Execute Setup. exe, so it installs Net Viewer automatically and generates Icon on the desk top screen.
4. Click the Net Viewer Icon, then network viewer will appear on the screen as below.



7.2. Buttons and Functions



1. **Date / Time** : Displays current date and time of DVR.

2. **CH Status** : DVR (green) and client PC (orange) will be shown in different colors.

DVR Recording  **Local record** 

3. **Backup Viewer** : A control key for recording and playback for a DVR or client PC.

4. **Event Viewer** : A control key for event log for a DVR or client PC.

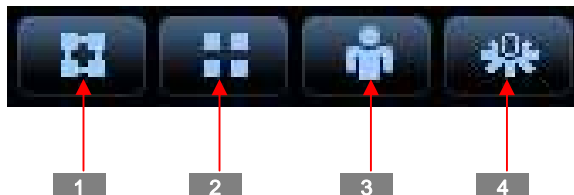
5. **Connect / Disconnect / Local Setup / Device Setup** :

1 **Connect key**: Connect to DVR cameras.

2 **Disconnect key** : Disconnect from cameras registered on current channel group.

3 **Local Setup key** : Manage recording policy, schedule setup, and recording directory for a client PC.

4 **Device Setup key**: Update/revise your DVR configurations.



6. **DVR** : To navigate DVR list and cameras.

7. **Group** : To navigate group list and cameras.

8. **Add DVR** : Menu button for configuration of connection for DVRs.

9. **Add IP Cameras** : Menu button for configuration of IP Cameras (Not Available at this time).

10. **Add Video Server** : Menu button for configuration of connection for Video Server (Not Available for MPEG4 DVR model)
11. **Save Group** : You can combine any cameras from same or different DVRs into a certain group.
12. **PTZF Control & Preset** : You can control PTZ cameras. After controlling PTZ cameras and find the best position, press **Preset** key to save the setting. Select a number from 1 to 10 with spin button. Press **Set** button to save it to preset location you selected. You can go back to that setting anytime when you press **Go** button and it will take you to the preset location of the camera.
13. **Audio** : You can adjust speaker and microphone volume.
14. **DVR Record** : Control button for remote recording for DVR(s).
15. **Local record** : Control button for local recording for client PC.
16. **Capture** : Capture video still images.
17. **Multi Screen Display** : Displays in 4, 6, 8, 9,16,32, 64, and a full screen mode.

Note

You must complete network setup before using Net Viewer program.

1. During the network setup, you must create and register your own network ID, and password for each DVR. This setup is required only once for the first connection. If you will use more than one DVR through the network, you should assign a different port number (router port forwarding) to each DVR. Also You should create and register different network ID for each DVR.
2. **ID and password you set up for each DVR will be used when you connect to that DVR using NetViewer or WebViewer.**
4. If you want to use static IP address for DVR, please type DVR IP address into IP address field manually.

Note

Your DVR supports both Each-Camera-Mode and Full-Screen-Mode in network transmission.

1. Each-Camera-Mode? (for all remote clients)

When DVR transmits videos to client PC (Net Viewer/Web Viewer users), it transmits each channel independently. In other words, For example, if you register 8 Cameras (CH1-CH8) under one DVR folder, 8 cameras will send their own videos separately based on their recording conditions which are set in DVR recording setup menu. The benefit of Each-Camera-Mode is that you can handle each channel(camera) independently. However, it may require high network bandwidth.

2. All-In-one Channel Mode? (for Net Viewer users with 8CH/16CH DVR only)

If you register CH9 (for 8CH DVR) or CH17 (for 16CH DVR) as a Server (Camera) under a certain Folder (DVR), DVR transmits All-In-One Screen to your PC through CH9 or CH17. You can enable only CH9 or CH17 to see all cameras in one channel. It is a good feature for Net Viewer users to watch all camera when the internet traffic is heavy.

Important : If your remaining available speed is less than 240 (120) F/S for 16(8) CH DVR, optional "All-In-One Channel Mode" for Net Viewer clients will be disabled. If you want to use this optional feature for Net Viewer, please make sure to have enough remaining available speed for All-In-One Channel Mode.

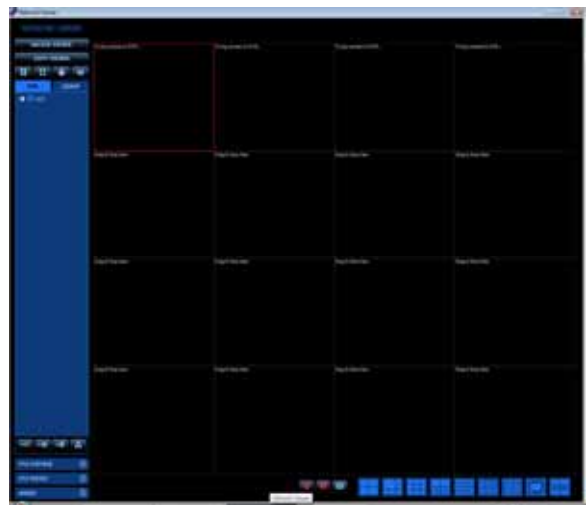
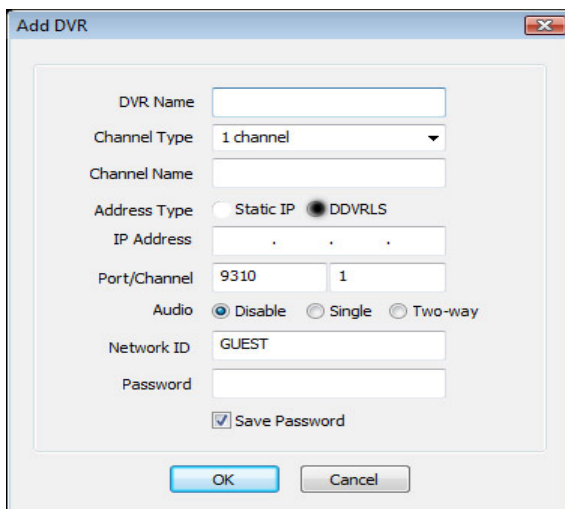
7.3. Registering DVR(s) and Cameras (Channels)

Before connecting to DVR(s) using Net Viewer program, you must register DVR(s) and cameras (channels) to NetViewer program.

First, click **+D** button to register DVR(s) and cameras (channels), you will see pop-up window as below. Follow the step 3.1. to 3.3.

1) How to register your DVR(s) and cameras (channels) to NetViewer program?

Click **ADD DVR** icon **+D** , then **Add Device window** will be pop up. Create **DVR name** and fill out other information. To save this information and register this DVR , press **OK** button. Then the registered DVR and its cameras will be shown on the DVR List.



2) How to delete DVR (Group) or channel (Camera)?

Right-click on **DVR name** in the DVR list. Delete and Properties menu will pop up. Click **delete**. You can find the property information when you click **properties**.

3) Make and save a group of channels (cameras)

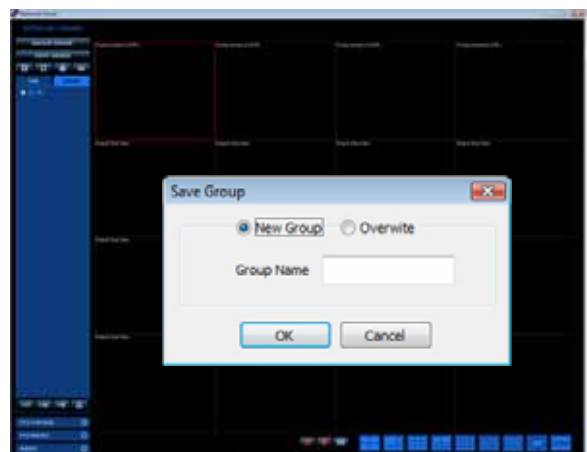
Before making a group, you must drag and drop the cameras (channels) you wish to make a group to the display panel. Then,

Select  from the left column.


New Group : Select New Group button to create a new group.

Overwrite : You can revise the existing group name.

You can combine any channels (cameras) from any DVRs registered to NetViewer program.

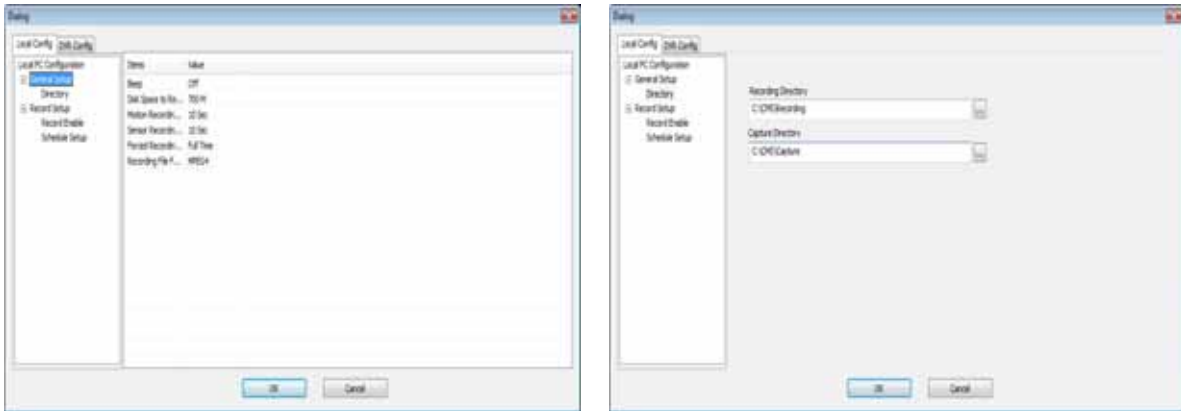


7.4. Local PC (Client PC) Configuration

You can set your own configuration regarding record enabling, schedule setup, and recording directory for your client PC. This setup is for your local PC and will work independently from your DVR setting. To start setup, Click , and you can configure all **Recording Setup for Client PC** from a pop-up window as below.

IMPORTANT: Local PC recording will be immediately activated when you completed local PC recording setup, and enable the motion/sensor/schedule recording.

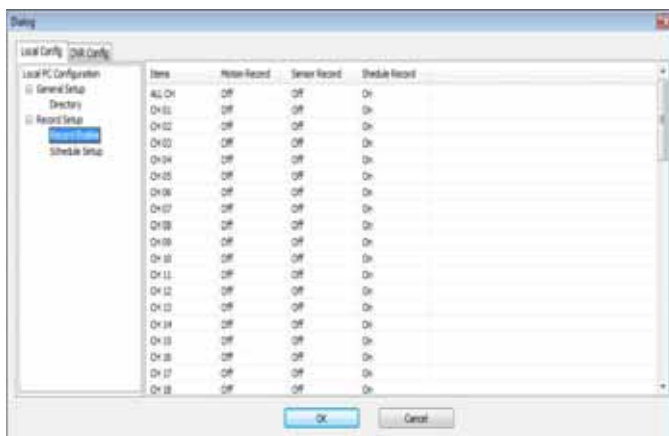
7.4.1. General Setup



- **Beep Setup** : Enable or disable beep sound warning.
- **Disk space to Remain** : HDD space need to be remained for your PC. NetViewer will use rest of your HDD space for a local recording except this space.
- **Motion Recording Time (10Sec. ~ 5Min.)** : Minimum recording time when the camera (channel) is triggered by a motion.
- **Sensor Recording Time (10Sec ~ 5Min)** : Minimum recording time when the camera (channel) is triggered by an external sensor.
- **Force Recording Time** : Maximum manual recording time to protect your HDD space.
- **Recording File Format** : MPEG4 Format or AVI Format. Choose a file format for local recording.
- **Recording File Directory** : You can save recording files into selected file directory in local PC
- **Capture File Directory** : You can save capture image files into selected file directory in local PC

7.4.2. Record Setup

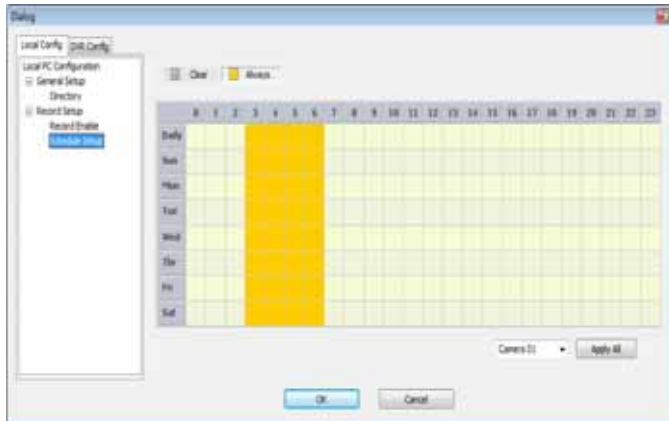
7.4.2.1. Record Enable



Select a channel and parameters for Motion/Sensor/Schedule driven recording for your client PC.

Select **ALL CH** to copy your setup to all other channels at once.

7.4.2.2. Schedule Setup




Setup your desirable recording schedule for your client PC. Choose the channel first then click **Always**.

Point starting time and drag to ending time. To cancel the schedule, click **Clear** Box. After schedule setup, click **OK** button to save and activate it. Click **Apply To All** button to copy same schedule to all other channels easily.

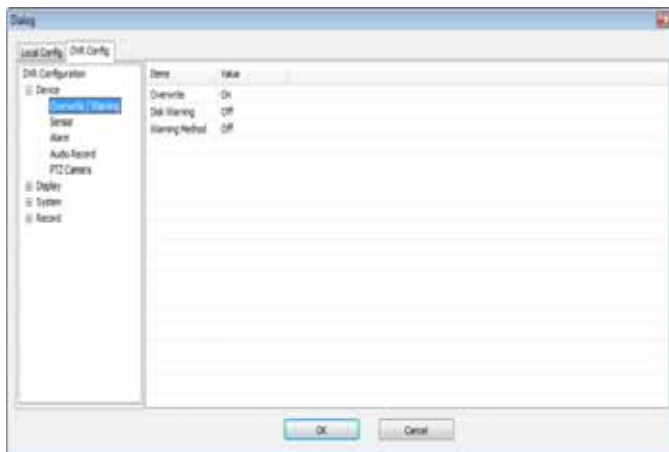
7.5. DVR Configuration

You can remotely control and manage your DVR from NetViewer program. We strongly recommend not to use this function in normal operation. If you change the configuration of DVR to wrong value, the DVR may not work properly and can cause unexpected problems. This is feature is for a professional administrator who manages its remote site.

To control the DVR remotely, click  **SETUP** then click **DVR Config** button on the pop up window as below. **DVR Config feature is only available when Net Viewer is connected to the DVR.** After connecting to the DVR, select a channel on the screen to select the right DVR.

7.5.1 Device

7.5.1.1. HDD Overwrite / Warning



Overwrite [ON / OFF]

To enable or disable HDD overwriting.

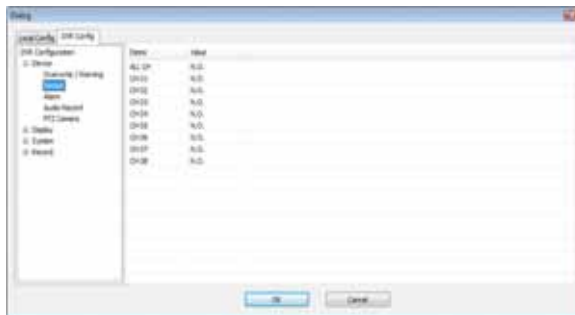
Disk Warning [ON / OFF]

To enable or disable the warning message on the screen when HDD is full and overwrite is OFF.

Warning Method [OFF / OSD / BEEP+OSD]

To select warning message method.

7.5.1.2. External Sensor



CHANNEL [CH1 - CH16 / ALL CH]

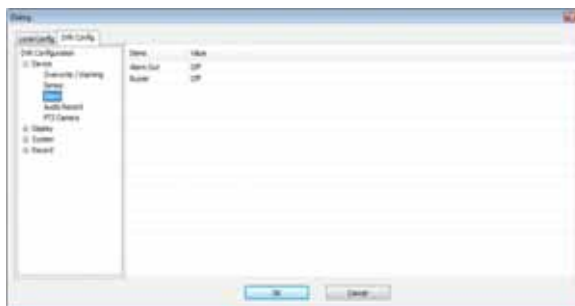
Select the type of external motion sensors or door/window and any other kind of sensors.

TYPE : N.O. / N.C.

N.O. : "Normal mode-Open".

N.C. : "Normal mode-Close".

7.5.1.3. Alarm



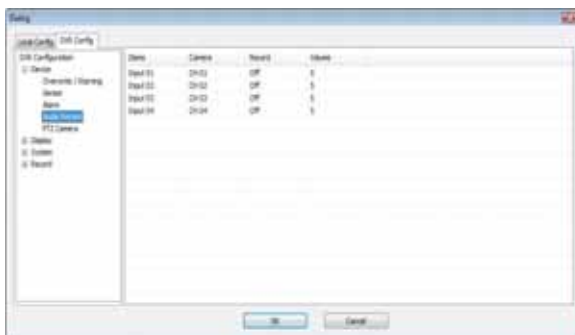
ALARM OUT [ON / OFF]

You can enable or disable the alarm signal output through external alarm device. It will be activated during event recording (MOTION and/or SENSOR) if it is "ON".

BUZZER [ON / OFF]

You can also enable or disable the internal buzzer. If you select "ON", the BUZZER will be activated when DVR warns external alarm device.

7.5.1.4. Audio



RECORD [ON / OFF]

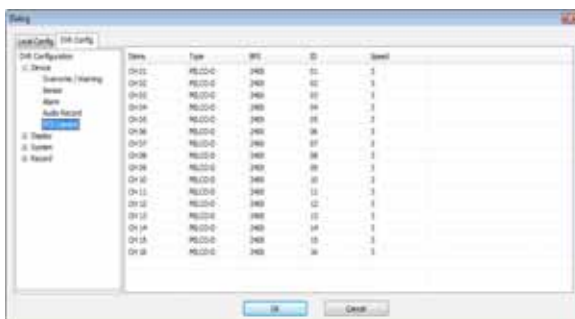
To enable or disable an audio record mode.

VOLUME [1 – 8]

Higher number increase the volume. Audio is linked to video channel# 1.

16CH DVR has four audio input channels as well as record on/off, volume and output channel.

7.5.1.5 PTZ Camera



TYPE : Select correct protocol for each PTZ cameras connected to DVR.

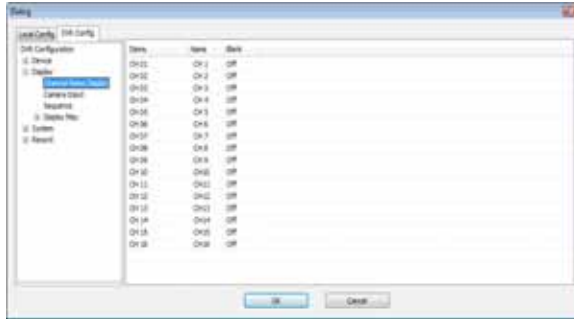
BPS : Set the Baud Rate (BPS).

ID : You can create own ID number for each PTZ cameras (up to 16 cameras).

SPEED : Select the speed of camera movement (1 – 5). The higher, the faster.

7.5.2. Display

7.5.2.1. Camera (Channel) Name Display



NAME:

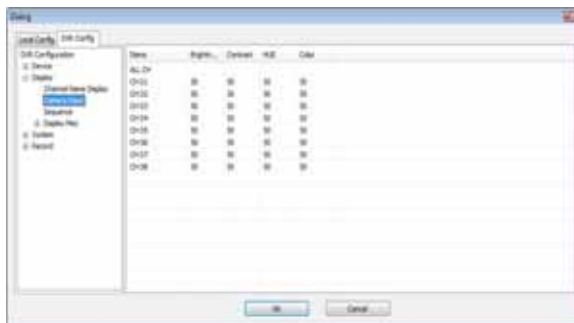
You can create own name for each camera connected to DVR using on screen keyboard. (up to 8 digits).

If you skip this setup, channel # will be displayed on the screen.

BLANK [ON/OFF]:

You can hide certain cameras from viewing on the screen. If you select "ON", the video from selected camera will not be displayed on the screen. But the camera will record normally as you originally set.

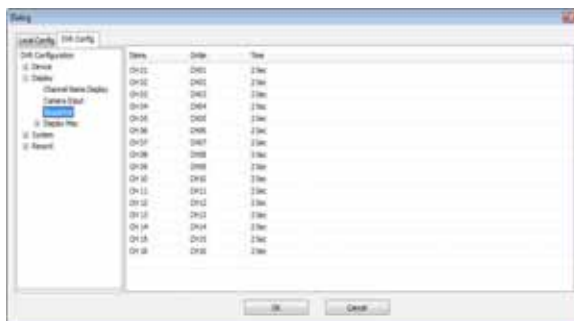
7.5.2.2. Camera Input



INPUT:

You can set up the quality of the video input by adjusting the value of **brightness/contrast/hue/color** for each camera connected to DVR.

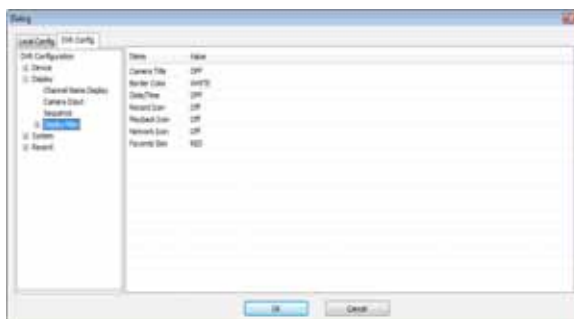
7.5.2.3. Sequence



SEQUENCE (DISPLAY):

Your DVR can display the each live video channel (or a group of channels) in sequence mode similar to slide show in PC. You can select order (1st through up to 16th), camera# (or a group of cameras) and display time from this menu.

7.5.2.4 Display Misc.



CAMERA TITLE [NUMBER / NAME / OFF]:

You can display camera number, name or blank.

BORDER COLOR [WHITE / BLACK / OFF]:

Select border line color from white/black/none.

DATE/TIME [TOP / BOTTOM / OFF]:

Select the position of date/time on the screen.

RECORD ICON [ON / OFF]:

Recording icon will be shown during recording if you select "ON".

PLAYBACK ICON [ON / OFF]: Playback icon will be displayed during the playback if you select 'ON'.

NETWORK ICON [ON / OFF]: If you select 'ON', Network icon will be displayed when the DVR is connected to any network client.

FAVORITE SKIN [BLUE / GREEN / RED]: Select the color for menu skin.

7.5.2.5 Display VGA



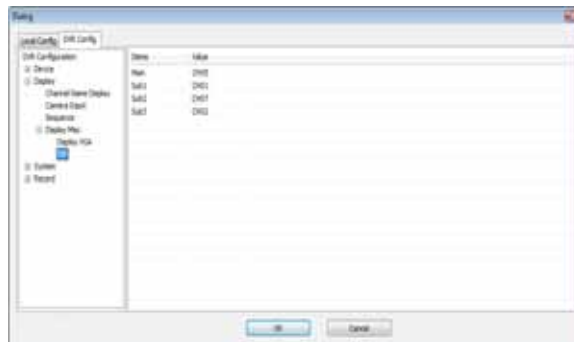
BRIGHTNESS [1 ~ 99]:

To control color tone of VGA output.

CONTRAST [1 ~ 99]:

To control light and shade of VGA output.

7.5.2.6. PIP (Picture In Picture) mode



With **PIP** (Picture In Picture) feature, you can monitor multiple channels while focusing on a specific channel. You can select one main video channel for full screen display and (up to) three sub channels as sub channels.

MAIN : Select one channel as a main display

SUB 1/2/3 : Select up to 3 channels for sub display

* When you select MAIN and SUB cameras (channels) in 4CH DVR, the channel (camera) can not be duplicated!

7.5.3. System

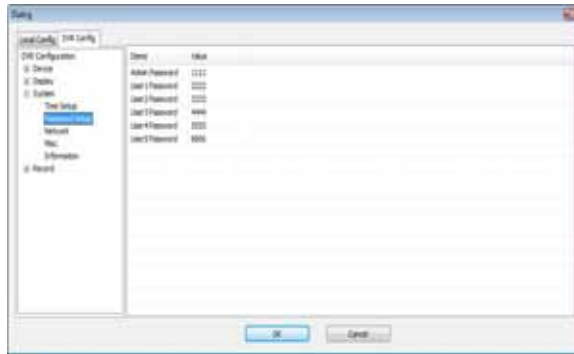
7.5.3.1. Time Setup (View Only – Current DVR Time & Date)



You can check and adjust current time of your DVR.

7.5.3.2. Password Setup

There are 2 different levels of password. With **ADMIN** password, you can access all information of DVR and fully control the system. **USER** password allows you to access to the limited information and no authority to change the system configuration of DVR.



1) ENABLE [ON / OFF]:

To enable or disable System Lock (password) function. If you set it **ON**, you need to enter password to use **MENU** feature.

2) ADMIN [combination of 4 numbers]:

Set your ADMIN password.

3) USER 1 - USER 5 [combination of 4 numbers]

User 1 through 5 are in the same security level.
Set your USER password.

7.5.3.3. Network (View Only - Current DVR Network Setup)



CH17 RESOLUTION :

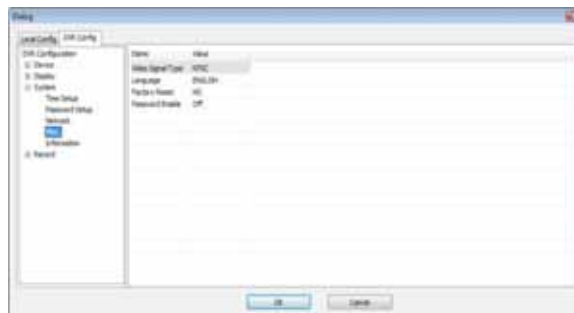
CH17 (16CH DVR) / CH9 (8CH DVR) is All-In-One channel mode for NetViewer users only.

There are 4 different resolutions (720x480, 720x240, 360x240 and 180x120) to support more video frames at poor network condition.

BANDWIDTH : Free/2Mbps/1Mbps/256Kbps / 128 Kbps / 56 Kbps

You can limit the DVR's bandwidth to protect your other network devices from slow internet speed.

7.5.3.4 .Misc.



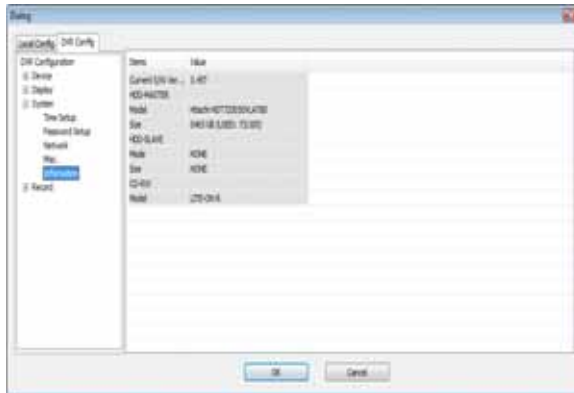
LANGUAGE : Please click language until you find your favorite language.

FACTORY RESET : You can restore all configuration to factory default values.

Current time and Network Setup Configuration will remain same after factory reset

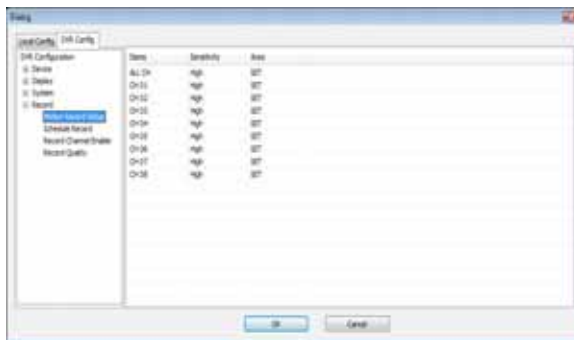
PASSWORD MODE : You can enable/disable password protection On / Off for system setting,

7.5.3.5. Information (View Only - System Information)



7.5.4 Record

7.5.4.1 Motion Record Setup



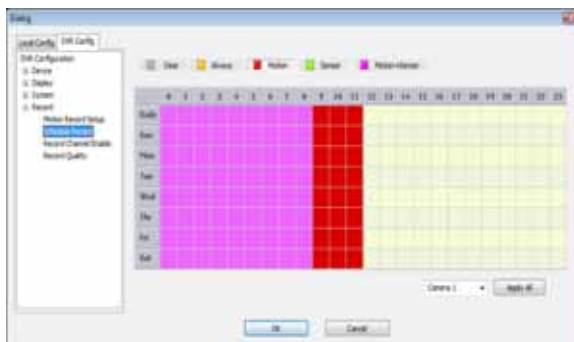
- **SENSIBILITY : LOW / NORMAL / HIGH / HIGHEST**

The higher level is more sensitive to detect motions of each channel.

- **AREA : FULL / SETUP**

You can select either FULL or SETUP for motion detection area. You can not change the detection area from NetViewer program.

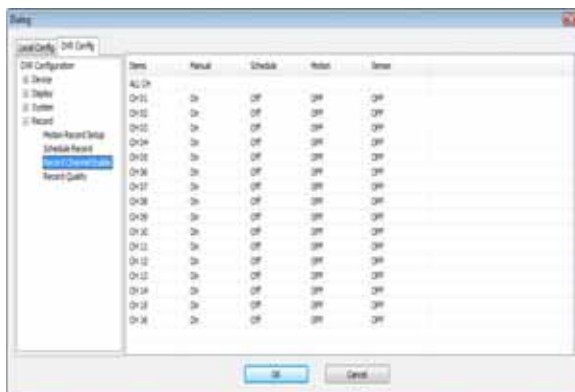
7.5.4.2. Schedule Record



This menu allows you to create own **recording schedule and trigger type**. To enable this feature, schedule recording feature must be **"ON"**. Choose your preferred record types(such as **ALWAYS, MOTION, SENSOR, or MOT+SEN**) on the selected time and date.

Important: If you select SENSOR(or MOTION) recording on certain time and date, the DVR will not start recording even if MOTION(or SENSOR) is ON and the camera is triggered by a motion(or a sensor) during that period. After that schedule, it will go back to normal MOTION(or SENSOR) mode. **Manual recording is available all the time if RECORD->POLICY->MANUAL is "ON".**

7.5.4.3 Enable/Disable Recording Methods



1) MANUAL (R) [ON / OFF]

ON: You can start recording the live video manually.

OFF: Manual recording is disabled on selected camera(s).

2) SCHEDULE (S) [ON / OFF]

ON: Schedule record enabled. DVR will record live video on selected camera as your schedule setup.

OFF: Schedule record disabled on selected camera and DVR will not record by your schedule setup. This menu is superior to schedule setup menu.

3) MOTION (M) [OFF / 30SEC / 45SEC / 1MIN / 2MIN / 3MIN / ALL CH]

OFF: Motion recording disabled. DVR will not record a live video from selected camera even if it detects a motion.

To enable MOTION detection recording mode and set the recording time, please choose one of the followings;

30SEC/45SEC/1MIN/2MIN/3MIN: Motion recording enabled and recording time selected.

DVR will record a live video from selected camera(s) when motion is detected. DVR will keep recording for the selected (ex; 30sec., 45sec.,...3min.) time. If DVR detects the motion again, DVR will continuously record for another selected time and will repeat this process until there is no motion detected.

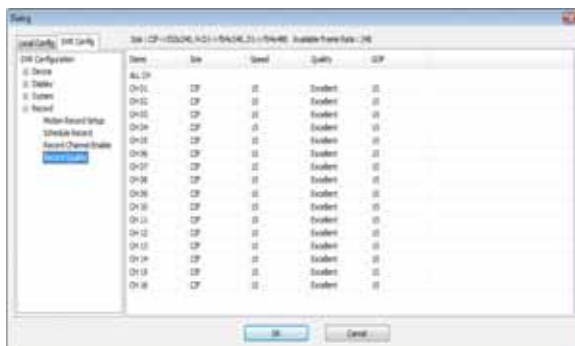
ALL CH: Motion recording enabled with 30 seconds recording time.

When selected camera (set to ALL CH) is triggered by the motion. DVR will start recording **ALL** cameras for 30 seconds. After 30 seconds, if DVR still detects the motion, DVR will continuously record another 30 seconds until no motion is detected by the selected camera.

4) SENSOR (E) [OFF / 30SEC / 45SEC / 1MIN / 2MIN / 3MIN/ ALL CH]

To enable or disable the recording of each camera which are activated by external sensor. All setup menu and features are same with MOTION (M) setup.

7.5.4.4 .Record Quality



1) SIZE [720x480, 720x240 and 360x240]

There are three recording resolution modes you can choose from. With 720x480 mode, DVR records video at full D1 resolution. With 720x240 mode, DVR records video at half D1 resolution. With 360x240(288) mode, DVR records video at CIF resolution.

2) SPEED (F/S) [30 / 15 / 10 / 7 / 6 / 5 / 4 / 3 / 2 / 1 / 0]

Select recording speed in frame/image per second. Higher F/S requires more HDD spaces. Set lower F/S for longer recording time. Recommended speed is 30 F/S with CIF resolution.

•If your remaining available speed is less than 240 (120) F/S for 16(8) CH DVR, optional “All-In-One Channel Mode” for NetViewer clients will be disabled. If you want to use this feature for NetViewer, make sure to have enough remaining available speed for All-In-One Channel Mode.

3) QUALITY [Normal / Good / Very Good / Excellent]

Select recording video quality. Higher video quality requires more HDD space.

4) GOP [15/30]

This number indicates the number of P-frames between I-Frame (=base frame of picture) and a following I-Frame.

15: DVR will record I-Frame per every 15 frames.

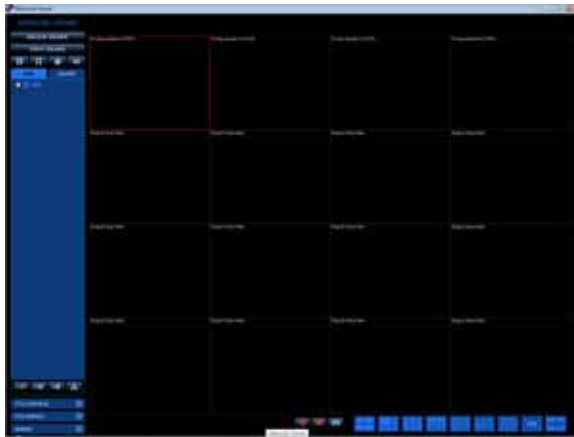
30: DVR will record I-Frame per every 30 frames.

Lower number (means more I-Frames within the same recorded frames) provides a **better picture quality** and smooth FF, REW and transmission through the network but requires **more HDD spaces**.

What is I-Frame?

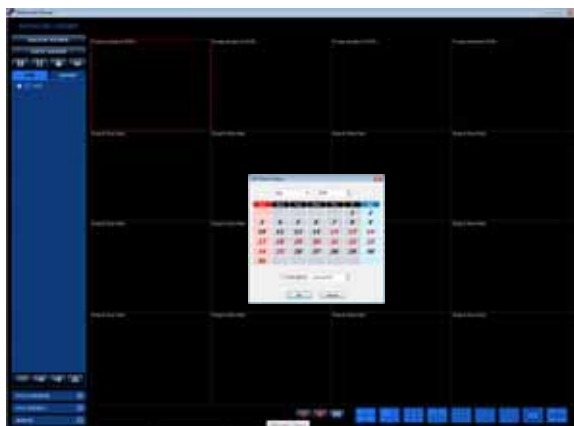
a video compression method used by the MPEG standard. In a motion sequence, individual frames of pictures are grouped together (called a *group of pictures*, or *GOP*) and played back.

7.6. Backup Viewer

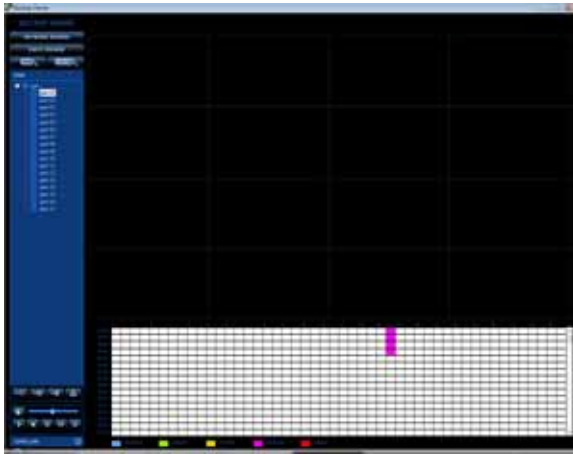


There are two backup file search modes. The one is **DVR Search** (for recorded files in DVR) and other one is **LOCAL Search** (for your local recorded files in your PC HDD). To playback recorded files, you need to find the files using appropriate search mode.

7.6.1.DVR Search

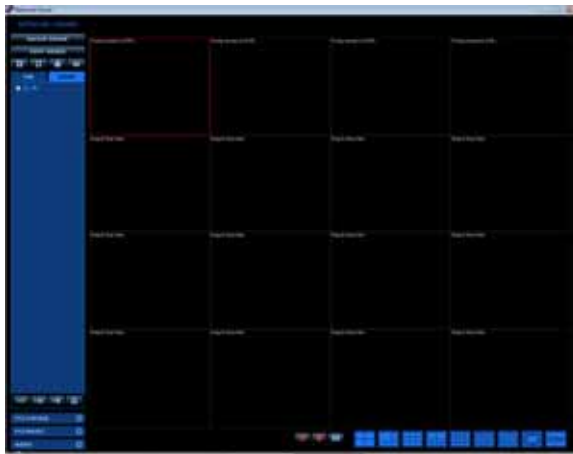


Press **DVR SEARCH** button and then choose the month, date and press OK button. Then, the backup viewer will display the graphic time bar as below. The time with recorded file(s) will be displayed in color. Each color indicates the trigger type of the record.



TIME LINE : You can show/hide the time line graphic bar. Press **TIME LINE** button to show/hide the time table.

7.6.1.1. DVR Play Back

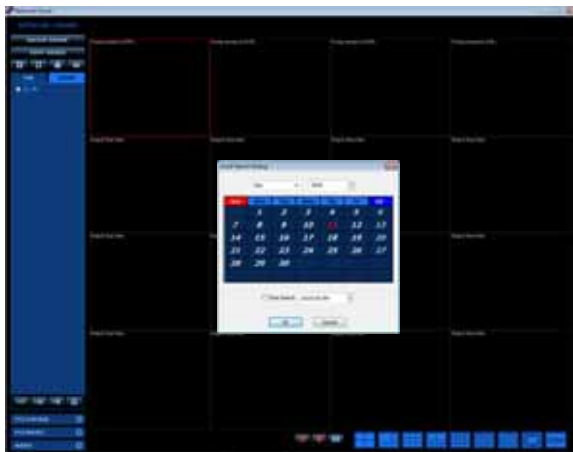


To playback recorded files at specific time and triggered by specific event, **Click** the time block and backup viewer will start to play back the files in selected time block.

You can stop the video at any time by pressing “**STOP**” button. FF, REW, PAUSE are available during playback.

7.6.2. Local Search

Press **LOCAL SEARCH** button. Then select the month date & time and press **OK** button. After selecting date and time, the backup Viewer will display the local backup files (from your PC HDD).

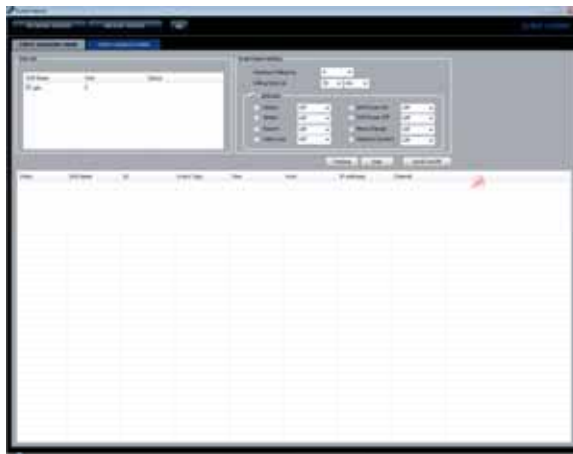


7.6.2.1 Local Play Back



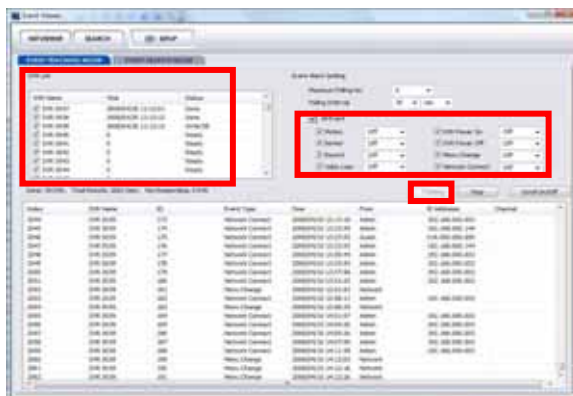
To playback recorded files at specific time and triggered by specific event, **Click** the time block and backup viewer will start to play back the files in selected time block. You can stop the video at any time by pressing **"STOP"** button. FF, REW, and PAUSE are available during playback.

7.7. Event Viewer



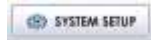
There are two Event Search modes. The one is **Event Tracking Mode** and other one is **Event Search Mode**.

7.7.1. EVENT TRACKING MODE

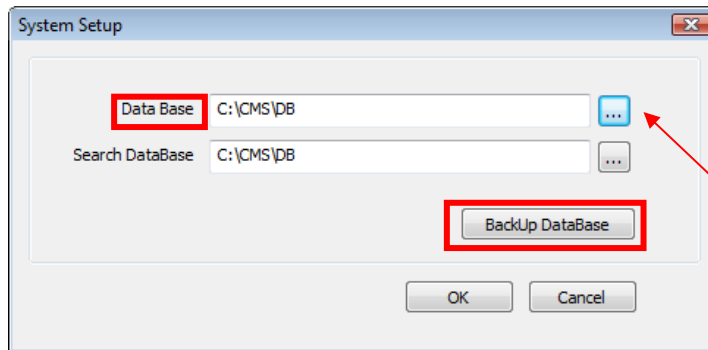


You can track the event by trigger mode. After select DVR(s) with event, press **Tracking** button. Then the event viewer will display the event files.

7.7.1.1. Save Event Files



After event viewer displays the event files, you can save the file to local **PC Data Base**.

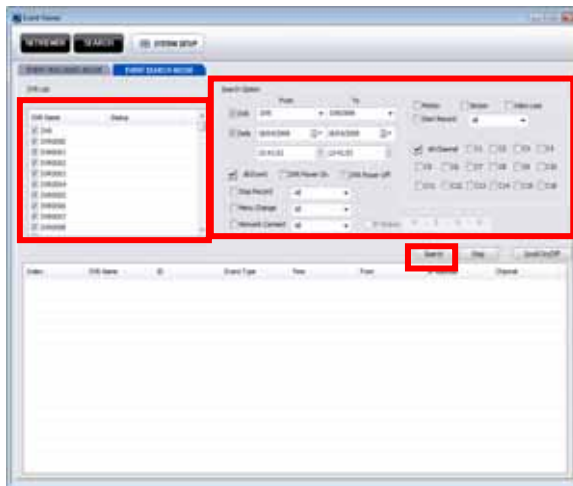


Data Base : Default directory is C:\CMS\DB. You can change the directory by pressing

Backup Database : Press Backup Database button to start backup the data



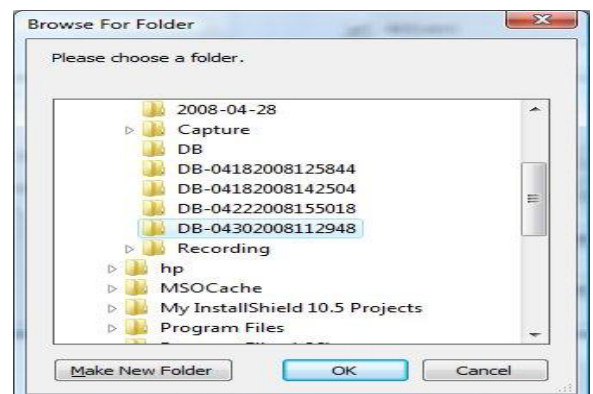
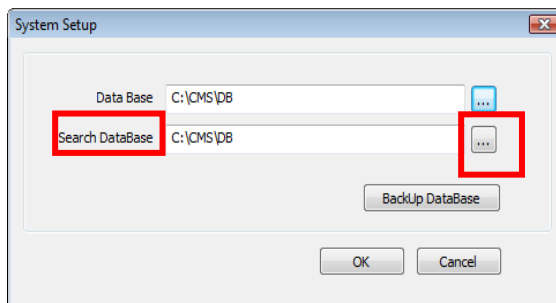
7.7.2. EVENT SEARCH MODE



You can search the event after selecting DVR(s) and search options. Click **Search** button. The event search will display event Index files.

7.7.2.1 Search Database

You can retrieve a specific search index file by using Search Database button.



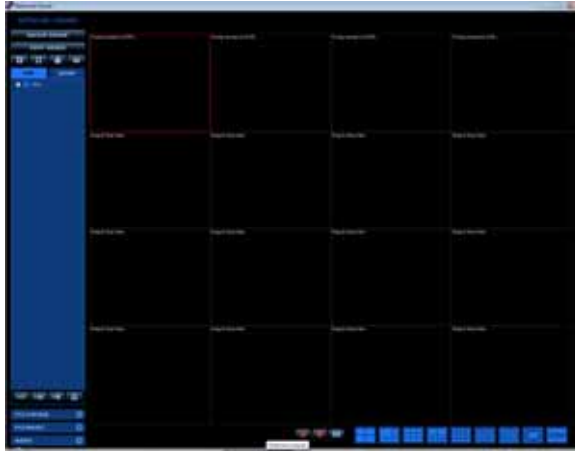
7.8. General Operation


7.8.1. DVR or Group Selection

To connect to DVR(s)/camera(s), select a DVR or GROUP you want to connect by clicking a DVR or GROUP selection window in the Left Top of Net Viewer.

7.8.2. Connect to DVRs and Cameras

Step 1 : First, select DVRs / camera, then drag and drop to right side of screen



Step 2: Go to selected channel and right-click on the mouse and select **CONNECT** or click 



Then you will see live videos coming from selected DVR or GROUP on the screen. You can watch multiple videos from other GROUP, using a GROUP selection window at any time.

7.8.3. Audio Control



You can control the audio using **AUDIO** button.

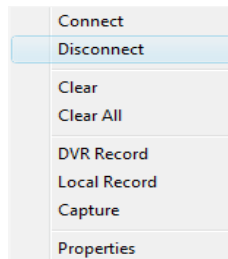
7.8.4. PTZF Control / Preset

You can control pan/tilt/zoom/focus of PTZ camera to your DVR remotely. See the control panel as below. Before start controlling PTZF, please make sure the PTZ camera is connected properly.



7.8.5. Disconnecting the DVR (s) / camera(s) from NetViewer

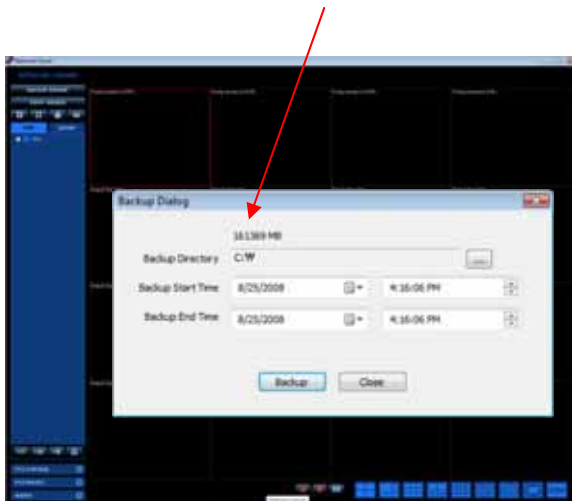
You can disconnect the current connection from DVR(s) / camera(s). Click **Disconnect**.



7.8.6. Local File Backup and Playback

Just like file backup at your DVR, you can also backup recorded files from your PC HDD to USB memory stick, or some other directories in your local HDD. **(Backup to other remote PC or CD/DVD are not supported.)** The backup file type is MPEG4 format for authentication purpose.

Available HDD or USB
memory size for backup



Go to **Backupviewer** main screen, and click **Backup** button. And **Backup Dialog** window will pop up.

Select your backup directory. (**Local HDD or USB memory stick**)

Select the **start** and **end time** for backup. And click **Backup** button. If the backup file size is bigger than available memory size, an error message will be appeared. Please change the memory size or date and time to change backup file size.

To playback your backup files, **go to backup file directory** and click **AIP player**.

Chapter 8. Web Viewer – Connect to DVR via Internet Explorer

8.1. Getting Started

8.1.1 System Requirement

- Pentium 4 or above recommended
- O/S : Microsoft Windows XP, Vista
- 512MB RAM or above recommended
- Super VGA 16M or above recommended
- 10/100 Base T network card for LAN operation

8.1.2 Network Environment

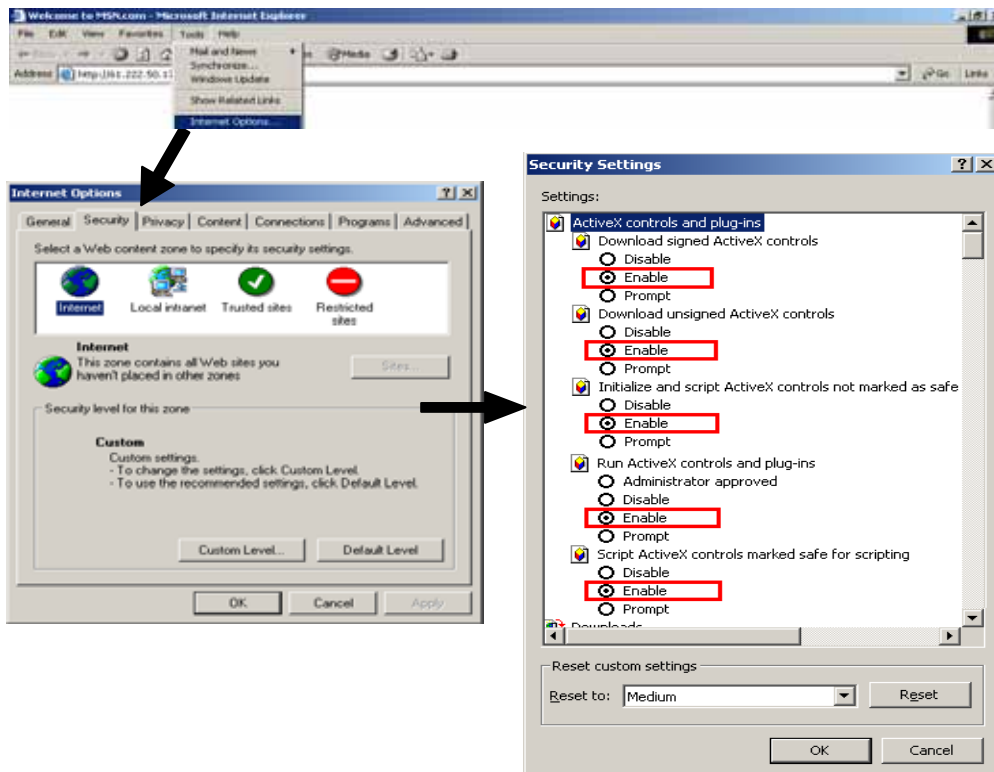
	Client PC	DVR
Minimum	More than 128Kbps	More than 128 Kbps
Recommend	More than 3 Mbps	More than 3 Mbps

8.2. Web Viewer Setup

Please visit <http://www.dvrviewer.com/mpeg4>

If you experience ActiveX installation problem,

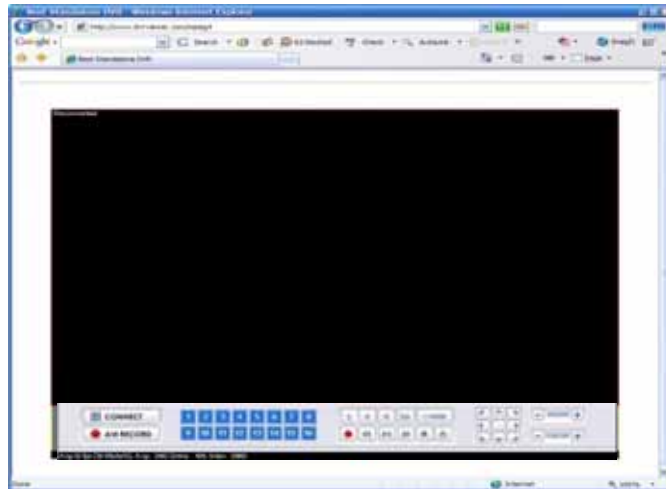
1. Enable all option regarding ActiveX controls.
2. Open internet browser, select Tools / Internet Options /Security /Custom Level, and select Enable following items on example picture below.
3. Go to <http://www.dvrviewer.com/mpeg4> again.



8.3. Connect to DVR using Web Viewer (IE)

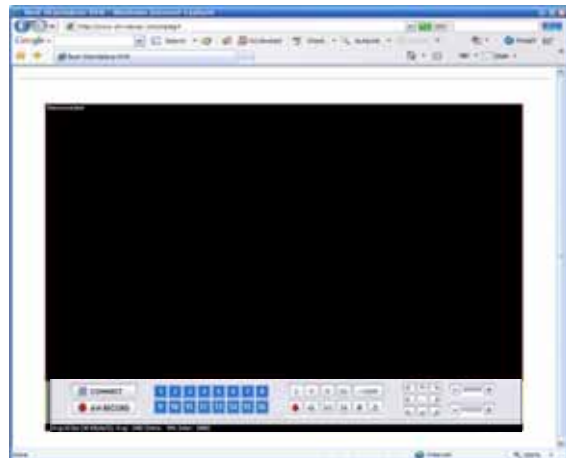
8.3.1. Connect to DVR via Web Browser using URL

- 1) Make sure your DVR network setup is successfully completed. And check your Network ID and Password from the Network Setup. Registering your Network ID and Password is required before connecting to DVR via web browser.
- 2) Open your internet browser. Go to <http://sc.dvrviewer.com>, then you will see the screen as below.
(If your computer system blocks **ActiveX** control, please refer to chapter 8.2. **Web viewer setup to enable Web Viewer** site.)
- 3) After click Connect button, type **network ID and Password** then click **OK** button.



8.3.2 Connect DVR via Web Browser using Direct IP.

- 1) Open your internet browser.
- 2) Type your DVR's IP address in your internet browser. (ex: <http://192.168.0.30>) Then you will get the screen as below. (If your computer system blocks ActiveX control, please refer to chapter 8.2. **Web Viewer setup to enable ActiveX** download)
- 3) At the log in page, type your network ID and password. Then you'll get the screen as below.



8.4. General Operation of WebViewer

When you connect to your DVR, you will see a screen as below.



1. Connect Button

Connect to DVR which is designated in Login pop-up window.

2. AVI Recording Button

Recording current videos into your PC(client PC) in AVI format.

3. Channel Selection Button

You can choose any channel to display as a full screen.

4. Multi Screen Button

You can set display mode in Full, 4, 9 or 16 channels. You also can enlarge video area in full screen on your PC monitor.

5. REC. and Playback Button

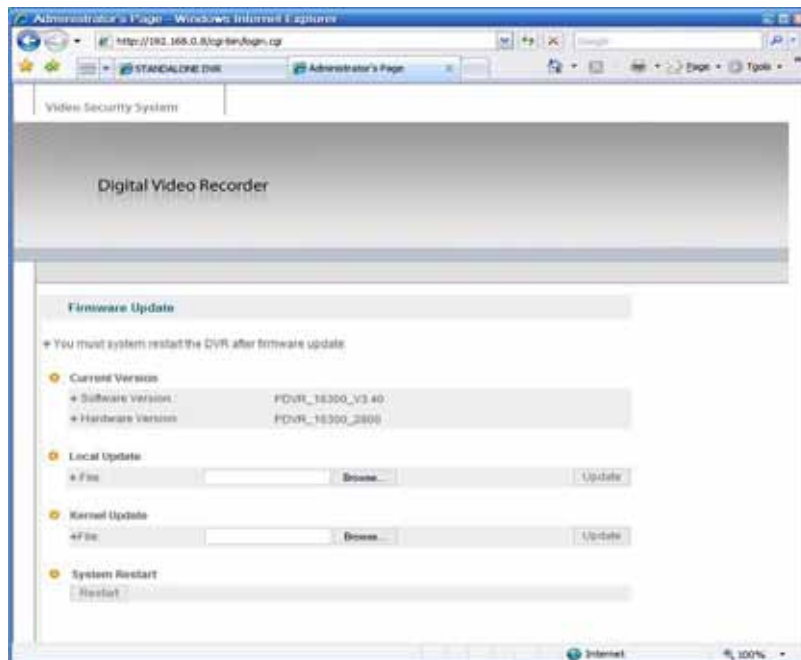
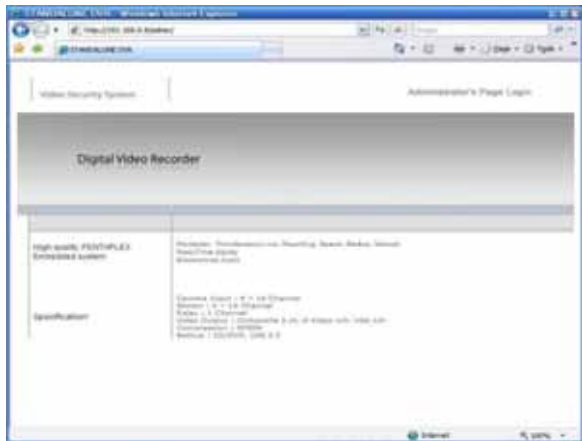
You can record and retrieve videos to/from your client PC.

6. PTZF Control :

Pan, Tilt, Zoom, Focus control for PTZ cameras connected to your DVR.

8.5. Firmware Upgrade using Web Browser

- 1) Open your internet browser.
- 2) Type your DVR's IP address followed by **/admin/** (ex: <http://192.168.0.30/admin/>), then you will see the screen as below. (If your computer system blocks ActiveX control, please refer to chapter 8.2. Web Viewer setup **to enable ActiveX download.**)
- 3) Click Administrator's page and type **"admin"** in both ID and password section. Click **log in** button, then you will reach to the administrator's page as below. Check current version of your DVR first.
- 4) Go to **Local Update** : Find the right file with browser, then click **Update** button.
(Don't try Kernel update unless you get a special instruction from the manufacturer/distributor)

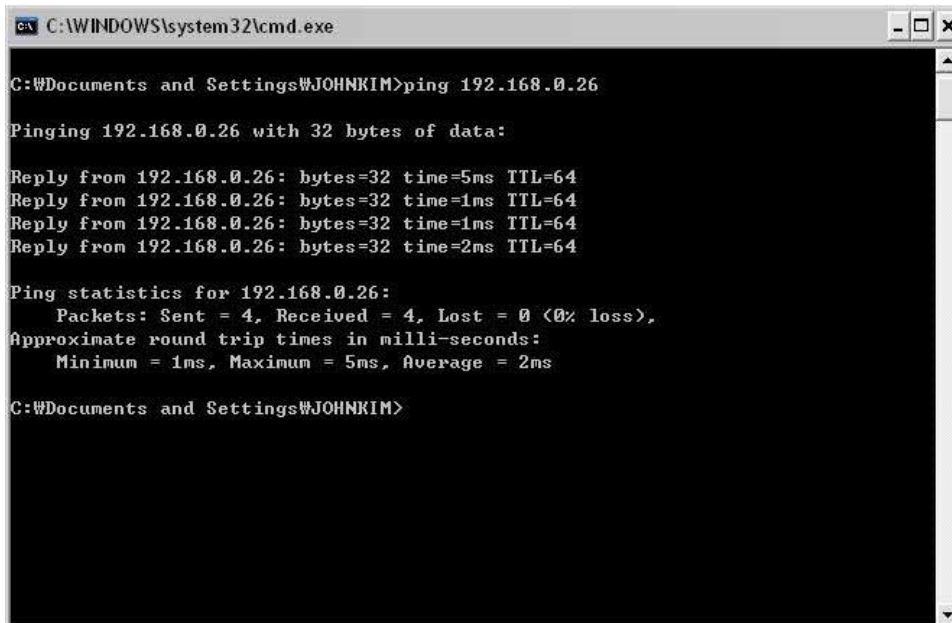


APPENDIX 1 - NETWORK TROUBLESHOOTING

You must set your network environment properly to use remote control software (Net Viewer or Web Viewer).

1. Ping Test through your Router

Ping is a command-line tool used to check whether another computer is reachable from your own. You can use the command either from the Windows Command Prompt or from a Linux terminal. The following shows the sample output under Windows: Type "ping DVR IP address" (e.g. ping 192.168.0.26). If DVR and your computer are in same intranet (LAN) and connected each other through router, you will see successful ping test.



```

C:\WINDOWS\system32\cmd.exe

C:\Documents and Settings\JOHNKIM>ping 192.168.0.26

Pinging 192.168.0.26 with 32 bytes of data:

Reply from 192.168.0.26: bytes=32 time=5ms TTL=64
Reply from 192.168.0.26: bytes=32 time=1ms TTL=64
Reply from 192.168.0.26: bytes=32 time=1ms TTL=64
Reply from 192.168.0.26: bytes=32 time=2ms TTL=64

Ping statistics for 192.168.0.26:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 5ms, Average = 2ms

C:\Documents and Settings\JOHNKIM>
  
```

If you get time out message at ping test, you should fix this problem before going to next step.

- Check if DVR and computer are in same intranet.
- Check if there are other computers or devices that have same IP address in same intranet.
- Check if IP address, subnet mask and gateway address are correct.

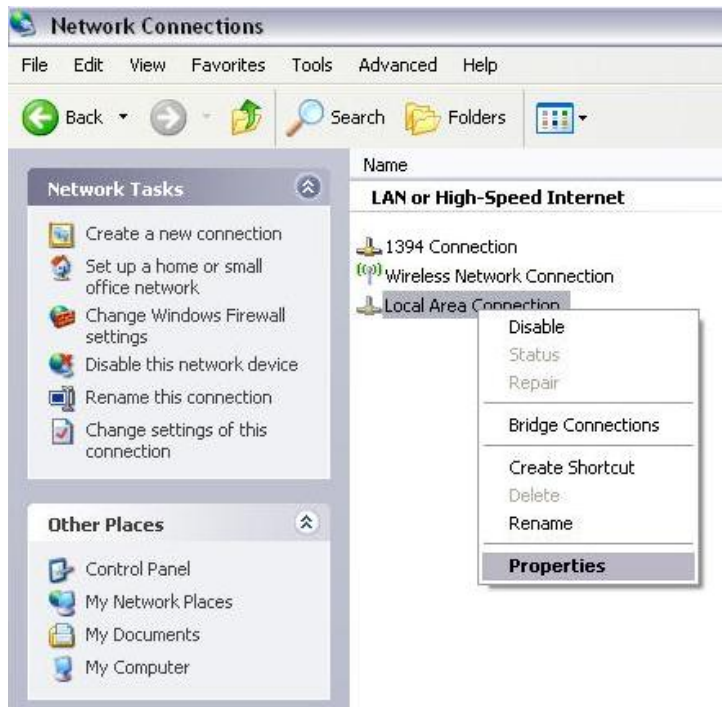
2. Direct ping test without Router

If you failed ping test through Router, you should figure out if DVR is defective. You can do ping test simply with direct connection between PC and DVR. If you fail ping test in this configuration, you might consider that DVR is defective, but if this test is successful, you might consider that your intranet (LAN) is not working properly.

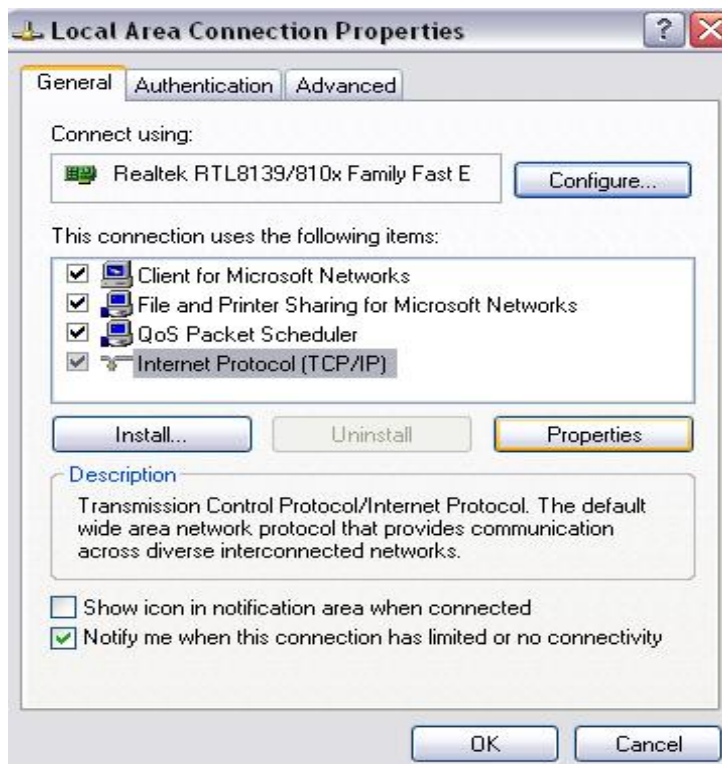
- Connect PC and DVR using Crossover LAN cable (usually it is gray color).



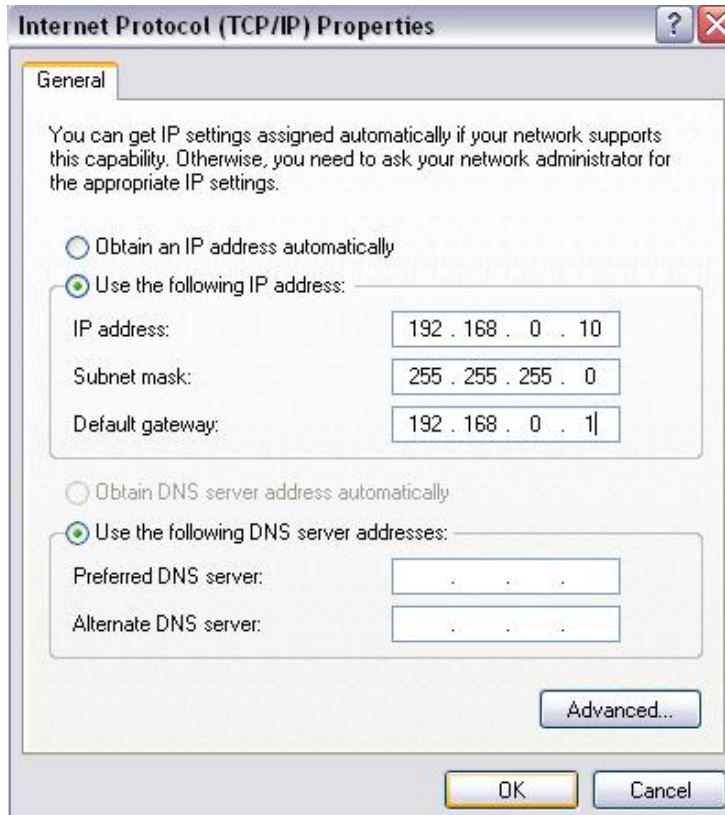
- Set IP address, Subnet mask and Gateway address of your PC.



- Open Network Connections
- Select Properties of Local Area Connection



- Select Internet Protocol (TCP/IP)
- Select Properties



- Click on **Use the following IP address**

- Type in Subnet mask and Gateway address of DVR into these fields

- Type in IP address like example.

- Do ping test again.

With the test result, you can figure out if DVR is working good or defective.

APPENDIX 2. DVR SPECIFICATIONS

Category		4 CH	8 CH	16 CH
Video	Input	4 BNC, 1V 75 Ohm	8 BNC, 1V 75 Ohm	16 BNC, 1V 75 Ohm
	Output	2 CVBS, S-Video, VGA		
	Auto-Loop Throughout	4 BNC, 1V 75 Ohm	8 BNC, 1V 75 Ohm	16 BNC, 1V 75 Ohm
Audio	Input / Output	2 x RCA (1 in, 1 out)		5 x RCA (4 in, 1 out)
	Recording Mode	G.723 Compression/Decompression		
Display	Display FPS (NTSC/PAL)	120 / 100 FPS	240 / 200 FPS	480 / 400 FPS
	Display Resolution	720 X 480 (NTSC), 720 X 576 (PAL)		
	Screen Split Mode	Full, 4 Split	Full, 4 / 9 Split	Full, 4/9/16 Split
	PIP and Zoom	1 / 2 / 3 PIP, Zoom		
Pentaplex Mode		Simultaneous Live, Recording, Playback, Backup, Network		
Recording	Video Compression	Real-time full duplex MPEG4 hardware codec		
	Frame rate	Adjustable frame rate for each channel		
	Video Resolution	NTSC : 720x480, 720x240, 360x240, PAL : 720x576, 720x288, 360x288		
	Recording Ways	Manual, Schedule, Event (internal motion, external sensor), Network driven		
	Recording FPS (NTSC/PAL)	Up to 120 / 100 FPS	Up to 240 / 200 FPS	Up to 480 / 400 FPS
	Still Image Capture	Live or Playback Image Local Capture and Backup for legal evidence		
	Image File Size	NTSC : 1~12KB, PAL : 1~15KB		
	Internal Hard Drives	SATA, MAX 2 HDDs supported		
Remote Monitoring / Control		Remote View and Control via High speed Internet or USB Telephone Modem		
		Dynamic / Static IP support, Own Client / Web Browser support		
		Client software for Remote View & Full Control		
		Multi DVRs & Multi Clients support		
		Each Camera Mode	Full Screen Mode or Each Camera Mode	
Playback	Playback Screen Mode	Full, 4 Split	Full, 4 / 9 Split	Full, 4/9/16 Split
	Search Mode	Search by Manual, Schedule, Motion, Sensor, Remote REC or Date/Time		
Alarm Control	External Sensor Input	4CH NC / NO	8CH NC / NO	16CH NC / NO
	Alarm Output	Internal Buzzer, OSD, Internal Relay (Combined with External Device)		
Network	Protocol	TCP/IP; RJ-45		
	Resolution	Full D1, Half D1, CIF	Full D1, Half D1, CIF, QCIF	
	Remote Control	Fully functional remote client software		
	Viewer	Own Application or Web browser		
	Recording	MPEG4 / AVI Recording, JPEG Still image Capturing		
Data Backup		Ethernet, DVD-Burner, USB 2.0		
		AVI format for easy viewing, MP4 format for image authentication		
Others	Protect Video / Audio files	Protect Video / Audio from HDD overwrite		
	Configuration File / Data Copy	Configuration file Import / Export to USB, Camera Setup Cloning		
	Control	Buttons, IR Remote Control, USB Mouse, Ethernet and RS-485 for PTZF Camera		
	Event Log & Pre-Alarm Record	System and Event Log management, Pre-recording for Event (Motion, Sensor)		
	Power Supply & Dimensions	DC 12V / 5A, 430 x 358 x 75 mm (17 x 14 x 3 inch)		
	Weights	5.1 Kg (11.3 lbs)	5.3 Kg (11.7 lbs)	5.7 Kg (12.0 lbs)
	Approval	FCC, CE		

Resolution : CIF (360x240)

16CH

This figure of HDD space used is reference only. Actual number can be effected by many parameters.

(Hours)								(Days)				
G BYTES	Total FPS	FPS/CH	Excellent	Very Good	Good	Normal	Basic	L5	L4	L3	L2	L1
80	480	30	8.54	9.49	11.54	13.62	16.52	0.4	0.4	0.5	0.6	0.7
	240	15	17.08	18.99	23.07	27.23	33.04	0.7	0.8	1.0	1.1	1.4
	160	10	25.61	28.48	34.61	40.85	49.56	1.1	1.2	1.4	1.7	2.1
	112	7	36.59	40.69	49.44	58.35	70.80	1.5	1.7	2.1	2.4	3.0
	80	5	51.23	56.97	69.22	81.69	99.13	2.1	2.4	2.9	3.4	4.1
	48	3	85.38	94.95	115.37	136.15	165.21	3.6	4.0	4.8	5.7	6.9
	16	1	256.14	284.84	346.10	408.45	495.63	10.7	11.9	14.4	17.0	20.7
120	480	30	13.04	14.51	17.63	20.80	25.24	0.5	0.6	0.7	0.9	1.1
	240	15	26.09	29.01	35.25	41.60	50.48	1.1	1.2	1.5	1.7	2.1
	160	10	39.13	43.52	52.88	62.40	75.72	1.6	1.8	2.2	2.6	3.2
	112	7	55.90	62.17	75.54	89.15	108.17	2.3	2.6	3.1	3.7	4.5
	80	5	78.27	87.04	105.75	124.81	151.44	3.3	3.6	4.4	5.2	6.3
	48	3	130.44	145.06	176.25	208.01	252.41	5.4	6.0	7.3	8.7	10.5
	16	1	391.33	435.18	528.76	624.03	757.22	16.3	18.1	22.0	26.0	31.6
160	480	30	17.55	19.52	23.71	27.99	33.96	0.7	0.8	1.0	1.2	1.4
	240	15	35.10	39.03	47.43	55.97	67.92	1.5	1.6	2.0	2.3	2.8
	160	10	52.65	58.55	71.14	83.96	101.88	2.2	2.4	3.0	3.5	4.2
	112	7	75.22	83.64	101.63	119.94	145.54	3.1	3.5	4.2	5.0	6.1
	80	5	105.30	117.10	142.29	167.92	203.76	4.4	4.9	5.9	7.0	8.5
	48	3	175.50	195.17	237.14	279.87	339.60	7.3	8.1	9.9	11.7	14.2
	16	1	526.51	585.51	711.43	839.60	1018.80	21.9	24.4	29.6	35.0	42.5
250	480	30	27.75	30.86	37.49	44.25	53.69	1.2	1.3	1.6	1.8	2.2
	240	15	55.50	61.72	74.99	88.50	107.39	2.3	2.6	3.1	3.7	4.5
	160	10	83.25	92.57	112.48	132.75	161.08	3.5	3.9	4.7	5.5	6.7
	112	7	118.92	132.25	160.69	189.64	230.12	5.0	5.5	6.7	7.9	9.6
	80	5	166.49	185.15	224.97	265.49	322.16	6.9	7.7	9.4	11.1	13.4
	48	3	277.49	308.58	374.94	442.49	536.94	11.6	12.9	15.6	18.4	22.4
	16	1	832.46	925.74	1124.83	1327.47	1610.81	34.7	38.6	46.9	55.3	67.1
300	480	30	33.20	36.92	44.86	52.95	64.25	1.4	1.5	1.9	2.2	2.7
	240	15	66.41	73.85	89.73	105.90	128.50	2.8	3.1	3.7	4.4	5.4
	160	10	99.61	110.77	134.59	158.84	192.75	4.2	4.6	5.6	6.6	8.0
	112	7	142.30	158.25	192.28	226.92	275.35	5.9	6.6	8.0	9.5	11.5
	80	5	199.22	221.54	269.19	317.69	385.49	8.3	9.2	11.2	13.2	16.1
	48	3	332.03	369.24	448.65	529.48	642.49	13.8	15.4	18.7	22.1	26.8
	16	1	996.10	1107.72	1345.95	1588.43	1927.47	41.5	46.2	56.1	66.2	80.3
400	480	30	44.35	49.32	59.93	70.72	85.82	1.8	2.1	2.5	2.9	3.6
	240	15	88.70	98.64	119.85	141.45	171.64	3.7	4.1	5.0	5.9	7.2
	160	10	133.05	147.96	179.78	212.17	257.45	5.5	6.2	7.5	8.8	10.7
	112	7	190.07	211.37	256.83	303.10	367.79	7.9	8.8	10.7	12.6	15.3
	80	5	266.10	295.92	359.56	424.34	514.91	11.1	12.3	15.0	17.7	21.5
	48	3	443.50	493.20	599.27	707.23	858.18	18.5	20.5	25.0	29.5	35.8
	16	1	1330.51	1479.60	1797.80	2121.69	2574.54	55.4	61.6	74.9	88.4	107.3
500	480	30	55.14	61.32	74.51	87.93	106.70	2.3	2.6	3.1	3.7	4.4
	240	15	110.28	122.64	149.02	175.86	213.40	4.6	5.1	6.2	7.3	8.9
	160	10	165.42	183.96	223.52	263.79	320.10	6.9	7.7	9.3	11.0	13.3
	112	7	236.32	262.80	319.32	376.85	457.28	9.8	11.0	13.3	15.7	19.1
	80	5	330.85	367.92	447.05	527.59	640.19	13.8	15.3	18.6	22.0	26.7
	48	3	551.41	613.20	745.08	879.31	1066.99	23.0	25.6	31.0	36.6	44.5
	16	1	1654.24	1839.61	2235.23	2637.93	3200.97	68.9	76.7	93.1	109.9	133.4
750	480	30	82.77	92.05	111.84	131.99	160.16	3.4	3.8	4.7	5.5	6.7
	240	15	165.54	184.09	223.68	263.98	320.33	6.9	7.7	9.3	11.0	13.3
	160	10	248.31	276.14	335.53	395.97	480.49	10.3	11.5	14.0	16.5	20.0
	112	7	354.73	394.48	479.32	565.68	686.41	14.8	16.4	20.0	23.6	28.6
	80	5	496.63	552.28	671.05	791.95	960.98	20.7	23.0	28.0	33.0	40.0
	48	3	827.71	920.46	1118.42	1319.91	1601.63	34.5	38.4	46.6	55.0	66.7
	16	1	2483.14	2761.39	3355.25	3959.73	4804.90	103.5	115.1	139.8	165.0	200.2