



Triplex Digital Video Recorder

DVR-450

User's manual

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The is a class B device, In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

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Revision

User's Manual for PLANET Triplex Digital Video Recorder

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Part No. EM-DVR450V1

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Chapter 1

Introduction



Overview

The DVR-450 (Triplex Digital Video Recorder) is for recording/playback/Network video streams from up to 4 channels at the same time. It adopts cutting-edge digital image compression technology to compress the analog input channel video streams, and uses HDD to record the compressed video stream.

The following operation guide explains how to operate/manage the DVR-450, and the following installation guide explains how to complete the first DVR-450 installation on your side.

DVR Functions

This DVR provides recording capabilities for four camera inputs. It provides playback or live display and network function while in recording mode. And also it offers the following features:

- **Real-time recording for up to 4 analog cameras, maximum up to 60 NTSC IPS (Image per second), 50 PAL IPS**
- **Simultaneously Record, Playback and Network viewing**
- **Remote monitoring via Internet Explorer or bundled utility**
- **Convert traditional surveillance equipment into digitalized surveillance network**
- **Local monitoring, no special equipment required**
- **Continuous / manual / event triggered / scheduled recording**
- **Display and Record Video Resolution: NTSC (720x480), PAL (720x576)**
- **1 channel audio recording**
- **4 Loop-Through Video Connectors to secondary monitor device**
- **Built-in buzzer alarm to send warning when alarm or motion has been triggered**
- **USB interface for machine archiving**
- **Powerful Search Engines (Schedule/ Motion/ Alarm/ Manual recording search or by Date/Time)**
- **Bundled recording and playback utility for remote computer**
- **DDNS / DHCP client support**

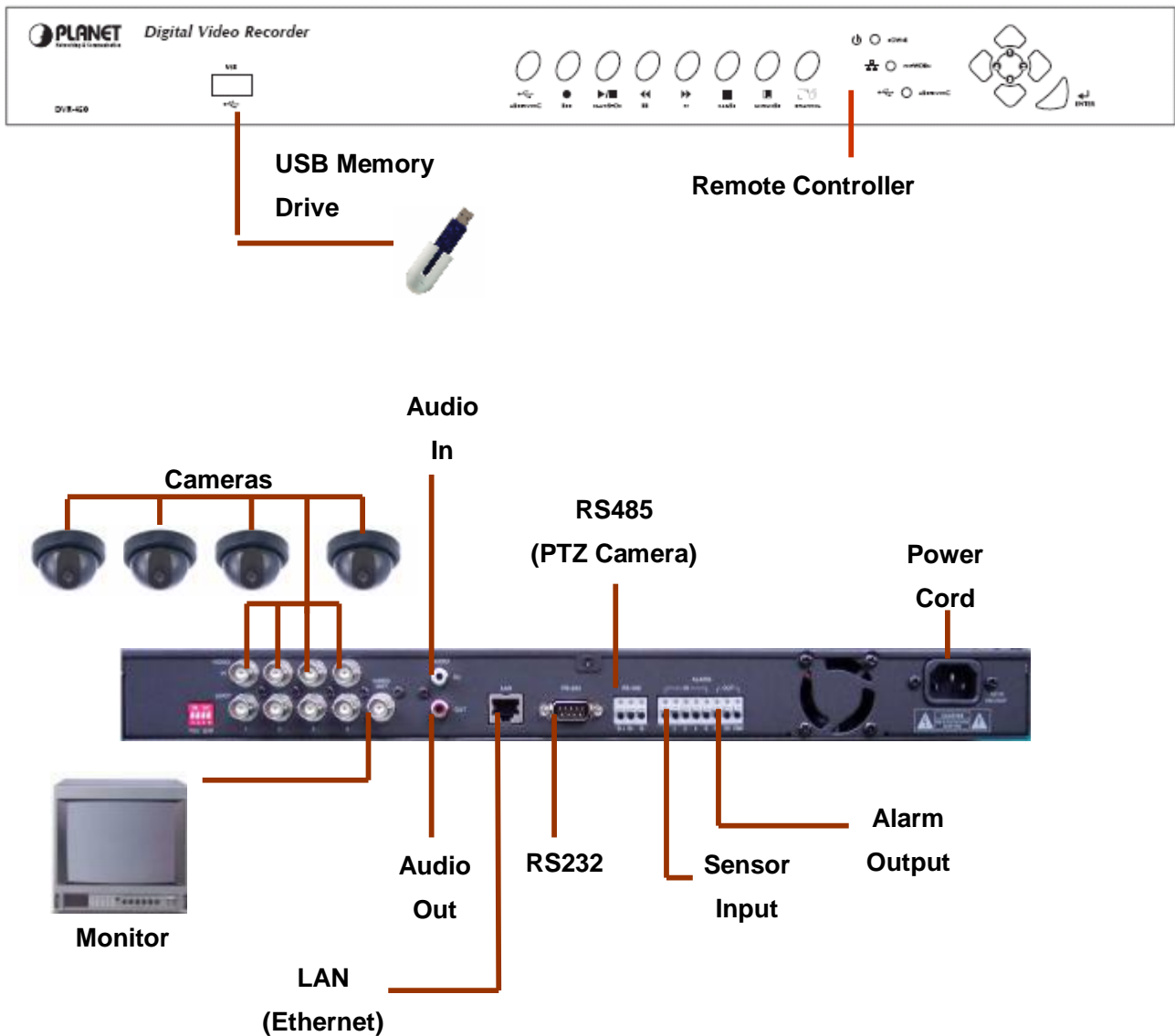
Package Content

The contents of your product should contain the following items:

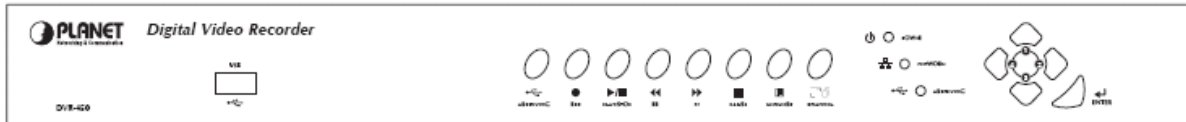
- I DVR-450
- I Power cord
- I Rack Mount Bracket
- I Quick Installation Guide
- I User Manual CD
- I Remote controller

Physical Details

Front Panel and Rear Panel Connection



Buttons Definitions



1

2 3 4 5 6 7 8 9

10

11 12

1. USB port

A USB port is provided to connect external USB memory drive for backup video.

NOTE: All working functions of DVR will stop while USB port is in use.

2. Archiving button

Whenever this button is pressed, archiving will be started.

3. REC button

Press REC (**Red circle**) button to start recording. Press REC again to stop recording. This is toggle button.

4. PLAY/ STOP button

If **PLAY/ STOP** button is pressed, search lists will be displayed. After selecting one recorded file, playback will be started by pressing **PLAY/ STOP** button. To stop playback, press this button is again. This is toggle button. While it is in FF or REW playback with high speed playback mode, this button can return to playback.

5. FF

Press this button to perform high speed forward playback. It supports 2 to 32 times playback speed.

6. REW

Press this button to perform high speed backward playback. It supports 2 to 16 times playback speed.

7. PAUSE

Press this button to pause playback.

8. MENU/ ESC

Press **MENU/ESC** button to enter system menu. Also **MENU/ESC** is used to escape upper menu and to save set-up parameter at the same time.

9. QUAD/ SEQ

This button is used for QUAD, sequential display. It is rotated as QUAD \ Sequential \ QUAD.

10. LED for Power ON, Archiving, Network Indication

1) Power On indicator

Indicates power is ON when power LED is lit.

2) Network indicator

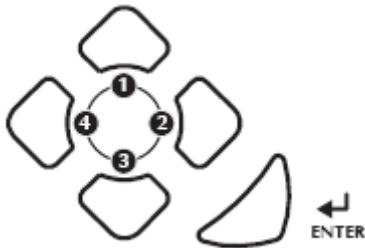
Indicates data transmission via network is performed when network LED is lit.

3) Archiving indicator: Indicates archiving has been doing when archiving LED is lit. DO NOT plug out

or terminate this task otherwise it will cause device damaged.

4) Remote controller sensor input window

11. Direction (Number) buttons



It consists of UP(1), RIGHT(2), DOWN(3), LEFT(4) buttons.

NOTE: These buttons are used in numbering input for password, in left/ right movement and increasing/ decreasing parameter for MENU.

12. ENTER button

Press ENTER button to confirm a selection.

Physical Interfaces

2



1

3

4

5

6

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10

11

1. 75 Ohm Termination Switch

If you want to connect loop-through video outputs into another video equipments, 75 Ohm termination switch should be "OFF". Then, another video equipments should be 75 ohm terminated.

If loop through video outputs are not connected to another video equipments, it should be "ON".

If 75 Ohm termination switch "ON" or "OFF" is changed, it will cause poor video quality.

2. 4CH Video Input: 4 channel composite video inputs with BNC connectors

Since this DVR automatically detects video format (NTSC or PAL) as soon as power is

ON, NTSC or PAL video sources can be connected. But NTSC and PAL video sources for 4CH video inputs can not be mixed. If they are mixed, DVR can't be operated properly.

3. 4CH Loop through outputs: 4 channel composite video outputs with BNC connectors

If the connection of loop-through video outputs into another video equipments is requested, 4CH Loop-Through outputs can be utilized for it. If loop-through video outputs will be connected to another video equipments, 75 Ohm termination switch should be "OFF". Then, another video equipments should be 75 ohm terminated.

4. Video Output 1: composite video output

Connect this video output to monitor so that live, playback pictures would be monitored.

5. Audio Input, Audio Output: Unbalanced audio signal input with RCA jack

This DVR can record audio. Connect the audio source to audio input. Connect audio output to your amplifier because the DVR does not have amplified audio output, so you will need a speaker with an amplifier. The audio input can be from an amplified source or directly from a microphone.

6. Ethernet Port: RJ45 jack

Connect a Cat5 cable with an RJ-45 jack to the DVR connector. Remote PC viewer software via network enable you to live viewing or searching.

7. RS485: For camera pan and tilting control

This DVR can be controlled remotely by remote PC software. The RS485 connector can be used to control PTZ (pan, tilt, zoom) cameras. Connect RX+, RX- of the control system to the TX+, TX- (respectively) of the DVR.

Note -----
Currently PTZ camera support Panasonic/ Pelco-D/ Pelco-P/
Techwin/ Niko/ DRX502A_DSC230s /KRE_301_302/ GC_755_NP/
TOA_CC554/ RAS716LS / LPT-100 / KD.

8. Alarm input and relay output: 4 alarm inputs and 1 relay output with NO, NC

To make secure connections on the Alarm Connector Strip, press and hold the button and insert the wire in the hole below the button. After releasing the button, tug gently on the wire to make certain it is connected. To disconnect a wire, press and hold the button above the wire and pull out the wire.

9. Alarm Inputs: 1,2,3,4,G (Ground)

You can use external devices to signal the DVR to react to events. Mechanical or electrical switches can be wired to the Alarm Inputs and GND (Ground) connectors.

The threshold voltage is 4.3V and should be stable at least 0.5 seconds to be detected.

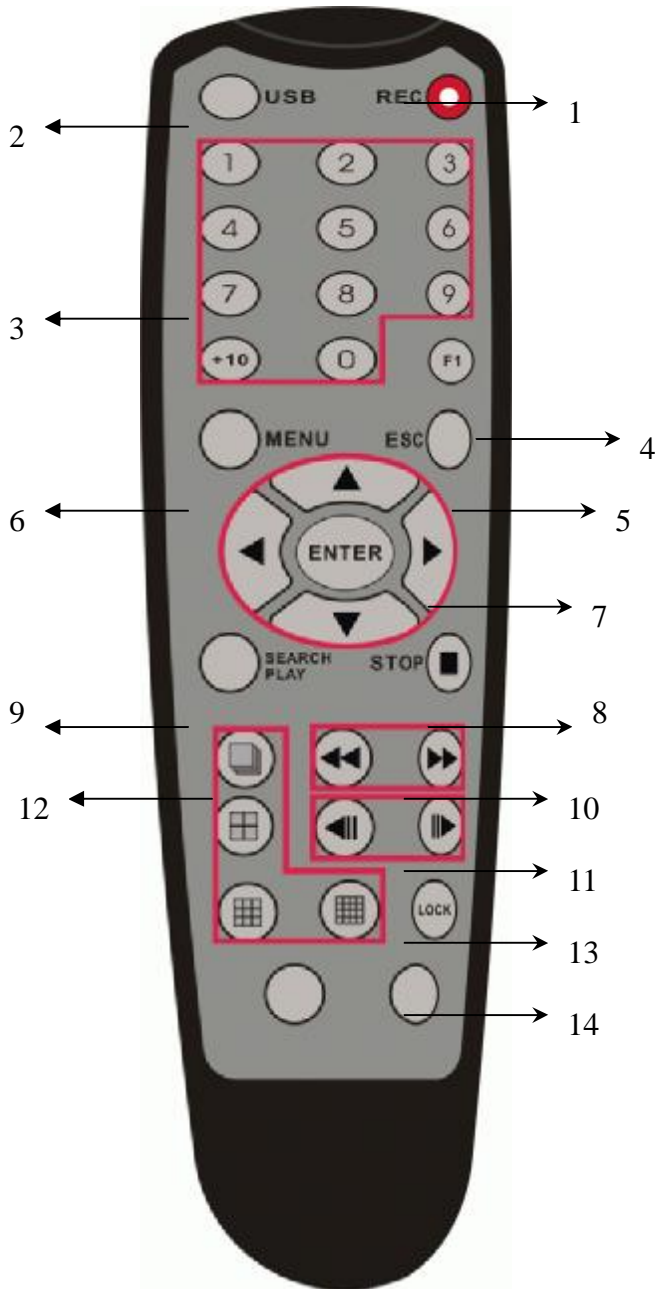
- **G** (Ground), **COM** (common): G is same as common.
Connect the ground side of the Alarm input to G (Ground). Connect the ground side of relay output to COM connector.
- **Relay output:**
The DVR support NO, NC relay output at the same time. You can select NO or NC, according to characteristic of mechanical or electrical switch.

10. FAN for cooling

11. AC outlet

Connect the power cord to the DVR and then to the wall outlet (100-240V AC).

Remote Controller



<Button Description>

1	REC	Start /Stop recording button
2	USB	Start archiving button
3	1,2,3,...0, +10	Video channel selection buttons
4	F1	Function key. (Reserved for future development.)
5	ESC	Exit to upper menu
6	MENU	Enter menu mode
7	1) UP (▲) 2) DOWN (▼)	LEFT/RIGHT button to move UP/DOWN button to change ENTER

	3) LEFT (◀) 4) RIGHT (▶) 5) ENGER	to confirm settings. (password number input, Up(1), Right(2), Down(3), Left(4))
8	STOP	Stop playback button
9	Search/ PLAY	Start playback or search event list button
10	FF, REW	Fast Playback buttons
11	Forward/backward by 1 field	PAUSE/ 1 field movement backward PAUSE/ 1 field movement forward
12	Video Picture Display mode	1) Sequential display button 2) QUAD display button 3) 9 picture display button 4) 16/8/10 picture display button
13	LOCK	LOCK Enable/Disable
14		Reserve key

ë Note

Please be sure to finish the hard disk drive installation
before using the DVR. The Maximum HDD capacity support is
400GB.

Chapter 2



DVR- 450 Menu Setup

Introduction

The DVR-450 OSD menu provides ease-of-use machine configurations; please press the **MENU** button of the front panel to enter OSD menu. Each setting item can be moved by the up and down buttons.

Menu Tree

MAIN MENU

- 1 **SYSTEM SETUP**
- 2 DISPLAY SETUP
- 3 RECORDING SETUP
- 4 ALARM SETUP
- 5 MOTION SETUP
- 6 WEEKLY SCHEDULE
- 7 NETWORK SETUP
- 8 ARCHIVING
- 9 HDD INFORMATION

SYSTEM SETUP

- 1 **LANGUAGE**
- 2 VIDEO FORMAT
- 3 PASSWORD
- 4 ADMIN LOCK
- 5 TIME FORMAT
- 6 DATE FORMAT
- 7 DATE/TIME SET
- 8 DEFAULT

DISPLAY SETUP

- 1 **ADJUST CHANNEL**
- BRIGHTNESS
- CONTRAST
- PTZ TYPE
- 2 SEQ DWELL TIME
- 3 TIME/DATE OSD
- 4 CAM NUMBER OSD
- 5 VIDEO LOSS OSD
- 6 POP-UP DISPLAY
- 7 POSITION

ALARM SETUP

- 1 **FRAME RATE**
- 2 DURATION
- 3 SENSOR TYPE
- 4 TRIGGER OUT
- 5 BUZZER ALERT

RECORDING SETUP

- 1 **QUALITY**
- 2 FRAME RATE
- 3 AUDIO
- 4 STOP KEY

MOTION SETUP

- 1 **SENSITIVITY**
- 2 FRAME RATE
- 3 DURATION
- 4 CAM1
- 5 CAM2
- 6 CAM3
- 7 CAM4
- 8 BUZZER ALERT

NETWORK SETUP

- 1 **CONNECT**
- 2 IP ADD
- 3 SUB NET
- 4 GATE WAY
- 5 DNS
- 6 PORT
- 7 NTP TIME
- 8 TIME ZONE
- 9 DDNS STATUS

WEEKLY SCHEDULE

WEEK	START	DURATION
SUN	00: 00	00: 00
MON	00: 00	00: 00
TUE	00: 00	00: 00
WED	00: 00	00: 00
THU	00: 00	00: 00
FRI	00: 00	00: 00
SAT	00: 00	00: 00

ARCHIVING

- 1 **ARCHIVING TYPE**
- 2 ARCHIVING TIME
- 3 ARCHIVE INFO
- NAME: / TOTAL:
- 4 ARCHIVE LOG

HDD INFORMATION

- 1 **HDD DISK**
- TOTAL
- FREE
- 2 FORMAT HDD
- 3 OVERWRITE

MAIN MENU

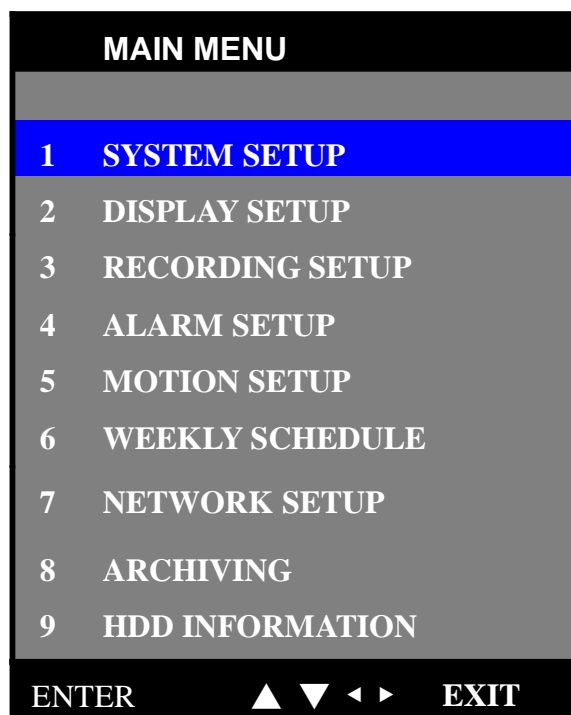
Press **MENU/ESC** button of DVR front panel.

If **ADMIN LOCK** is set as YES (factory default is YES), below figure will be appeared. Input default password 1111 and press **ENTER** button. **MAIN MENU** will be appeared.



ë Note

Please setup a new password in **SYSTEM SETUP** menu for security reason.



Operation Buttons



◀(LEFT/4), ▶(RIGHT/2), ▲(UP/1), ▼(DOWN/3) and ENTER buttons.

To enter or escape the DVR Main Menu, press MENU/ESC. Buttons for movement in Menu are ▲(UP/1), ▼(DOWN/3). Buttons for changing parameter of selected item are ◀(LEFT/4), ▶(RIGHT/2). Button for selection is ENTER. Press MENU/ESC to return to the previous MENU after setting and to save the values of setup.

SYSTEM SETUP

To enter **SYSTEM SETUP** menu, moving highlight bar to **SYSTEM SETUP** item in **MAIN MENU**, then press ENTER button.

SYSTEM SETUP		
1	LANGUAGE	: ENG
2	VIDEO FORMAT	: NTSC
3	PASSWORD	: ****
4	ADMIN LOCK	: YES
5	TIME FORMAT	: 24HOURS
6	DATE FORMAT	: MM-DD-YY
7	DATE/TIME SET	:
	2005: 10: 25	10:50:11
8	DEFAULT	: YES / NO
9	REV STATUS	: VERSION
		1.2.1
ENTER ▲ ▼ ◀ ▶ EXIT		

1) **LANGUAGE:** English, Chinese, and Japanese.

Choose a proper language by ◀(LEFT/4), ▶(RIGHT/2) buttons.

2) **VIDEO FORMAT:** NTSC/ PAL

Video format is automatically detected after power ON. The detected video information will be displayed on this item. Users do not need to change video format.

Note

.....
Please connected video signals to the channel inputs first before power on the DVR. The default video format is PAL if there are not any video signals connected.
.....

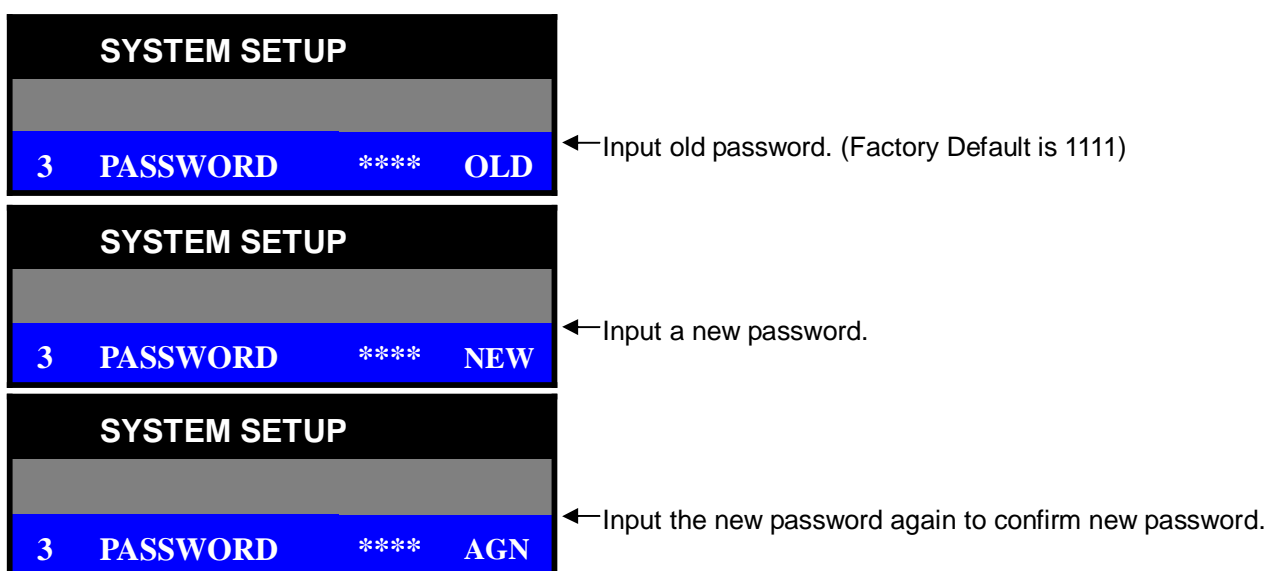
Since DVR will detect the video format automatically, please do not mix the NTSC/PAL cameras, otherwise, display will be abnormal.

3) PASSWORD:

Move Highlight bar to **PASSWORD** item using ▲ (**UP/1**), ▼ (**DOWN/3**) button.

And then press **ENTER** to change four-digit password, press ◀ (**LEFT/4**), ▶ (**RIGHT/2**),

▲ (**UP/1**), ▼ (**DOWN/3**) buttons to input digits



4) ADMIN LOCK: YES/ NO

Move Highlight bar to **ADMIN LOCK** item.

If ADMIN LOCK is selected as YES then password is requested whenever entering menu. If NO, then password is not required.

5) TIME FORMAT: 24/ 12 HOURS

24 HOURS (military time, ex: 16:00) or 12 HOURS (AM/PM, ex: 4:00 PM). Whenever time format is changed, clock information on display monitor and playback will be changed together.

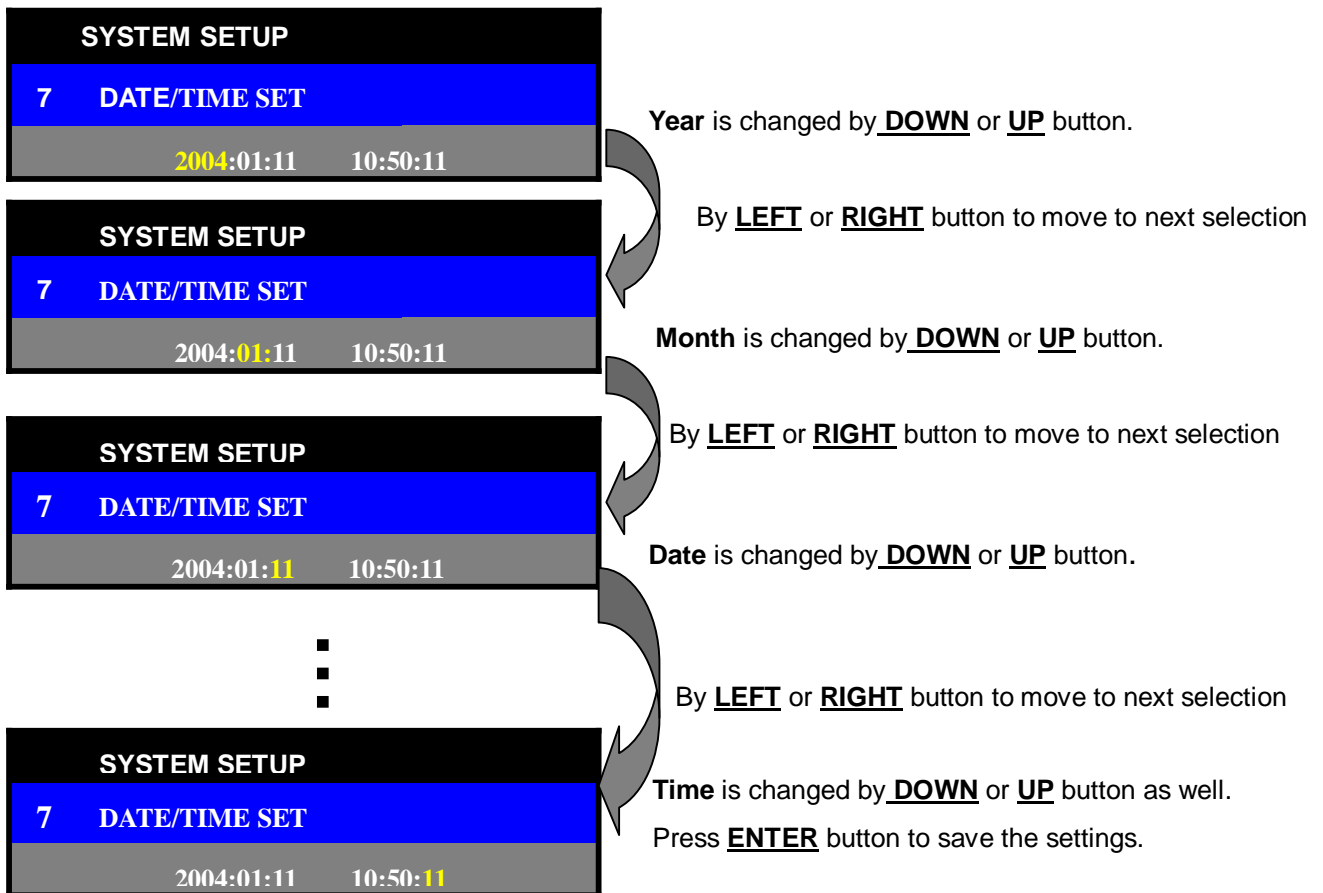
6) DATE FORMAT: MM-DD-YY/ DD-MM-YY/ MM-DD-YY

Choose a proper date format.

7) DATE/ TIME SET:

Move Highlight bar to **DATE/TIME SET** item, and then press **ENTER** to set the time.

ë **Note** Before starting your DVR, **DATE/ TIME SET** should be setting properly.
If date and time is set older than some of your recorded files, it will be difficult to manager DVR files.



ö Note

.....
MENU/ESC button can be used to return to upper menu. After
 setting the DATE and TIME, please remember press ENTER
 button to save the settings.

8) DEFAULT: YES/ NO

Return to factory default mode.

9) REVISION STATUS

It shows DVR software version. Whenever upgrading software, upgraded version will be displayed.

DISPLAY SETUP

To access **DISPLAY SETUP**, press **ENTER** button after moving highlight bar to this item in MAIN MENU.

Below menu will appear on monitor.

DISPLAY SETUP		
1	ADJUST CHANNEL	CH1
	BRIGHTNESS	1-99 %
	CONTRAST	1-99 %
	PTZ TYPE	
2	SEQ DWELL TIME	NONE, 1-60 SEC
3	TIME/ DATE OSD	ON/ OFF
4	CAM NUMBER OSD	ON/ OFF
5	VIDEO LOSS OSD	ON/ OFF
6	POP-UP DISPLAY	ON/ OFF
ENTER ▲ ▼ ◀ ▶ EXIT		

1) ADJUST CHANNEL: CH1 / CH2 / CH3 / CH4

Select the camera channel to adjust brightness, contrast or PTZ type.

BRIGHTNESS: 1 to 99 %

BRIGHTNESS can be changed using **LEFT** or **RIGHT** button

ë **Note** Higher percentage shows brighter image.

CONTRAST: 1 to 99 %

CONTRAST can be changed using **LEFT** or **RIGHT** button.

PTZ TYPE (Pan, Tilt and Zoom protocol selection)

Each camera has its own control protocol to control panning, tilting and zooming, according to PTZ camera manufacturer. In order to control PTZ camera from remote area by DVR utility, proper PTZ TYPE should be selected here.

ë **Note** Currently support PTZ camera Panasonic/ Pelco-D/ PelcoP/ Techwin/ Niko/ DRX502A_DSC230s /KRE_301_302/ GC_755_NP/ TOA_CC554/ RAS716LS / LPT-100 / KD.

2) SEQ DEWLL TIME: NONE/ 1 to 60 seconds.

It is the period of sequential display mode.

3) TIME/DATE OSD: ON/ OFF

When it is set as OFF, time and date will disappear on monitor. But time and date information still are added into recording files.

4) CAM NUMBER OSD: ON/ OFF

When it is set as OFF, camera number character will disappear on monitor.

5) VIDEO LOSS OSD: ON/ OFF

When it is set as OFF, black pictures will be displayed in the cameo with video loss.

When it is set as ON, "VIDEO LOSS" character will be displayed in blue screen.

6) POP-UP DISPLAY: ON/ OFF

When it is set as ON, the channel image will POP-UP up to maximum 30 seconds if any motions are detected in enabled motion detection camera or any external alarm is triggered. When it is set as OFF, the channel image will not pop-up if there is any motion detected.

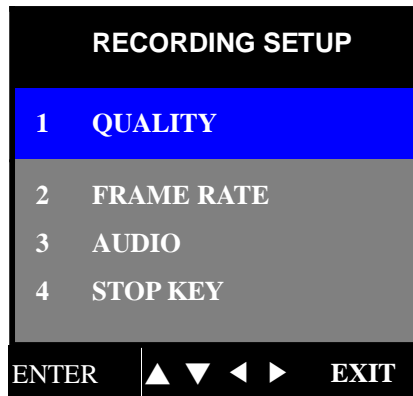
In case that motion detection or alarm event is occurred more than two channels, POP-UP picture will be appeared in monitor turn by turn during 3 seconds for each channel. Total period of POP-UP display is 30 seconds.

7) POSITION:

Channel display position can be adjusted by this item. Even same video signal can be displayed on different position of monitor by the deflection characteristic of it.

POSITION		
1	VERTICAL	: 52
2	HORIZONTAL	: 205
3	DEFAULT	: NO

RECORDING SETUP



To access RECORDING SETUP, press ENTER when RECORDING SETUP in MAIN MENU using DOWN or UP is highlighted with blue color. The menu above will appear on monitor.

1) QUALITY: LOW / STANDARD / STANDARD PLUS / HIGH

The DVR supports four recording qualities depending on practical bandwidth.

2) FRAME RATE: 60, 30, 15, 10, 5, 1, 0.5 IPS. (NTSC)

50, 25, 12, 10, 5, 1, 0.5 IPS. (PAL)

Several frame rates can be chosen for user's need from 0.5 to 60 Image per seconds for NTS from 0.5 to 50 IPS for PAL. It can be selected using LEFT or RIGHT button.

Note Some parameters related to recording function can not be changed while DVR is recording.

The following is the recording table (unit: capacity KB per second)

FPS \ Quality	60	30	15	10	5	1	0.5
LOW	780	390	195	130	65	13	6.5
STANDARD	1020	510	255	170	85	17	8.5
STD PLUS	1200	600	300	200	100	20	10
HIGH	1500	750	375	250	125	25	12.5

Note

RECORDING FRAME RATE TABLE

The higher the record frame rate is; the more natural look will be displayed on the screen when playing back. But the lower the record frame rate is, the more you can save the space on HDD.

3) AUDIO: ON/ OFF

Select ON to record audio signal with video signal together or not.

It can be selected using LEFT or RIGHT button.

4) STOP KEY: DISABLE/ ENABLE

Disbale **STOP KEY** can protect the DVR from pressing the recording toggle key unintentionally to stop recording.

ë Note

While DVR is in recording mode, changing the settings related to recording function is not effective, such as recording quality, frame rate, audio and date/ time setup in SYSTEM SETUP.

ALARM SETUP

ALARM SETUP		
1	FRAME RATE	: 60/ IPS
2	DURATION	: 3 MIN
3	SENSOR TYPE	: N.O
4	TRIGGER OUT	: DISABLE
5	BUZZER ALERT	: DISABLE

ENTER ▲ ▼ ◀ ▶ EXIT

1) FRAME RATE: 60, 30, 15, 10, 5, 1, 0.5 IPS.(NTSC)

50, 25, 12, 10, 5, 1, 0.5 IPS. (PAL)

This is the recording frame rate of alarm recording.

2) DURATION:

This is a recording duration after alarm is triggered. This DVR support 10, 30 seconds, 1,2,3,4,5,6,7,8,9,10,20,30,40,50,60 minutes. It can be selected using **LEFT** or **RIGHT** button.

3) SENSOR TYPE: NONE/ N.O/ N.C

DVR can select the input type for external alarm relay, which usually has normal open, or normal close using **LEFT** or **RIGHT** button.

4) TRIGGER OUT (Relay Output): DISABLE/ ENABLE

DVR support both dry open and dry contact through different relay output port.

It can be selected using **LEFT** or **RIGHT** button.

5) BUZZER ALERT: DISABLE/ ENABLE

If external alarm sensor(s) be triggered, beep sound from buzzer would be occurred during two seconds while choosing ENABLE.

MOTION SETUP

DVR has built-in video motion detection function. Motion detection area can be selected separately for each camera. When your DVR detects motions, it begins to record multiplexed video signals from the camera which motion is detected and display that camera image with up to 30 seconds while selecting POP-UP DISPLAY \Rightarrow On. (Refer to the section **DISPLAY SETUP \Rightarrow POP-UP DISPLAY**)

To access MOTION SETUP, using **DOWN** or **UP** button to select the item in MAIN MENU, then press **ENTER** into setup menu when MOTION SETUP is highlighted with blue color. The menu below will appear on monitor.

MOTION SETUP		
1	SENSITIVITY	: normal
2	FRAME RATE	: 60/ IPS
3	DURATION	: 1 MIN
4	CAM1	: DISABLE
5	CAM2	: DISABLE
6	CAM3	: DISABLE
7	CAM4	: DISABLE
8	BUZZER ALERT	: DISABLE
ENTER ▲ ▼ ◀ ▶ EXIT		

1) SENSITIVITY: 5 steps (very low, low, normal, high, very high)

DVR supports 5 sensitivity levels. Higher sensitivity will detection motions easily even there is a brightness change. It can be selected using **LEFT** or **RIGHT** button.

2) FRAME RATE: 60, 30, 15, 10, 5, 1, 0.5 IPS.(NTSC)

50, 25, 12, 10, 5, 1, 0.5 IPS. (PAL)

The recording frame rate after motion is detected. It can be selected using **LEFT** or **RIGHT** button.

3) DURATION:

It defines recording duration after motion is detected. This DVR support 10 ,30sec, 1,2,3,4,5,6,7,8,9,10,20,30,40,50,60 minutes. It can be selected using **LEFT** or **RIGHT**

button.

4) CAM1, CAM2, CAM3, CAM4: DISABLE/ ALL/ SETUP

DISABLE means that function of motion detection is unavailable.

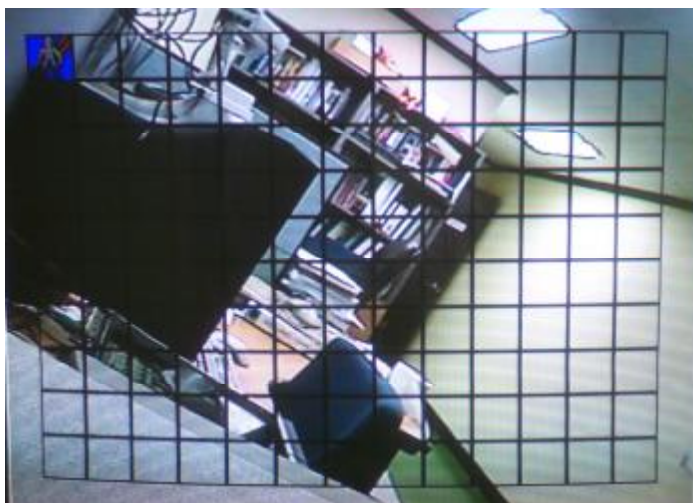
ALL means that entire image area is selected for motion detection.

SETUP can determine image area where want to be monitored. Total motion area consists of 14x10 blocks. To select arbitrary motion zone, select **SETUP** using **LEFT** or **RIGHT** button. And then press **ENTER** button to designate motion areas in 14x10 blocks. You can use **LEFT** or **RIGHT** button for horizontal movement **UP** or **DOWN** button for vertical movement, **ENTER** button for selection. User can define the area of the image where you don't want to detect motion and vice versa.

Selected blocks in 14x10 blocks will be blinking and those areas are NOT used for motion detection areas.

To remove previous defined image blocks for motion detection, press **ENTER** button again at the specific blinking block. Finish defining motion detection zone, press **MENU/ESC** button to return to upper Menu.

Motion detection zone is the area which edge of the motion blocks is not flickering.



< The example of motion area setup >

5) BUZZER ALERT: DISABLE/ ENABLE

If motions are detected in decided motion detection area, beep sound from buzzer by would be occurred during two seconds by selecting ENABLE.

WEEKLY SCHEDULE

To access WEEKLY SCHEDULE, using **DOWN** or **UP** button to select the item in MAIN MENU, then press **ENTER** into setup menu when WEEKLY SCHEDULE is highlighted with blue color. The menu below will appear on monitor.

WEEKLY SCHEDULE			
WEEK	START	DURATION	
SUN	00: 00	00: 00	OFF
MON	00: 00	00: 00	OFF
TUE	00: 00	00: 00	OFF
WED	00: 00	00: 00	OFF
THU	00: 00	00: 00	OFF
FRI	00: 00	00: 00	OFF
SAT	00: 00	00: 00	OFF
HOLIDAY	NONE	NONE	OFF

ENTER ▲ ▼ ◀ ▶ EXIT

Select days by moving the blue bar from SUN to SAT and HOLIDAY With **DOWN** or **UP** button. To return to Main Menu, press **MENU/ESC** button. Move to START, DURATION and OFF/ ON setting use **LEFT** or **RIGHT** button to the location then use **DOWN** or **UP** button to decide the desired time for START time, DURATION and OFF/ ON.

START: The start time of schedule recording.

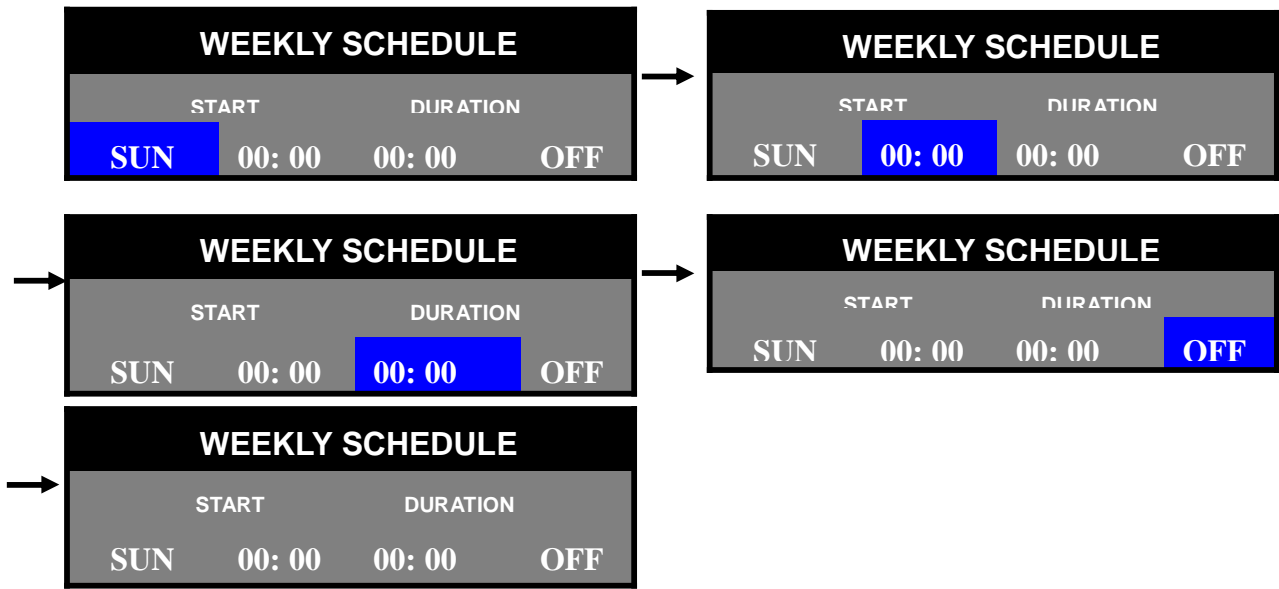
DURATION: The recording period of schedule recording.

OFF/ ON: Disable or enable the scheduled recording task.

ö Note

Duration means total recording time, not ending time, for example, schedule recording during 8:00 am to 9:00 am, then set START 08:00, DURATION, 01:00.

For example, the blue bar movement by **LEFT** or **RIGHT** Button like below. When blue bar is placed on **START**, **DURATION** and **OFF/ ON**, you can change value by pressing **DOWN** or **UP** button



.When there is no bold character, blue bar can move from **SUN** to **SAT** and **HOLIDAY**. **START** means recording starting time. It can be changed from 00:00 to 23:59. **DURATION** means total recording time duration. **HOLIDAY** is for holiday recording setup. It can be adjusted from **SUN** to **SAT**.

ë Note

Make sure **DATE/TIME** setting in **SYSTEM SETUP** is correct before setting the schedule recording.

NETWORK SETUP

To access NETWORK SETUP, using **DOWN** or **UP** button to select the item in MAIN MENU, then press **ENTER** into setup menu when NETWORK SETUP is highlighted with blue color. The menu below will appear on monitor.

NETWORK SETUP		
1	CONNECT	: STATIC/ DHCP
2	IP ADD	192. 168. 123. 171
3	SUB NET	255. 255. 255. 000
4	GATE WAY	192. 168. 123. 254
5	DNS	168.126.063.001
6	PORT	5000
7	NTP TIME	OFF/ON
8	TIME ZONE	GMT + 08:00
9	DDNS STATUS	NONE/OK/ERR
ENTER ▲ ▼ ◀ ▶ EXIT		

1) CONNECT: STATIC / DHCP

Select STATIC or DHCP to set up DVR IP address using **LEFT** or **RIGHT** Button.

STATIC: Fixed IP. Directly enter the IP address and related items according to user's network topology. Please make sure to use a vacant IP address for DVR. This will prevent errors from occurring if the IP address is overlapped. Please consult your MIS personnel to setting the IP address for proper remote viewing.

DHCP: DVR is automatically assigned an IP address from DHCP server. Each time triplex DVR series starts up, be sure the DHCP server is setup ready to assign a static IP to your DVR as a DHCP client.

Note

Remote access via web browser or NetViewer utility can not be concurrently. One administrator can be allowed to login.

2) IP ADDRESS, 3) SUBNET, 4) GATEWAY:

If static IP is selected, IP address, subnet mask, and gateway values should be assigned manually, according to user's network environment. **LEFT** or **RIGHT** button is used for item movement, **DOWN** or **UP** button is used for changing the value of parameter.

If DHCP is selected, the DVR should receive network related parameters automatically from DHCP server and those values will be displayed on IP ADD, SUBNET and GATEWAY item.

5) DNS:

DNS (Domain Name System) server is an Internet service that translates domain names into IP addresses. Enter a correct DNS IP Address in this field.

6) PORT: Default is 5000.

Port number is used for TCP/IP connection between DVR and remote computers.

ë Note

.....
Computers installed with NetViewer utility should use the same port number to access remote DVR through network. Do NOT block this port in firewall or personal firewall software.
.....

If using default port 5000, port number of from 5000 to 5002 is reserved for DVR image transmission and 5002 is reserved for HTTP of Internet Explorer, ex: <http://192.168.0.20:5002> . Therefore, if any firewall or personal firewall software is built up, port number of from 5000 to 5002 should be opened for DVR's the Internet access purpose.

If IP sharing device is used in network environment, "port forwarding" / "port mapping" should be configured properly.

7) NTP TIME: OFF/ON

DVR can synchronize "standard time" with time server using Network Time Protocol.

ë Note

.....
NTP TIME function can not be switched while DVR in recording mode.
.....

8) TIME ZONE SETTING: GMT + 08:00

Select the time zone for the region to synchroniz the DVR with regional time server.

For example to synchronize time in Taiwan choosing GMT + 8, GMT + 9 for Korea or Japan.

9) DDNS STATUS: NONE / ERR / OK

Dynamic DNS status display. It is recommended not to use this DDNS service for fixed IP or IP sharing machine.

NONE: It indicates that DDNS is not used.

ERR: DDNS IP update failure

OK: Normal operation

ë Note

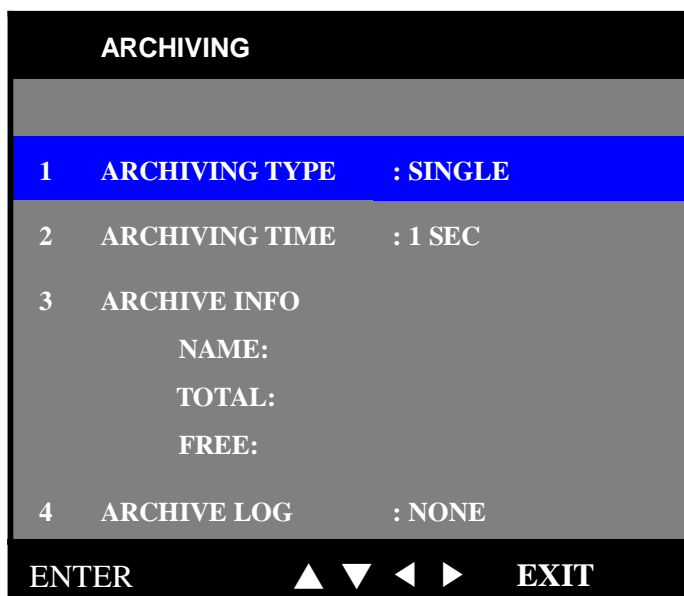
.....
This DDNS status is used for checking status and it can not be configured
.....

< How to use DDNS service >

1. Create User ID, password and domain Name in the company which support DDNS service with free of charge. (Ex: www.dyndns.org)

2. Access to your DVR by NetViewer software.
3. Input User ID, password, DDNS server (**Ex: members.dyndns.org**) and “DDNS enable” received from company which support DDNS service in DDNS setting of remote setup of NetViewer.
DVR will be updated as soon as DDNS setting in NetViewer software is finished.
4. Check the status in DVR OSD of 8. DDNS STATUS of NETWORK SETUP. If it displays OK, then the domain name can be used properly.

ARCHIVING



1) ARCHIVING TYPE: SINGLE / MOTION

For archiving data via USB port, first set up ARCHIVING TYPE and ARCHIVING TIME which you want to have using **LEFT** or **RIGHT** Button. And then insert USB memory drive to USB port of DVR front panel. Press **ARCHIVEING** button in playback mode or live mode.

SINGLE: field by field image can be captured in USB memory drive.

MOTION: it can be captured during the time duration when you set in ARCHIVE TIME.

ë Note

Archiving operation through USB Memory Drive can be executed only in live mode or playback mode. All working functions of DVR will stop while using archiving. EX: recording.

2) ARCHIVE TIME: 1 to 60 seconds and 30 Minute.

ARCHIVE TIME is a duration which you want to archive in MOTION type.

3) ARCHIVE INFO:

Insert USB memory drive in USB port of DVR front panel. And then enter ARCHIVING menu. You can see the information of USB Memory Drive displayed, such as USB memory drive manufacturer, total memory size, available memory size.

4) ARCHIVE LOG: NONE / ENTER

Select ENTER to ARCHIVE LOG through USB memory drive by using **LEFT** or **RIGHT** Button. Then press **ENTER** button. All log information including DVR power ON/ OFF, recording time, event time and so on can be backup through USB Memory drive. After backup log file, user can check the backup log information using WordPad in computer.

ë Note

Don't keep connecting USB Memory drive in USB port of DVR after finishing DVR power up. And don't plug out USB Memory drive when it is in processing. Please plug out USB memory drive after "ARCHIVING" LED turn off. When playback pictures is archived, archived speed is followed by playback speed.

Playback archived video files

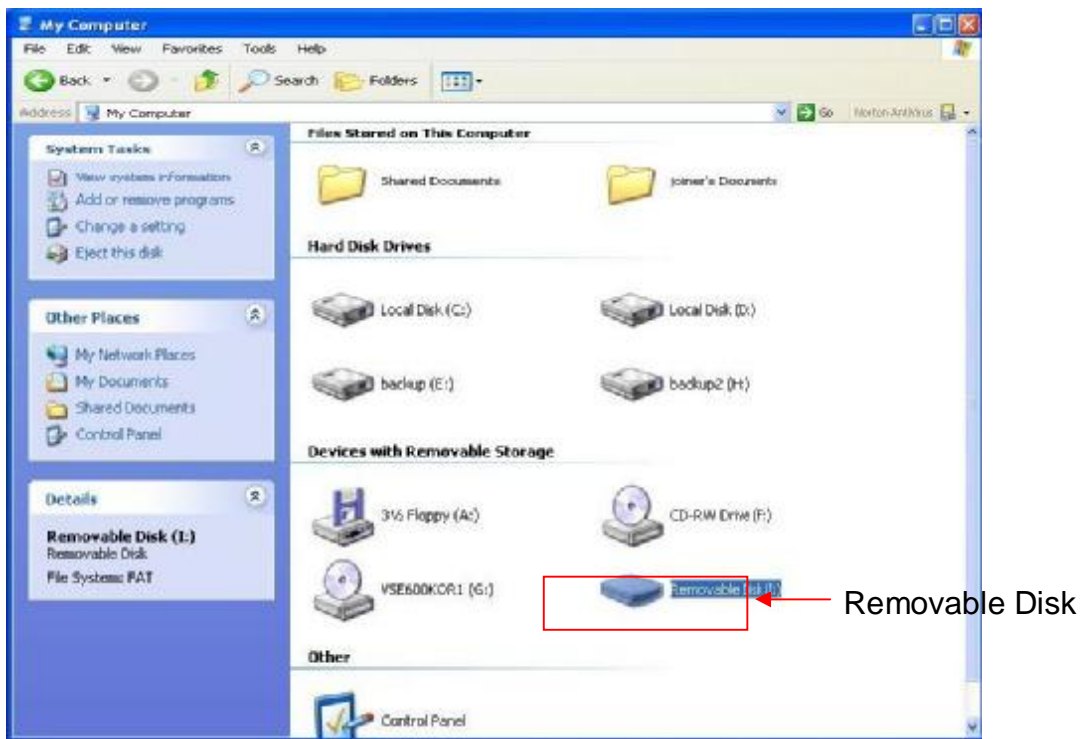
Use NetViewer utility to play archived images.

To playback archived image file in USB memory driver, First connect USB memory drive to PC, then execute Netviewer program.

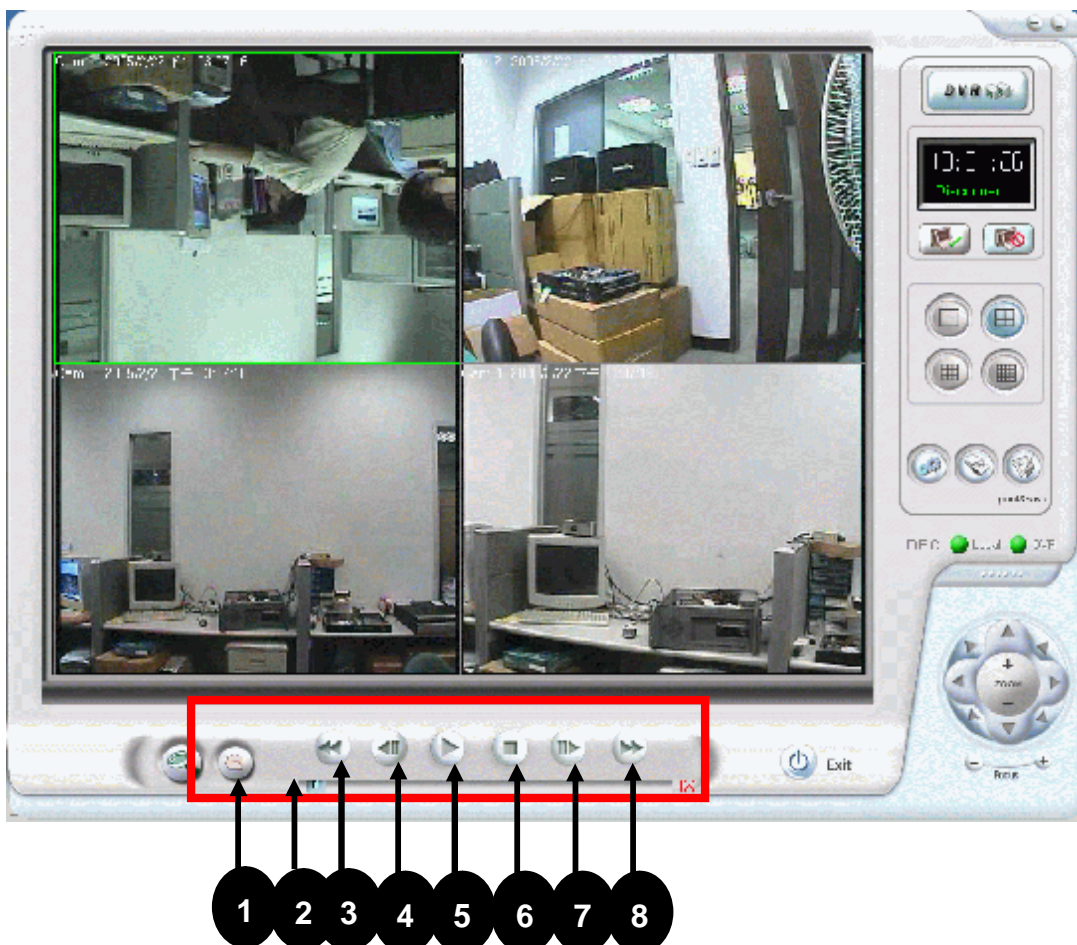
The procedure of playing archived files:

- A) Install NetViewer utility and execute the utility after finishing installation.
- B) Double-click the icon to execute NetViewer utility. Main screen of NetViewer utility will be appeared. (refer to the next page figure.)
- C) Connect USB Memory drive to USB port of computer / notebook
- D) Make sure NetViewer is in local searching mode by checking the DVR/LOCAL icon in the upper right site of NetViewer screen.
- D) Search archived files using searching icon of NetViewer utility. And locate the proper file path.
- E) Playback the archived file.

USB Memory driver usually will be recognized as removable disk in most of computer.
An example of recognizing USB Memory drive in computer:



Playback icons introduction:



NetViewer main screen

1. Search Button:

This button can be used to find local recorded image files. After searching the image files, double-click the file. And then it will be played back.

2. Slide bar;

In order to move faster to playback the necessary video, just drag this slide bar forward or backward.

3. Decrease playback speed

4. Move single frame backward

5. Playback button

6. STOP/ PAUSE button

7. Move single frame forward

8. Increase playback speed

HDD INFORMATION

HDD INFORMATION		
1	HARD DISK	:MASTER
	TOTAL	: 111GB
	FREE	: 111GB
2	FORMAT HDD	: NO
3	OVERWRITE	: OFF
ENTER ▲ ▼ ◀ ▶ EXIT		

1) HARD DISK:

DVR automatically detects HDD and displays HDD information in menu such as total HDD capacity and available memory space.

ë Note

Support max.400GB hard drive disk per slot. It is suggested not to install two seagate HDDs in DVR, since of the HDD power conclit issue.

2) FORMAT HDD:

This supports quick HDD format function. Select **YES** using **LEFT** or **RIGHT** button, and then press **ENTER** button. Press **ENTER** button again after **MASTER** is displayed. Then quick format is implemented with **CONFIRM**.

ë Note

All the video files in the HDD will be formatted and can not be recovered. Please backup the important video files before format the HDD.

3) OVERWRITE: ON / OFF

DVR can enable cycle recording when HDD has not enough free space.

PLAYBACK Configurations

If you'd like to view the recorded video files, the front panel buttons can be used to operate various playback functions.

Press „ button, then the playback time /events selection menu as the below figure appears on the screen. Or you can simply press „ twice to start playing directly.

Search List

SEARCH LIST					10/ 10
LIST TYPE			ALL	10-15-2005	
1	10-15-2004	10:20	10-15-2004	11:20	
2	10-15-2004	12:20	10-15-2004	13:20	
3	10-15-2004	13:20	10-15-2004	14:20	
4	10-15-2004	14:20	10-15-2004	15:20	
5	10-15-2004	16:20	10-15-2004	17:20	
6	10-15-2004	18:20	10-15-2004	18:50	
7	10-15-2004	19:20	10-15-2004	19:25	
8	10-15-2004	20:20	10-15-2004	20:25	
9	10-15-2004	21:20	10-15-2004	21:50	
10	10-15-2004	22:00	10-15-2004	23:10	
ENTER					EXIT

← The current list / Total lists

← Latest recorded file

Search list can classify all the recorded file as **ALL/ TIME/ MANUAL/ ALARM/ MOTION/ SCHEDULE** using **DOWN** or **UP** button to change the proper recorded file category to accelerate the searching speed.

SEARCH LIST					10/ 10
LIST TYPE			ALL	10-15-2005	
1	10-15-2004	10:20	10-15-2004	11:20	



SEARCH LIST					10/ 10
LIST TYPE			SCHEDULE	10-16-2005	
1	10-16-2005	10:20	10-16-2005	11:20	

Change the date by highlighting them and using the **DOWN** or **UP** button to increase or decrease the number for year/ month/ date after moving to date, EX, 2005-10-15 using **LEFT** or **RIGHT** Button.

SEARCH LIST					10/ 10
LIST TYPE		ALL	2005-10-15		
1	10-15-2004	10:20	10-15-2004	11:20	
10	10-15-2004	22:00	10-15-2004	23:10	

SEARCH LIST					10/
LIST TYPE		ALL	2005-10-15		
1	10-15-2004	10:20	10-15-2004	11:20	
10	10-15-2004	22:00	10-15-2004	23:10	

To select recorded file for playback, pressing **ENTER** button to enter a recording category then using **DOWN** or **UP** button to select a file to playback.

NOTE:

1. If **PLAY/ STOP** button is pressed two times successively, the latest recorded file will be played.
2. The example for searching recorded files by **TIME**.







Search list by **TIME** can be selected from **ALL/ TIME/ MANUAL/ ALARM/ MOTION/ SCHEDULE** using **DOWN** or **UP** button.

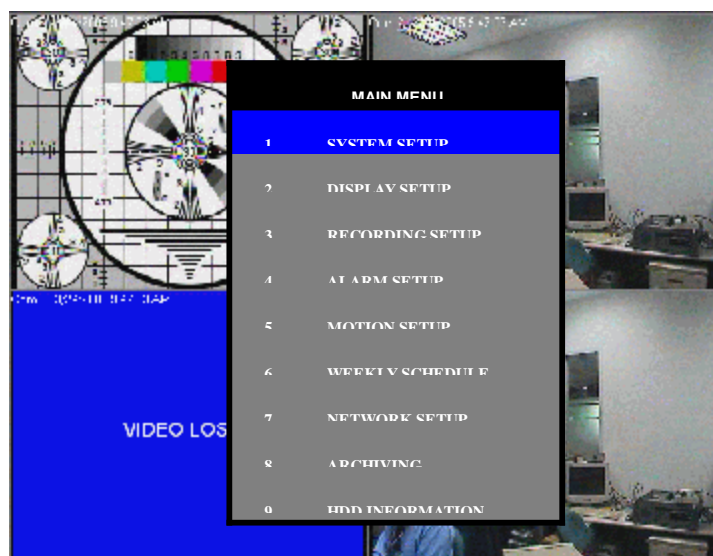
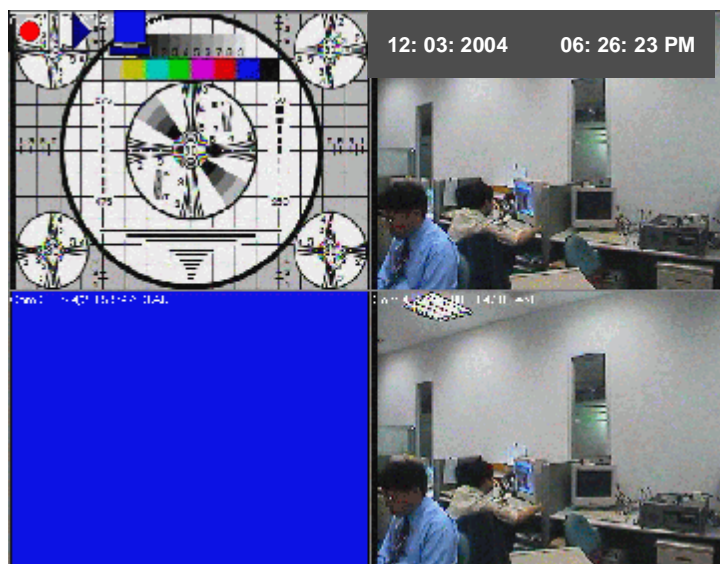
After moving 11-20-2004 date area using **LEFT** or **RIGHT** Button (and then related date character would be turned into bold character), the date which want to search can be selected by using **DOWN** or **UP** button. Then recorded files would be listed as bellows following by selected date, time (ex, **11-20-2005 10:33**). To playback a recorded file from listed files, press **ENTER** button to move listed files. And then press **PLAY/ STOP button** (▶) for playback after selecting the recorded file using **DOWN** or **UP** button.

SEARCH LIST					2/ 2
LIST TYPE		TIME	11-20-2005	10:33	
1	11-20-2005	10:33	11-20-2005	11:20	
2	11-20-2005	22:00	11-20-2005	23:10	

Display mode

There are three kind of display modes: single (as full), QUAD, sequential mode regardless recording mode. When there are motion detection or alarm triggering, the video channel which motion is detected or alarm is triggered would be display as a full screen on monitor during 30 seconds, then back to previous display mode such as full, QUAD or sequential picture.

When DVR is in recording, playback and network mode, icons    are displayed on left top corner of monitor. But it is on MENU Mode,    are temporarily disappeared, the playback is still playing.



Picture Display Mode

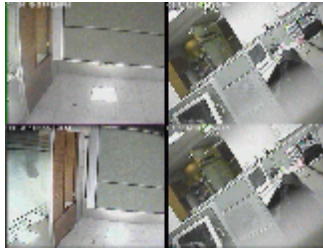
A) Full Picture



If each video channel selection is pressed, the channel will be displayed as full screen. The video channel from CH11 to CH16 in remote controller can be selected with “+10 ” button and 1 digit button together.

Ex) For selecting CH15, press” +10” and then press “5 “ number.

B) QUAD Picture



If QUAD picture button is pressed first time, QUAD picture with CH1 to CH4 will be displayed on monitor. Whenever it is pressed, QUAD picture displayed on monitor will be changed from CH1-CH4, CH5-CH8, CH9-CH12 to CH13-CH16 in turns. The QUAD picture display mode for monitoring can be selected by pressing this button repeatedly.

C) Sequential Picture Display

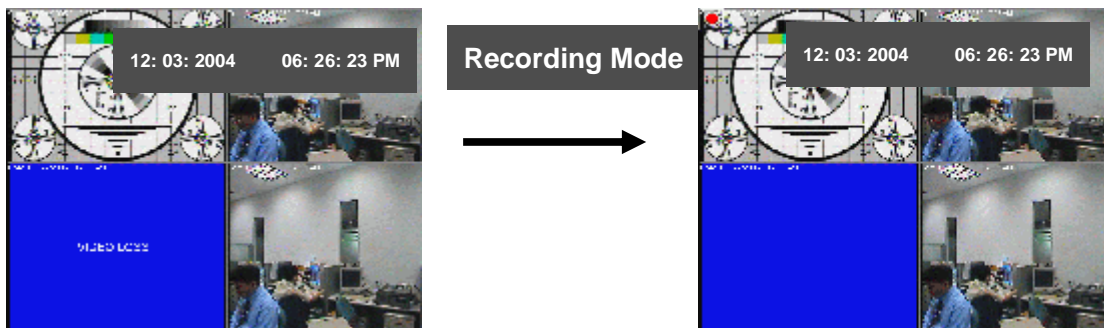
All video channels connected with video inputs of DVR are sequentially displayed on monitor via SPOT connector.

Recording mode

There are several kinds of recording modes such as Manual, Schedule, Alarm event, Motion Detection mode. Recording quality including high, standard plus, standard, low for all of recording is set up in QUALITY setting of **RECORDING SETUP** menu. Frame rate, motion / alarm recording duration can be separately selected in each of **RECORDING SETUP**, **ALARM SETUP**, and **MOTION SETUP** menu.

It is recorded on HDD that 4Ch video input signals are multiplexed with field by field.

- 1) Manual recording is started by pressing REC/STOP button of front panel.
- 2) WEEKLY RECORDING can be started by setting in WEEKLY SCHEDULE.
- 3) Motion Recording can be started when any motions in image are detected according to the setting in MOTION SETUP menu.
- 4) Alarm recording is started by external alarm trigger input according to the setting in ALARM SETUP menu.



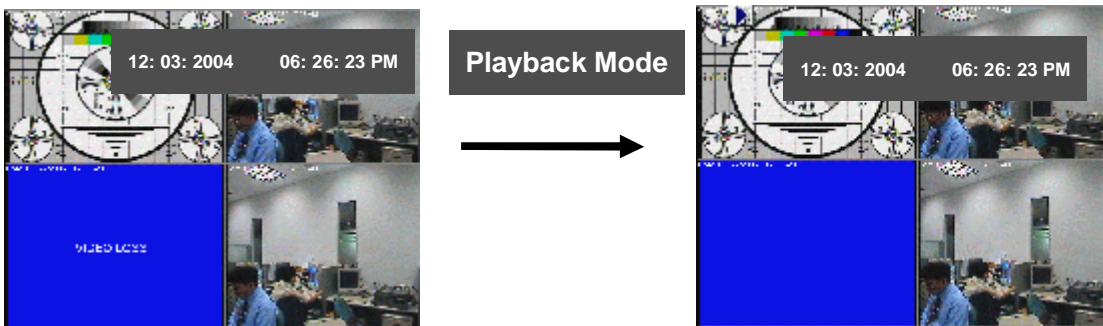
Playback mode

Normal playback can be started by pressing **PLAY/ STOP** button (▶) to enter into search list. While DVR is in playback mode, the camera channel which want to watch could be selected by **UP**(1), **RIGHT**(2), **DOWN**(3), **LEFT**(4) button. Fast forward (**FF**, ▶▶) or fast backward playback (**RR** ◀◀) can be done by (**FF**▶▶) and (**RR** ◀◀) button. Press **PAUSE** button to freeze picture in playback. The movement of single field in still picture mode can be fulfilled by **PAUSE** button.

For selecting the forward or backward playback of single field, (**FF** ▶▶) and (**RR** ◀◀) button would be needed to press before using **PAUSE** button. DVR supports x2,x4,x8,x16,x32 playback speed for Fast Forward and x2,x4,x8,x16 playback speed for Fast Backward.

ë Note

When motion in image is detected or external alarm is triggered, there is pop-up image display of the channel during 30 seconds. But your DVR doesn't display pop-up image display of the channel when your DVR is in playback mode or search list Menu to minimize user's inconvenience.



PTZ control Procedure

- a) Select the camera (which PTZ camera is connected) to control PTZ using **UP**, **RIGHT**, **DOWN**, **LEFT** buttons of front panel in your DVR.
- b) Press **ENTER** button to select PTZ mode. PTZ MODE OSD will be displayed on upper right corner of monitor.
- c) Use **UP**, **DOWN** button for tilt movement of PTZ camera, **LEFT**(4), **RIGHT**(2) for pan movement and (**FF ▶▶**) and (**RR ◀◀**) buttons for zoom IN and zoom OUT.
- d) To escape PTZ control mode, press **ENTER** button or any button. Then the PTZ MODE OSD on upper right corner of monitor will be disappeared.

ë Note

Before using PTZ control mode, please check that right selection of PTZ protocol in PTZ type of DISPLAY SETUP is done

Chapter 3

3

Utility Administration

NetViewer utility

This Triplex Digital Video Recorder allows system administrator to manage machine from a remote location to view live and recorded video over private network or the Internet connection. Also, you can capture the video from the unit and play the stored video later on.

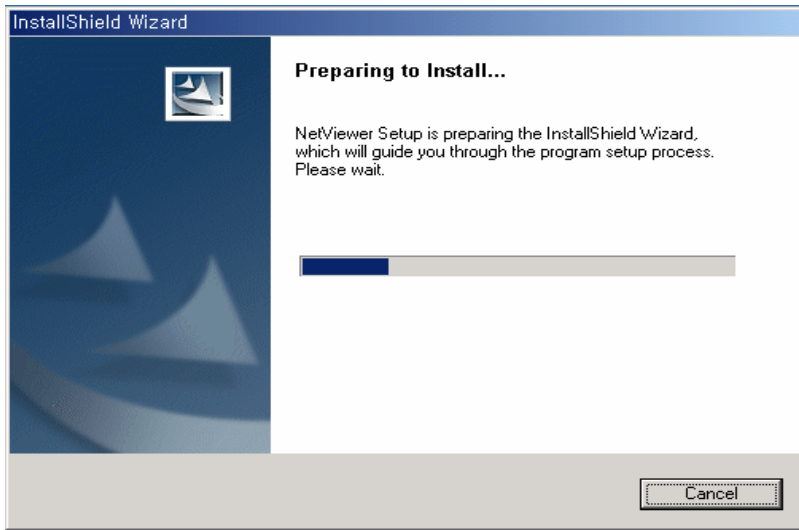
Procedures of DVR Client utility

1. Installation

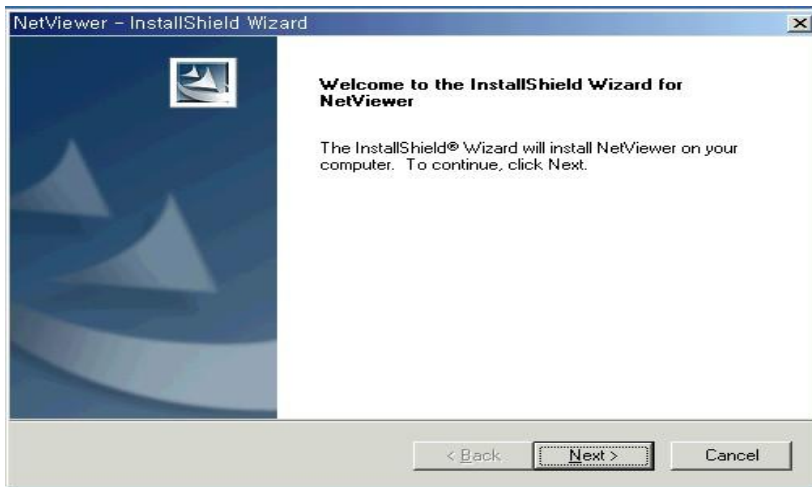
è Note

If an older version of Netviewer software or similar viewer software has been already installed on your computer, you should uninstall the software first.

- 1) Insert the installation CD.
- 2) Run the **netviewer_setup.exe** file. And following dialog box will be appeared.
Please wait a few seconds.



3) When the following dialog box appears, click Next.



4) Please fill in user name and company name,click Next.

The screenshot shows the 'Customer Information' step of the NetViewer installation wizard. The window title is 'NetViewer - InstallShield Wizard'. The main heading is 'Customer Information' with the instruction 'Please enter your information.' Below this, there are two text input fields: 'User Name:' containing the letter 'e' and 'Company Name:' containing the letter 'q'. Underneath, the text 'Install this application for:' is followed by two radio button options: 'Anyone who uses this computer (all users)' (which is selected) and 'Only for me (q)'. At the bottom left, the text 'InstallShield' is visible. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

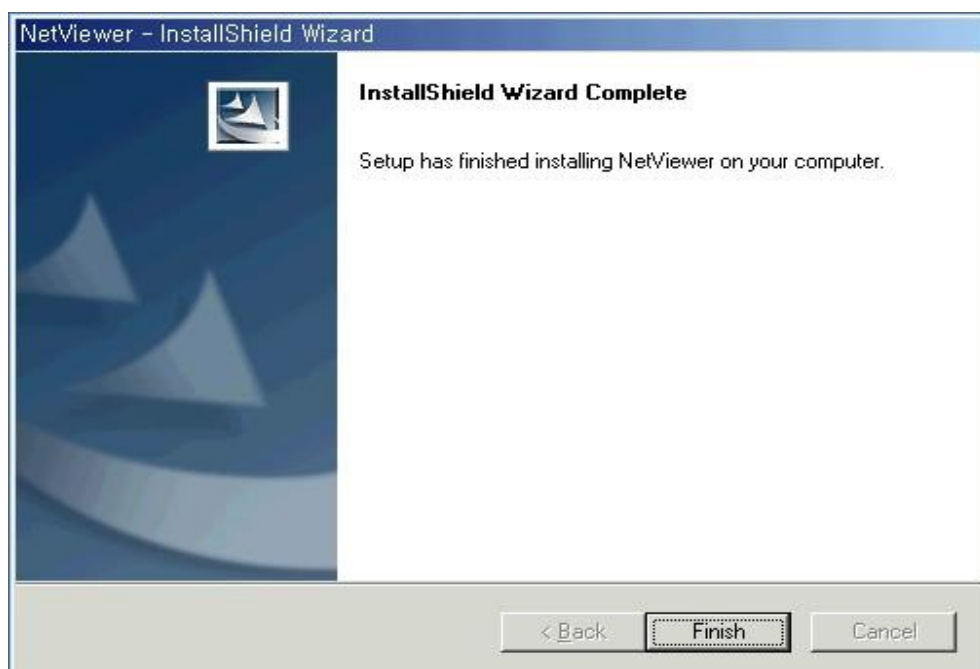
5) Please select installation type in following dialog box. Recommend that "Typical" installation type for normal installation. And then click Next.

The screenshot shows the 'Setup Type' step of the NetViewer installation wizard. The window title is 'NetViewer - InstallShield Wizard'. The main heading is 'Setup Type' with the instruction 'Select the setup type to install.' Below this, the text 'Click the type of setup you prefer, then click Next.' is displayed. There are three radio button options: 'Typical' (selected), 'Compact', and 'Custom'. Each option has a brief description: 'Typical' is 'Program will be installed with the most common options. Recommended for most users.', 'Compact' is 'Program will be installed with minimum required options.', and 'Custom' is 'You may select the options you want to install. Recommended for advanced users.' At the bottom left, the text 'InstallShield' is visible. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

6) Please click Next.



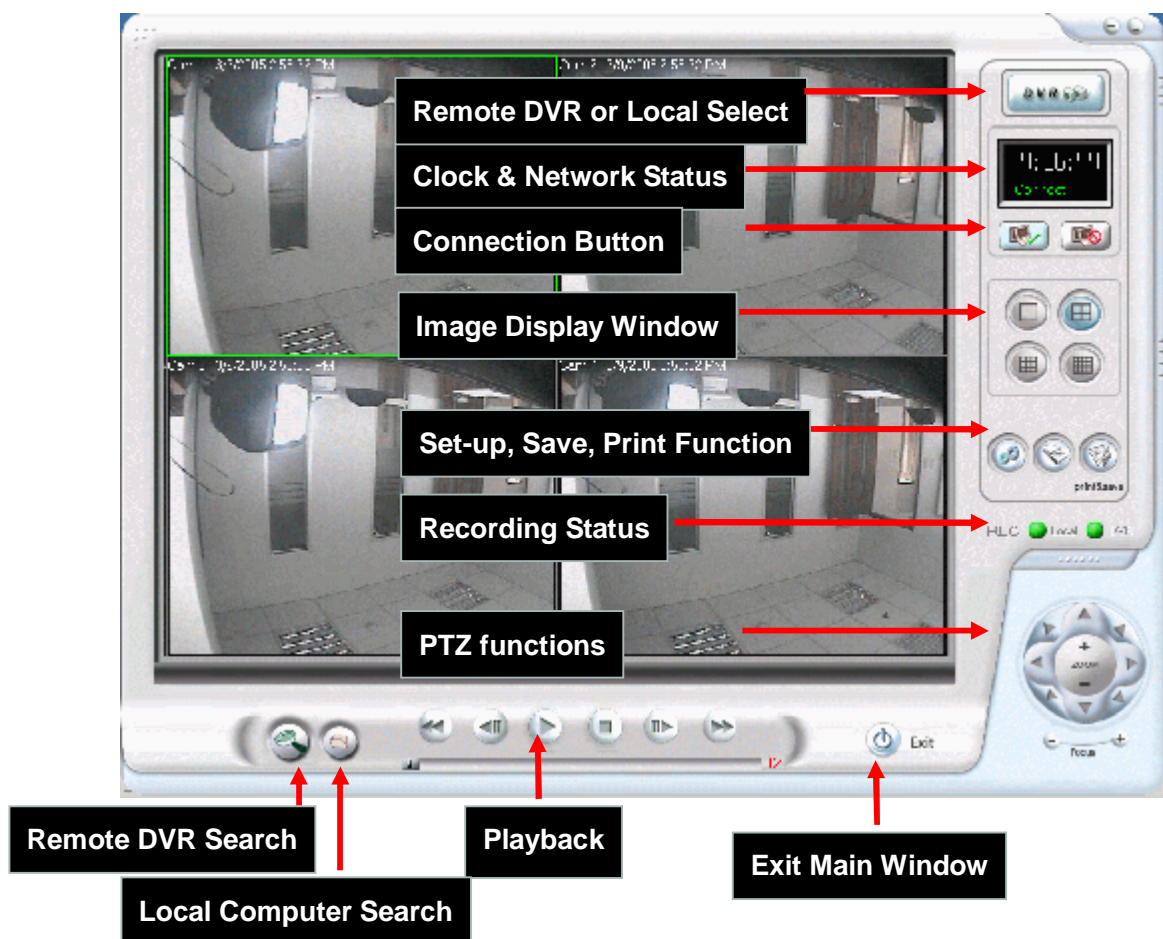
7) Installation is finished.



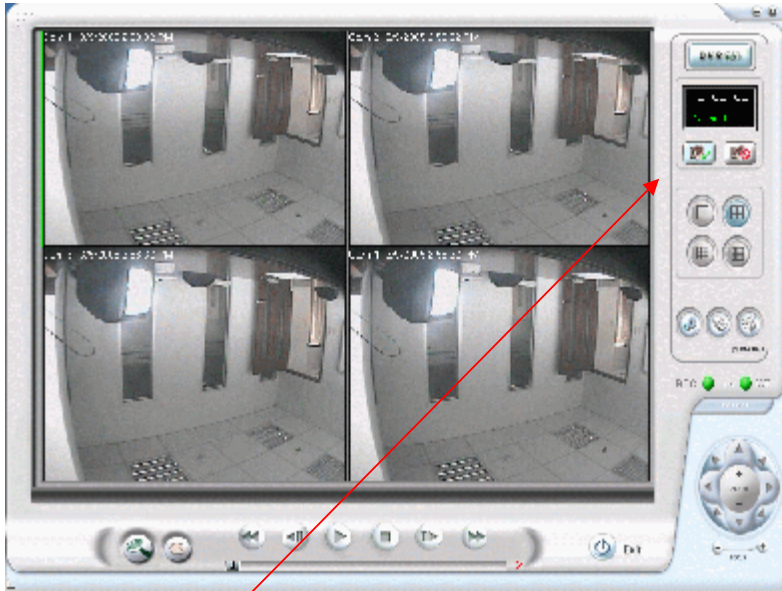
2. NetViewer Program Operations

1) NetViewer Features

- n Live pictures monitoring and remote recording in local HDD.
- n DVR file list searching remotely to DVR or local file searching
- n Fast Playback by time selecting
- n Remote configuration of the DVR menu
- n Pan, tilt and zooming Control
- n JPEG & AVI conversion
- n Print images



3) Network Connection



A) Connection Button

When this connection icon is clicked, below "Log-in" window will be appeared.

B) Admin Account

C) IP Address of DVR

D) DVR Port number

(Default Port is 5000)

E) Password Input

(This password number is as same as the password of the DVR, default is 1111)

F) Start Connection

G) Cancel the connection

4) Image Display Window Selection



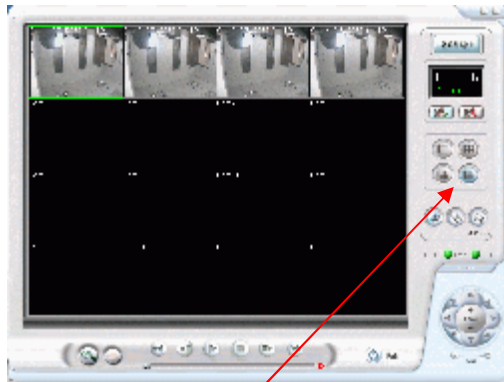
A) Single Picture Display



B) QUAD Pictures Display



C) 9 Pictures Display
(for 9CH Expansion)

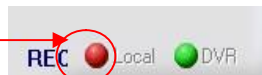


D) 16 Pictures Display
(for 16CH Expansion)

5) The Storage of pictures transmitted through network in local HDD

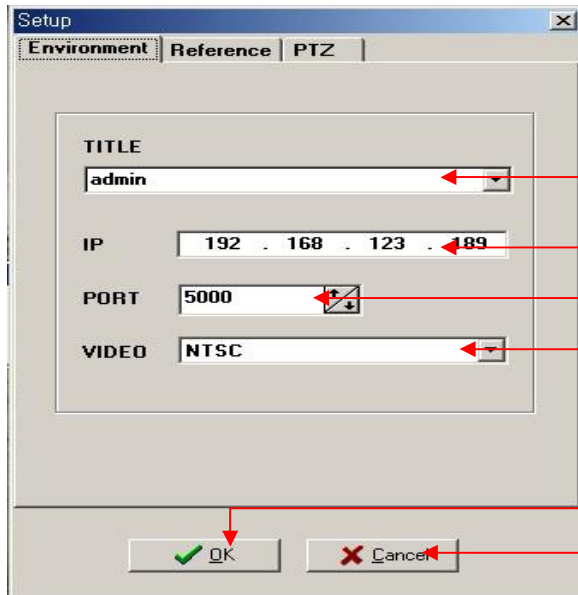


The pictures received through network from remote DVR can be saved in local Hard Disk Driver.



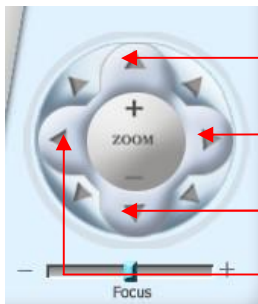
When "REC" icon is pressed, the color of REC status icon will turn to be "red". If "REC" icon is pressed again, local recording will be stopped. And then the color of REC status icon will turn to be "green".

6) Viewer Program Set-up



- A) User selection
- B) IP Address Input (or Changing)
- C) PORT Input
- D) Video Format Selection
(NTSC or PAL). It needs to select Video Format NTSC or PAL for better video quality.
- F) Exit without saving set-up parameters.

7) PTZ Camera Control



- 1) Tilt Up
- 2) Pan Right
- 3) Tilt Down
- 4) Pan Left

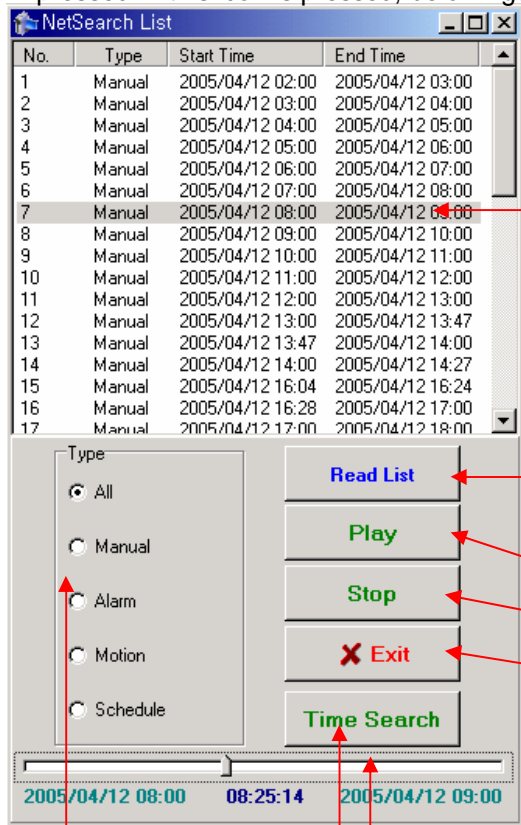


- 5) Pan/Tilt Up-Left
- 6) Pan/Tilt Up-Right
- 7) Pan/Tilt Down-Right
- 8) Pan/Tilt Down-Left
- 9) Focus Far
- 10) Focus Near

8) Remote Searching



For searching recorded files in remote DVR, DVR search icon (in above figure) can be pressed. If this icon is pressed, below figure will be appeared.



1) File List Window

It displays recorded file lists which is transmitted from remote DVR.

2) The recorded file list in remote DVR can be read by clicking this icon.

3) Selected file in File List Window can be playbacked by clicking this icon.

4) Stop playback

5) Exit after saving set-up parameter Viewer Program will palyback the file, if there is any selected file.

6) "Time Search" or "Time Search Slide bar" enables user to move and playback the given time of selected recorded file directly. For example, user can playback the recorded file from time 08:25:14 during 8 to 9 am file.

7) It enables user to search the recording files by specific recording type.

ë Note

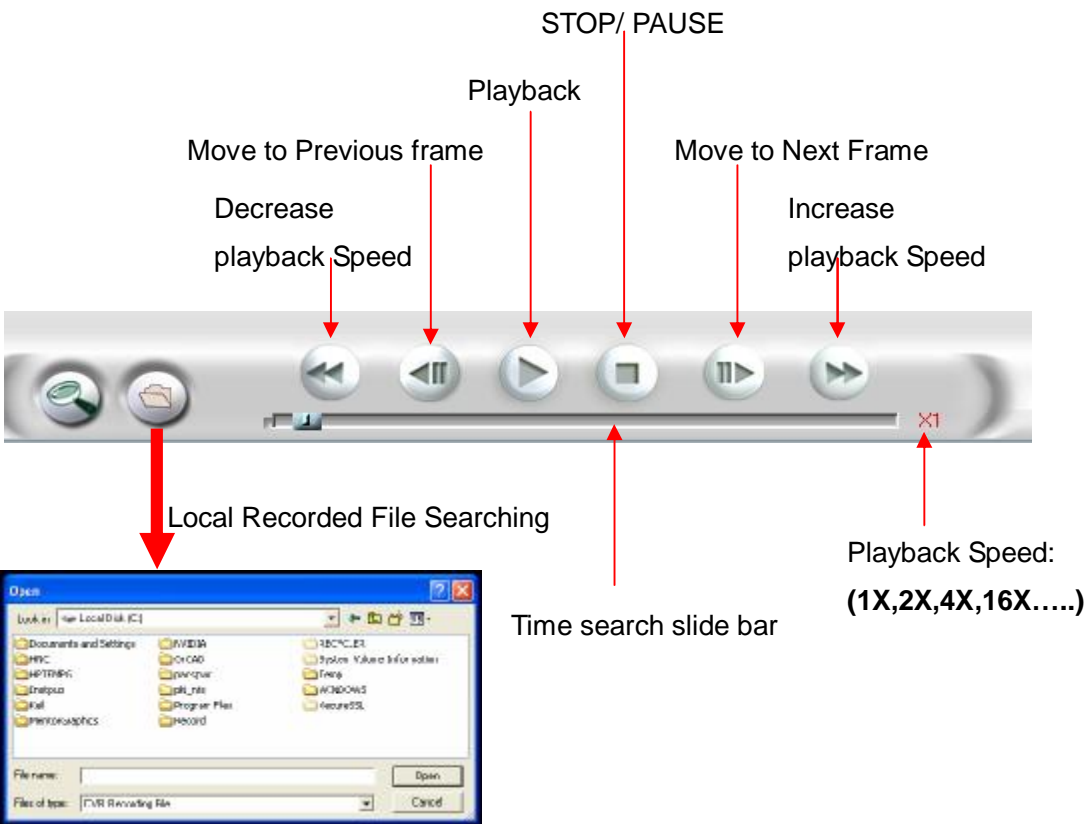
Remote playback list is limited to last 27 event list. This is purpose of urgent condition when user needs to playback the important videos for recent days. If want to playback far, please use DVR to view or backup to the USB device.

9) Local Searching



- 1) "LOCAL" means Local Search Mode
- 2) Current time Display
- 3) Network Status Display (Connection or Disconnection)

10) Playback Icons for local playback



11) Print

- 1) Select a displaying channel which would like to be printed, click the "Print icon"



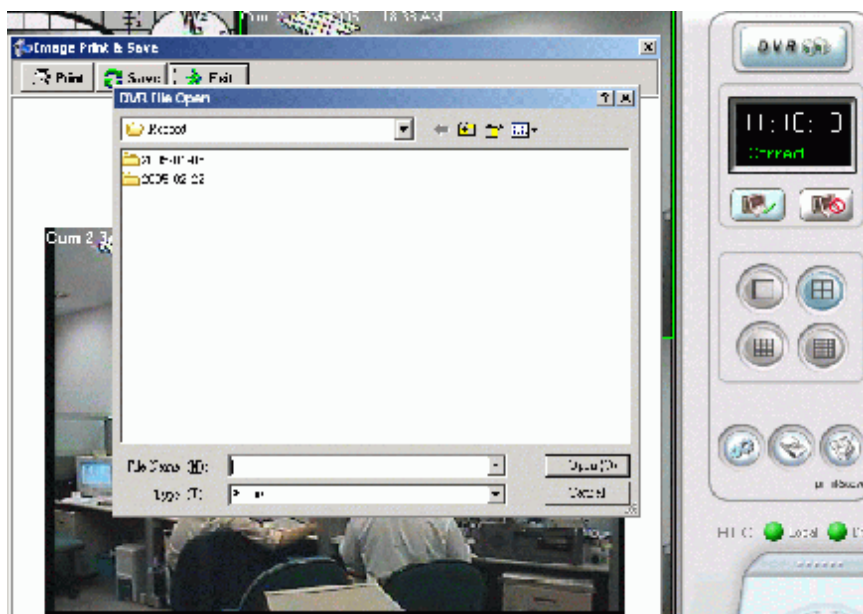
- 2) A window for printing preview will be appeared as below.
Selected image will be printed by clicking this icon.



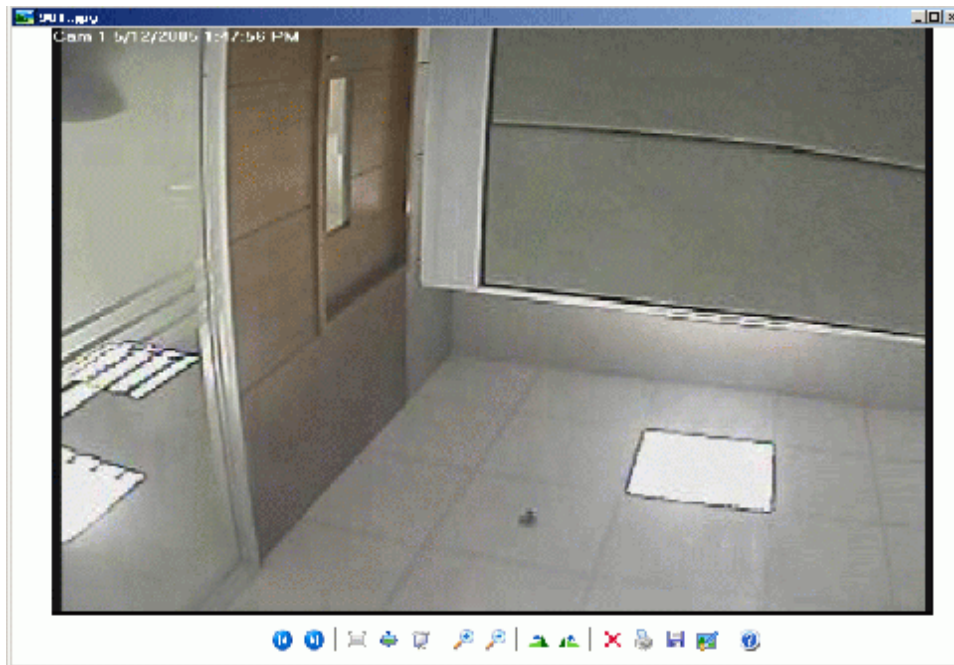
3) To save a standard JPEG file, click “Save” icon, after selecting image.



4) If “Save” icon is pressed, below window will be appeared. Input a file name like “image1.jpg” which want to be saved. And press “SAVE(S), then the image will be converted as JPEG file and will be saved.

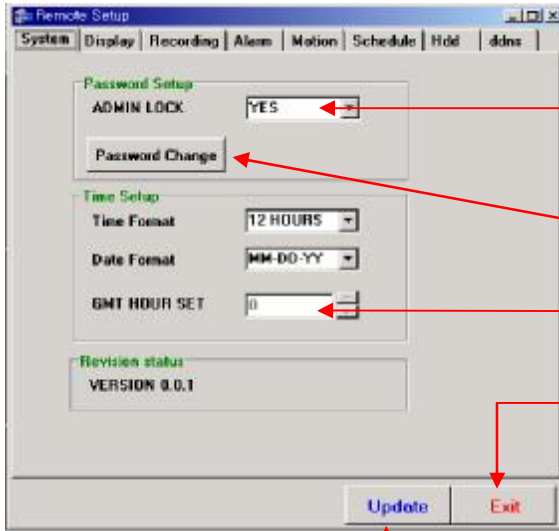


5) The saved file can be opened in any computer using any graph editing software.



12) Remote Configuration

1) SYSTEM SETTING



A) ADMIN LOCK: YES/ NO

If ADMIN LOCK is selected as YES, password is required whenever user goes into menu. If NO, password isn't requested.

B) Change password

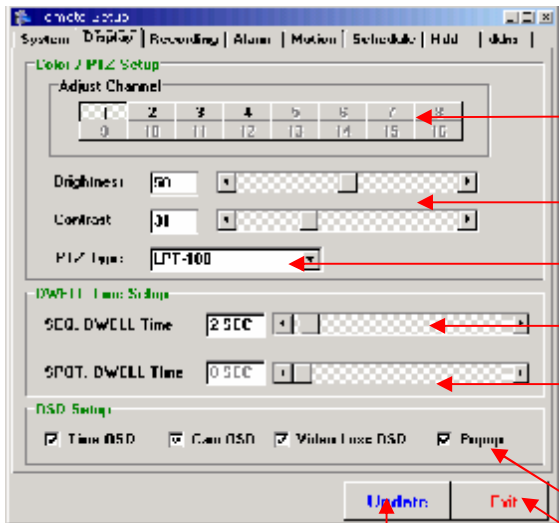
C) Automatic time setting by

GMT+Hour time Server in worldwide (it is not supported for 4CH DVR)

D) Exit without saving set-up

E) Save set-up value. The configuration parameters will be transferred to remote DVR then exit the window.

2) DISPLAY SETTING



A) Channel Selection.

For DVR-1650, channel 1 to 16 will be active.

B) Picture Quality Setting

(Brightness, Contrast)

C) PTZ Camera Protocol Setting

D) Dwell Time Setting for Sequential displaying and SPOT monitoring.

(SPOT DWELL Time isn't supported in 4CH DVR)

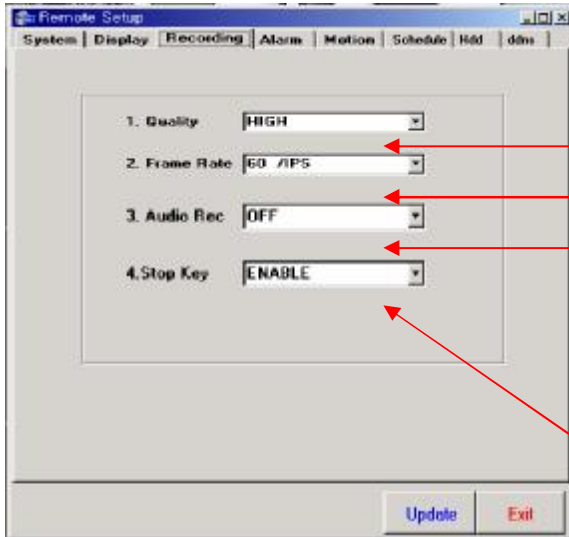
E) OSD ON/ OFF Setting

G) Exit without saving set-up parameter.

F) Exit after saving set-up value.

Selected configuration parameters will be transferred to remote DVR

3) RECORDING SETTING



A) Recording Quality Setting.

B) Frame rate Setting

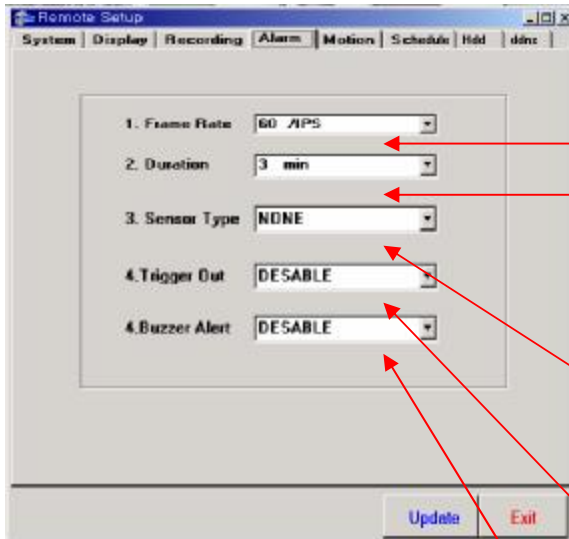
D) AUDIO: ON/ OFF

DVR can select whether to record audio signal with video signal together or not.

E) STOP KEY: DISABLE/ ENABLE

Enable this STOP KEY then DVR can not stop recording by press stop button intentionally.

4) ALARM SETTING



A) FRAME RATE

From 0.5 to 60 Image per seconds for NTSC, from 0.5 to 50 IPS for PAL. can be selected.

B) DURATION

It define recording duration after alarm is triggered.

C) SENSOR TYPE: NONE/ N.O/ N.C

Normal open or normal close can be selected for external alarm inputs

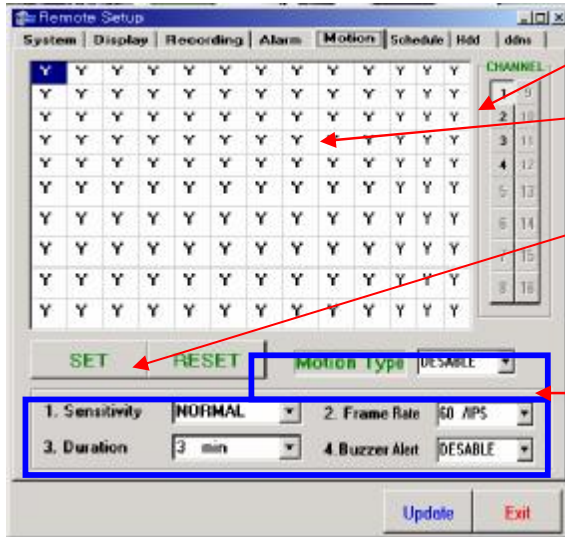
D) TRIGGER OUT (Relay Output)

Both dry open and dry contact through different relay output port can be supported.

E) BUZZER ALERT

Beep sound from buzzer when external alarm sensor(s) be triggered.

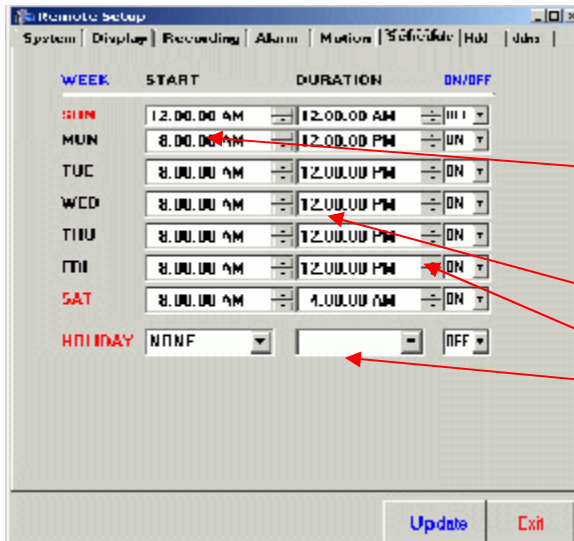
5) MOTION RECORDING SETTING



- A) Camera Selection for motion setting**
- B) Motion Area Setting:**
Y: Active Motion Area
N: inactive motion Area
- C) Motion Area SET/RESET**

- C) Motion Type**
Disable/ All area/ Motion Area Setting
- D) Sensitivity:** 5 steps from very low, low, normal, high to very high.
- F) Frame Rate**
- F) Duration**
- G) BUZZER ALERT**
Beep sound from buzzer when motion is detected.

6) SCHEDULE RECORDING SETTING

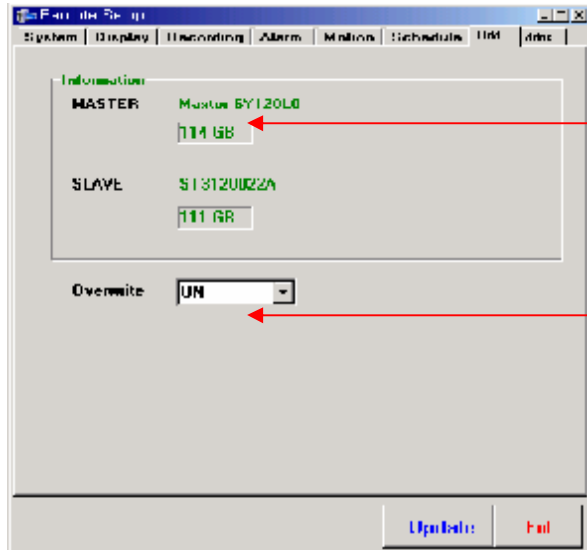


- A) START time Setting**
Start time selection for schedule recording.
- B) Duration time Setting**
- C) On/ Off**
Enable or disable schedule recording.
- D) Holiday:** Select a particular day to on (enable)/off (disable) the recording.

ë Note

START means recording starting time. It can be changed from 00:00 to 23:59.
DURATION means total recording time.
HOLIDAY is for holiday recording setup. It can be adjusted from SUN to SAT.

7) HDD SETTING

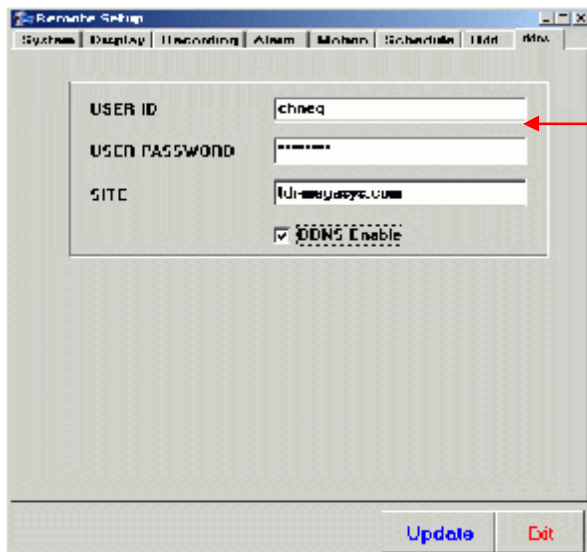


1. HDD Information Display

It displays total HDD capacity with HDD manufacturer.

2. On(enable) / off (disable) recycle recording.

8) DDNS SETTING



DDNS Setting for IP address.

First, enroll **www.dyndns.org** which supports DNS service with free of charge for DDNS setting.

And input the information of ID/password/DDNS site (member.dyndns.org). (This password is for DDNS account, not for DVR password.)

Update button can transfer to remote DVR, it will be useful for user to access remote DVR by site name because Domain Name (site name) is utilized, even though IP address is changed in floating IP address (DHCP).

9) AVI conversion

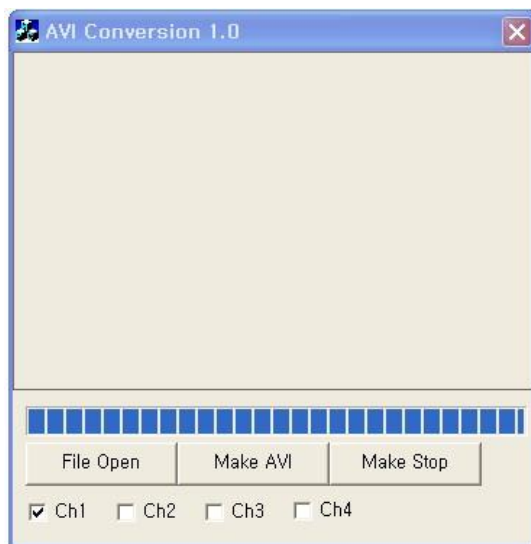
The saved files in local HDD, which is M-JPEG format can be converted into AVI file for playback in any PC using Avi Converter which is generated by installing NetViewer software. Path is

Start > Programs Files > Planet NetViewer > Avi Converter or simply click on the shortcut on desktop.

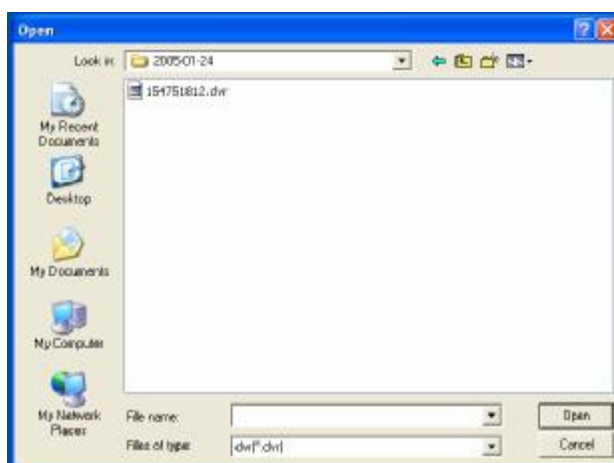
Then “AVI converter 1.0” window will be appeared.

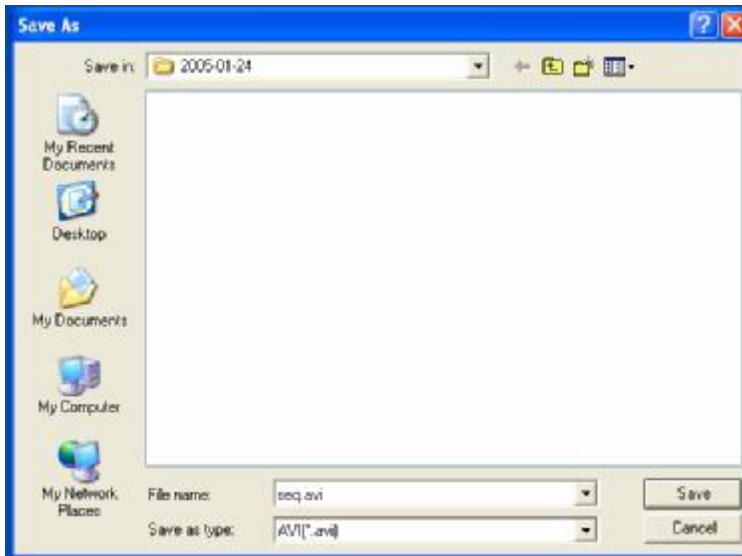
Conversion Procedure:

a) Click “File Open” icon as below figure.



b) Select a file to convert into AVI file. And then input file name for converting file.

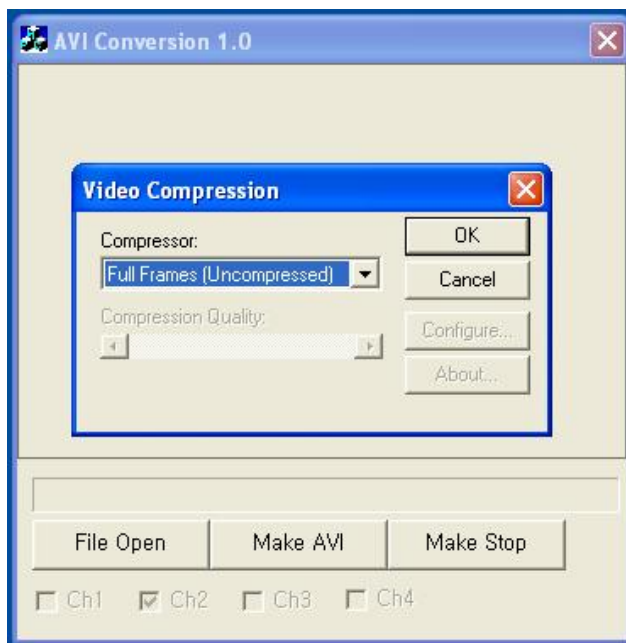




c) AVI Conversion Program can be executed channel by channel. First, select the channel which is converted. Then press “MAKE AVI” to convert into AVI file. Below window will be appeared.

d) Input file name and press “ Save (S)”. Then below window will be appeared.

If compression type is selected, AVI Conversion Program can start AVI conversion.



e) If conversion is finished, below figure will be appeared. To finish it, press “Confirm”.
For another channel conversion, same procedure will be requested.



f) Converted file can be played in any PC using any graph editing software.



II. Remote Viewing by Internet Explorer

1. Open Internet Explorer with IP address which is set-up in NETWORK SETUP of DVR.

Then below dialog box will be appeared.



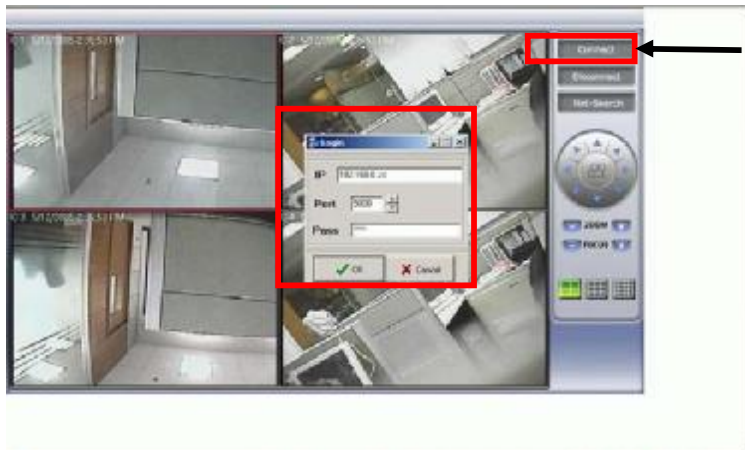
Input IP address with port number.

For example,

<http://192.168.0.20:5002>

2. Please press "Connect" icon on the right corner to access remote DVR.

Then below dialog box will be appeared.



"Connect" icon.

Please input IP Address, Port number and password in below dialog box.

Note:

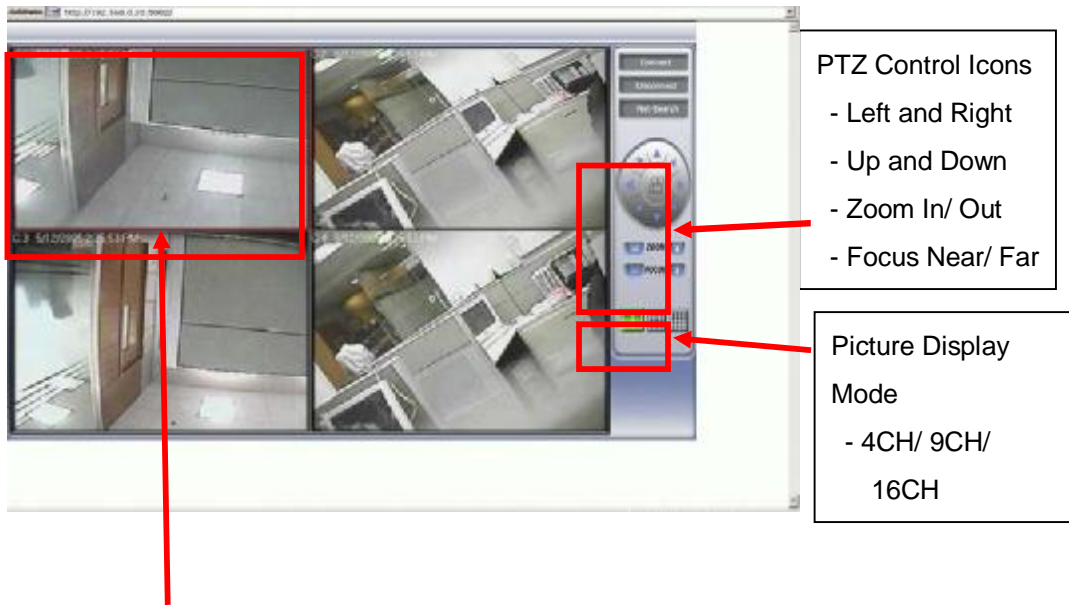
Password is the number which is stored in DVR. Default is 1111



3. You can view live image of remote DVR through Internet Explorer as below dialog.



4. How to control PTZ Camera and picture display mode.

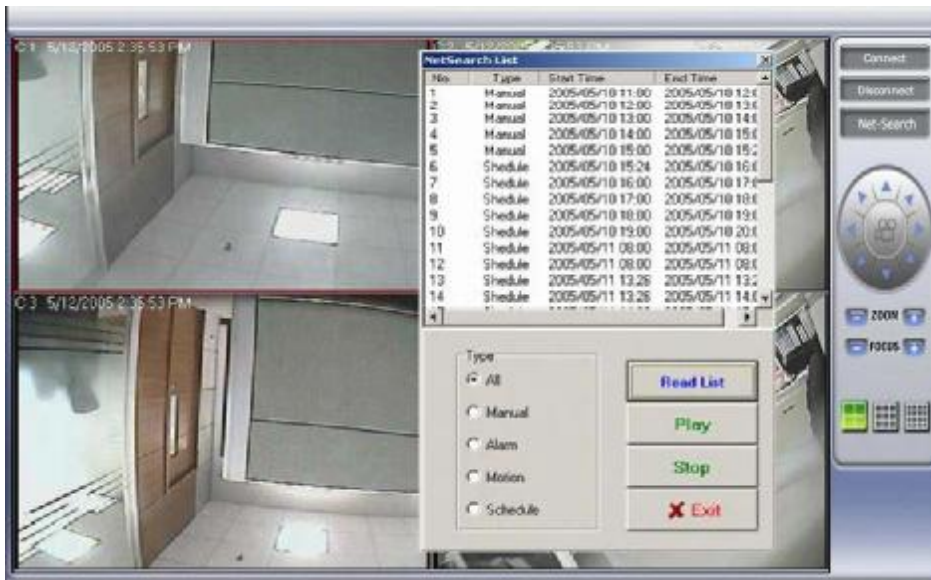


In order to control PTZ Camera, correct PTZ Camera protocol should be selected in DVR web. The picture area (Cameo) (which PTZ function is needed to control) is selected by mouse. And then press the PTZ control icon.

5. In order to search all of the recorded files of DVR, "NetSearch" icon can be pressed. Then below dialog box will be appeared.



6. How to search recorded files of remote DVR.



1) Read List Icon: It is used to read recorded files of remote DVR.

All of reading files can be sorted by "Type" which includes Manual, Alarm, Motion and Schedule.

2) Play: It is used to play one of file selected by mouse from all of lists

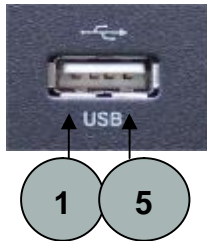
< Playback procedure >

1. Select one file which you want to play by mouse
2. Press "Play" icon for playback.
3. Press "Stop" icon for stop the playback.
4. Press "Exit" icon to return to "live picture".

Appendix A

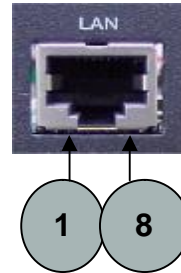
Pin Description of connectors

1. USB Pin Descriptions



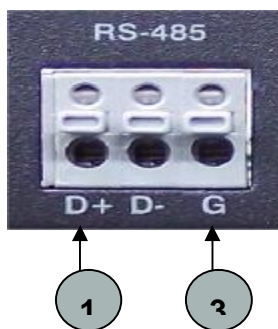
Pin	Pin description
1	VCC
2	D- (TX-)
3	D+(TX+)
4	GND
5	SHIELD

2. LAN port (RJ-45) Pin Descriptions



Pin	Pin description
1	TXD+
2	TXD-
3	RXD+
4	No connected
5	No connected
6	RXD-
7	No connected
8	No connected

3. RS485 Pin Descriptions

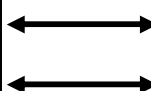


DVR

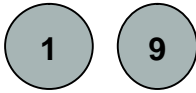
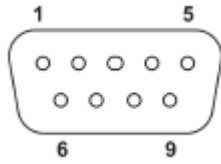
Pin	Pin description
1	RS485 D+ (TX +)
2	RS485 D- (TX -)
3	GND

Slave Unit like PTZ Camera

Pin	Pin description
?	RS485 D+ (RX +)
?	RS485 D- (RX)



4. RS232 Pin (DB-9) Descriptions

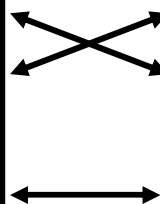


DVR

External Communication Unit

Pin	Pin description
1	No connected. (DCD)
2	RXD (Receive Data)
3	TXD (Transmit Data)
4	No connected. (DTR)
5	GND (System Ground)
6	No connected
7	No connected
8	No connected
9	No connected

Pin	Pin description
1	No connected.
2	RXD
3	TXD
4	No connected.
5	GND
6	No connected
7	No connected
8	No connected
9	No connected



5. Alarm Input & Outputs Pin Descriptions



Pin	Pin description
1-4	Sensor input 1 – Sensor input 4
5	Ground
6	Relay output with normal open
7	Relay output with normal close
8	Common

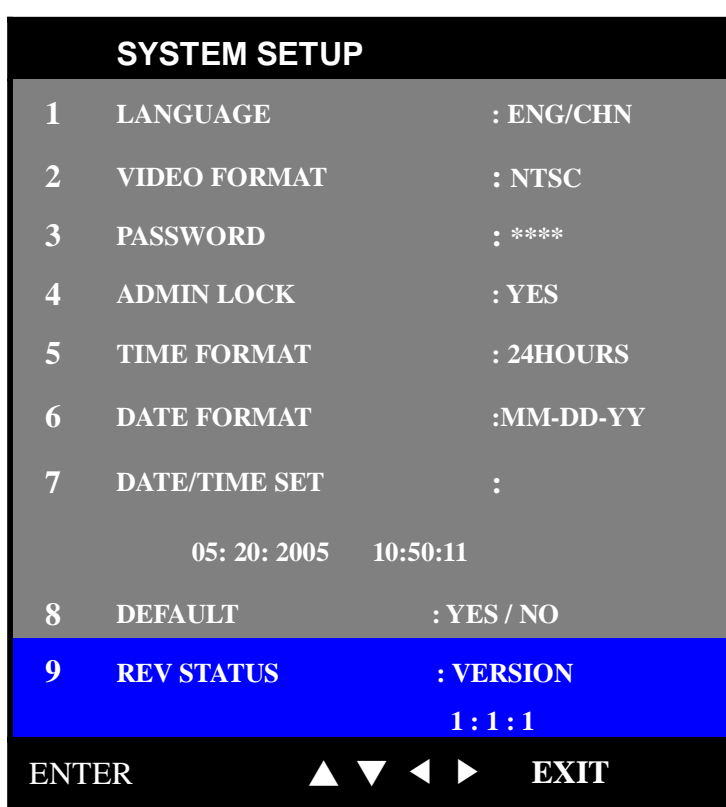


Appendix B

Software Upgrade Procedure

1. S/W Upgrade procedure

- 1) Copy upgrading **zip file** into USB Memory Drive using PC in advance. DVR will automatically unzip the files.
- 2) Insert the USB Memory Drive into USB port in front panel of DVR.
- 3) Go to menu → 8. ARCHIVING item to check if USB Memory Drive information is displayed. If yes, then press ESC to exit. If not, please check your USB devices is available for DVR.



ö Note

After finishing S/W upgrade, version will be changed. The current firmware version information will be displayed on the screen.

5) Go to menuà 1. SYSTEM SETUPà 9. REV STATUS. Press **RIGHT** button to change UPGRADEà CONFIRM.

SYSTEM SETUP		
1	LANGUAGE	: ENG
2	VIDEO FORMAT	: NTSC
3	PASSWORD	: ****
4	ADMIN LOCK	: YES
5	TIME FORMAT	: 24HOURS
6	DATE FORMAT	: MM-DD-YY
7	DATE/TIME SET	:
	05: 20: 2005	10:50:11
8	DEFAULT	: NO
9	REV STATUS	UPGRADE
		1:1:1 è 1:1:2

SYSTEM SETUP		
1	LANGUAGE	: ENG
2	VIDEO FORMAT	: NTSC
3	PASSWORD	: ****
4	ADMIN LOCK	: YES
5	TIME FORMAT	: 24HOURS
6	DATE FORMAT	: MM-DD-YY
7	DATE/TIME SET	:
	05: 20: 2005	10:50:11
8	DEFAULT	: NO
9	REV STATUS	CONFIRM
		1:1:1 è 1:1:2

10) Press **ENTER** button of front panel in DVR.

While “9. REV STATUS : WAIT” is appearing, S/W upgrade will be executed. It takes around 20 seconds.

After completing S/W upgrade, DVR will be re-booted.

NOTE:

1. After pressing **ENTER** button for upgrading, USB Memory Driver should not be plugged out before displaying "INITIALIZING" message in your DVR.
2. Please remove USB Memory Drive from front panel of DVR, when DVR reboot and "INITIALIZING" character is displayed on monitor.

SYSTEM SETUP		
1	LANGUAGE	: ENG/CHN
2	VIDEO FORMAT	: NTSC
3	PASSWORD	: ****
4	ADMIN LOCK	: YES
5	TIME FORMAT	: 24HOURS
6	DATE FORMAT	: MM-DD-YY
7	DATE/TIME SET	:
	05: 20: 2005	10:50:11
8	GMT HOUR SET	: 09 HOUR
9	REV STATUS	: WAIT
		1:1:1 è 1:1:2

11) S/W Upgrade Completion !!!

S/W upgrade version will be seen on 9. REV STATUS of SYSTEM SETUP.

SYSTEM SETUP		
1	LANGUAGE	: ENG
2	VIDEO FORMAT	: NTSC
3	PASSWORD	: ****
4	ADMIN LOCK	: YES
5	TIME FORMAT	: 24HOURS
6	DATE FORMAT	:MM-DD-YY
7	DATE/TIME SET	:
	05: 20: 2005	10:50:11
8	GMT HOUR	
9	REV STATUS	: VERSION
		1:1:2

← Upgrade Version



Appendix C

Specification

Video Input	4 Ch, NTSC/PAL, 1V peak-to-peak, 75 Ohm, BNC	
Audio Input/ Output	1 Ch Input/ 1 Ch Output	
Video Output	4Ch loop-through Output. 1 Monitor	
Display Resolution	Display Resolution NTSC: 720x480, PAL: 720x576	
Display Mode	Single, QUAD, Sequential	
Recording Resolution	Full Mode, 4Ch Multiplexing Recording	
	NTSC: 720x480, PAL: 720x576	
Compression Algorithm	M-JPEG (modified)	
OS	Embedded Linux	
Triplex	Record / Playback / Network	
Compression Rate (KB/ image) (NTSC: 720x240, PAL: 720x288)	Normal image: 13~17 (NTSC), 15~19(PAL) Complex image: 20~25 (NTSC), 22~27 (PAL)	
Recording Frame Rate (IPS)	60 fps (NTSC), 50 fps (PAL)	
Recording	Speed (IPS)	60/30/15/10/5/1/0.5 (NTSC), 50/25/12/6/5/1/0.5 (PAL)
	Modes	Manual, Schedule, Motion, Event
Display	Real Time	
Schedule Recording	Choose recording section at 1min time intervals during days of week	
	Full-time recording, Holiday Recording option	
Status Indicator (LED)	Power, Network, Archive, Record (Button inside)	
Event (Alarm Trigger, Motion)	Selectable input recording speed	
	Duration: Follow/Continue/10sec/20sec/30sec/1,5,10 min	
Alarm In(4)/ Relay Out(1)	NO, NC selectable. Both NO and NC support in rear panel for Relay Out	
Playback	Normal: x1 speed	
	Fast Forward: x2,x4,x8,x16,x32(NTSC, PAL)	
	Fast Backward: x2,x4,x8,x16(NTSC, PAL)	

		Move 1 image per pushbutton at still image (STILL Button)
		Searching function: Move to search list, Time/ Manual/ Event/ Schedule
Network (GUI or Internet Explorer)		Protocol: TCP/IP, PPP, and DHCP GUI or Internet Explorer viewing and configuration support
Communication Protocol		RS485 (Pan/Tilt/Zoom)
HDD Type		EIDE, ATA-6, 3.5 inch, 7200rpm
HDD Management		Pre-formatting not required (Automatic formatting by system)
		(No loss of data by FAT breakage/Efficient HDD space increase)
		Data storing in sequence (Not decrease HDD lifetime)
Archiving		USB 1.1 for data export (M-JPEG format) (Note: Memory Key not included in the package)
Power Supply		AC100-240V, 50-60Hz
Mechanical	Unit	44(W) x31.5(D) x4.4(H) (17.3 in. x12.4In. x 1.73 In.)
	Dimension	(19" rack mountable, 1U)
	Unit Weight	Unit Weight 11lb (5kg)
Ambient Temperature		40° to 104°F (5° to 40°C)
Approval		FCC Class A, CE and cUL