



Triplex Digital Video Recorder

DVR-1650

User's manual

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Revision

User's Manual for PLANET Triplex Digital Video Recorder

Model: DVR-1650

Rev: 1.0 (Oct. 2005)

Part No. EM-DVR1650V1

Table of Contents

Chapter 1 Introduction	1
Overview	1
DVR Functions.....	1
Package Content	2
Physical Details	2
Buttons Definitions.....	3
Physical Interfaces.....	5
Chapter 2 DVR- 1650 Menu Setup	10
Introduction	10
Menu Tree.....	11
MAIN MENU	12
SYSTEM SETUP.....	13
DISPLAY SETUP	16
RECORDING SETUP.....	18
ALARM SETUP	19
MOTION SETUP.....	21
WEEKLY SCHEDULE	23
NETWORK SETUP.....	25
ARCHIVING	27
Playback archived video files	28
HDD INFORMATION	30
PLAYBACK Configurations	32
Search List	32
Display mode.....	34
Recording mode.....	36
Playback mode.....	37
PTZ control Procedure	38
Chapter 3 Utility Administration	39
NetViewer utility	39
Procedures of DVR Client utility.....	39
Appendix A Pin Description of connectors.....	63
Appendix B Software Upgrade Procedure	65
Appendix C Specification.....	68

Chapter 1

Introduction



Overview

The DVR-1650 (Triplex Digital Video Recorder) is for recording/playback/Network video streams from up to 16 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-1650, and the following installation guide explains how to complete the first DVR-1650 installation on your side.

DVR Functions

This DVR provides recording capabilities for 16 camera inputs. It provides playback or live display and network function while in recording mode. And it also offers the following features:

- **Real-time recording for up to 16 analog cameras, maximum up to 60 NTSC IPS (Image per second), 50 PAL Images per Second**
- **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**
- **Display and Record Video Resolution: NTSC (720x480), PAL (720x576)**
- **1 channel audio recording**
- **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**

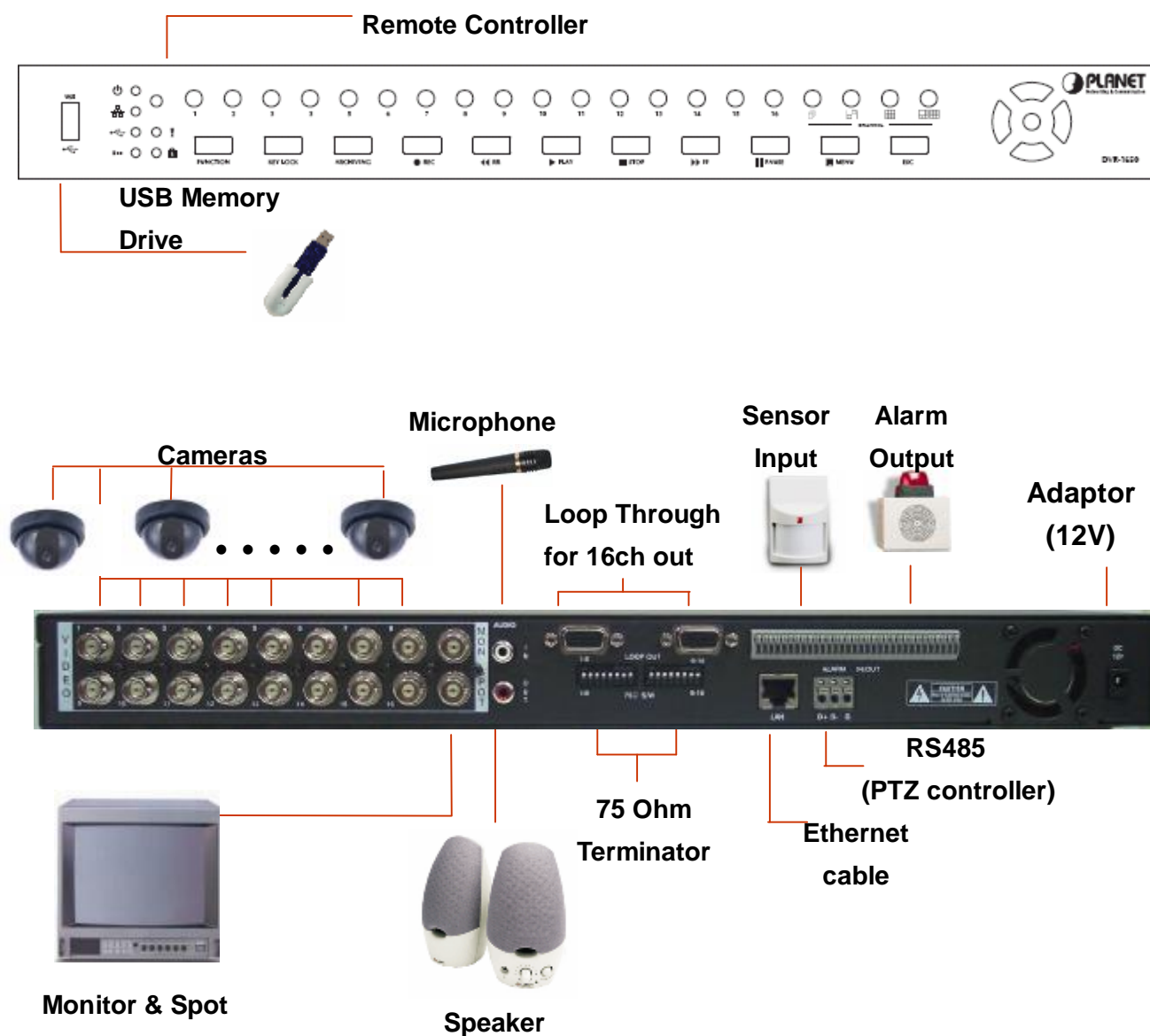
Package Content

The contents of your product should contain the following items:

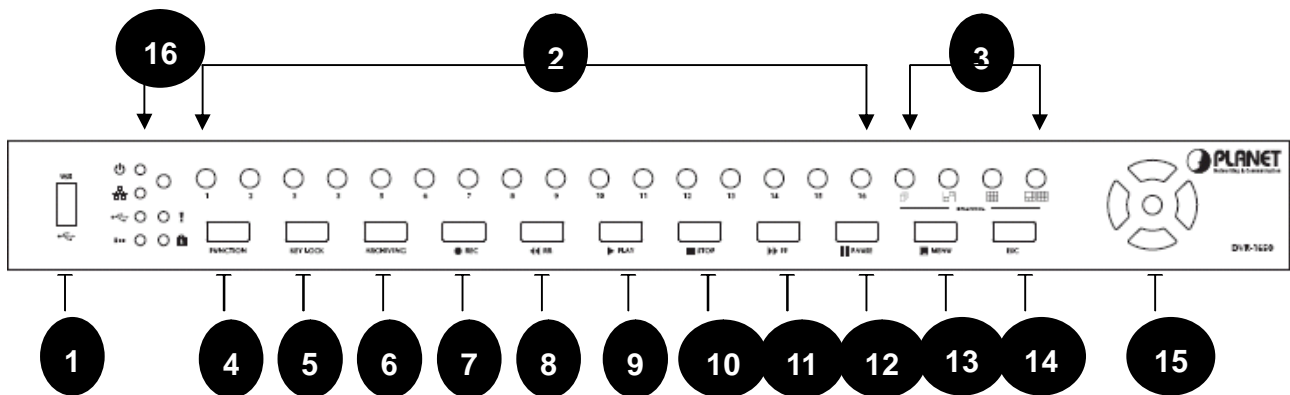
- I DVR-1650
- I Power adapter
- I Rack Mount Bracket
- I Quick Installation Guide
- I User Manual CD
- I Remote controller

Physical Details

Overview of front panel and rear panel



Buttons Definitions



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. Video Display Channel Selection buttons


Channel button from CH1 to CH16 is to select video channel displayed on monitor.

3. Channel Display mode selection buttons


There are four kinds of video display modes which consists of sequential display, QUAD, 9CH, 16CH display mode.

Full Picture Display mode: Full picture can be selected by channel selection button from CH1 to CH16.


- **Sequential Display mode:**

If this button  is pressed under given video display mode, each video display mode is switched sequentially. For example, if this button is pressed in QUAD mode, QUAD picture is switched sequentially from CH1-4, CH5-8 to CH13-16.


- **QUAD Display mode:**

If QUAD button  is pressed, QUAD picture will be displayed. Whenever this button is pressed, QUAD picture including CH1 to CH4, CH5 to CH8, CH9 to CH12 and CH13 to CH16 will be changed in turn.

- **9 Picture Display mode:**

If 9 picture display button  is pressed initially, 9 pictures of CH1 to CH9 will be displayed. The coming 9 picture of CH8 to CH16 will be displayed by pressing this button one more. Whenever this button is pressed, 9 pictures set is switched in turn.

- **16 Picture Display mode:**

Whenever 16 picture display button  is pressed, picture display mode will be changed from 16 picture set display to 1(large)+7 (small) set display mode and 2(large)+8(small) set display mode.

4. FUNCTION

The larger picture display mode in 1(large) +7 (small), 2(large) + 8(small) set display mode can be changed by the combination of FUNCTION and channel selection button. While in the 1(large) +7 (small), 2(large) + 8 (small) set display modes, press FUNCTION button first then press channel buttons from CH1 to CH16, ex: CH2. The larger picture will change to the pressed channel number, CH1 to CH2.

NOTE: This function is doing once after pressing FUNCTION button.

5. KEY LOCK

In order for only authorized person to operate buttons in front panel, this button can be utilized. If this button is pressed, all of buttons in front panel are not operated with yellow LOCK LED. To release KEY LOCK button, password will be requested just after pressing LOCK button. If correct password is input, button LOCK will be released.

6. Archiving button

Whenever **ARCHIVING** button is pressed, archiving will be started.

NOTE: Please make sure USB device is plug into USB port while pressing this button.

7. REC button

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

8. RR (◀◀)

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

9.PLAY button (▶) and 10. STOP button

If **PLAY** (▶) is pressed, search lists will be displayed on monitor. After selecting one recorded file among lists, playback will be started by **PLAY** button. To stop playback, **STOP** button is used. While DVR is in high speed playback mode like FF or REW, it returns to normal playback by **PLAY** button.

11. FF (▶▶)

Press FF to perform high speed forward playback. It support 2 to 32 times playback speed.

12. PAUSE

Press PAUSE to pause playback. This PAUSE button can be used for backward or forward movement by one field. The direction of field movement is decided by pressing FF or REW previously.

13. MENU

Press **MENU** button to enter menu system.

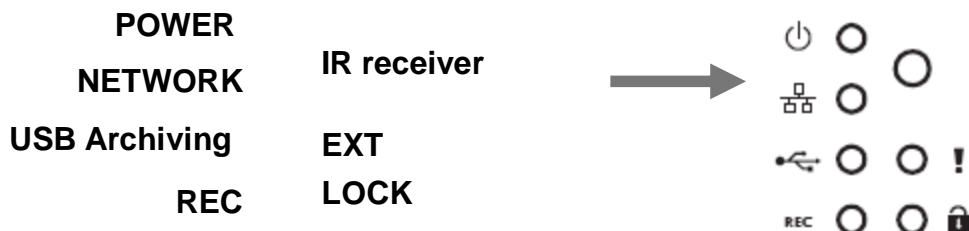
14. ESC

ESC button is used to return to upper menu and to save set up parameter at the same time

15. Direction button and Enter Button

Direction buttons are used to move LEFT, RIGHT, UP and DOWN in menu. They also can be used to input password. ENTER button is used to save parameter settings and to select parameters in the menu. While in playback they are used to select one of listed file for playback after searching recorded files (use all, time, alarm, motion, manual sorting method and so on).

16 LED Indicators



1) POWER LED

This LED turns “ON” when power is “ON” .

2) NETWORK LED

This LED will turn “ON” , while data communication is working through network.

3) Archiving LED

This LED will turn “ON” , while data archiving is working through USB Memory driver.

4) REC

This LED will turn “ON” during recording.

5) EXT:

This LED will turn “ON” , when external alarms are triggered or motions are detected.

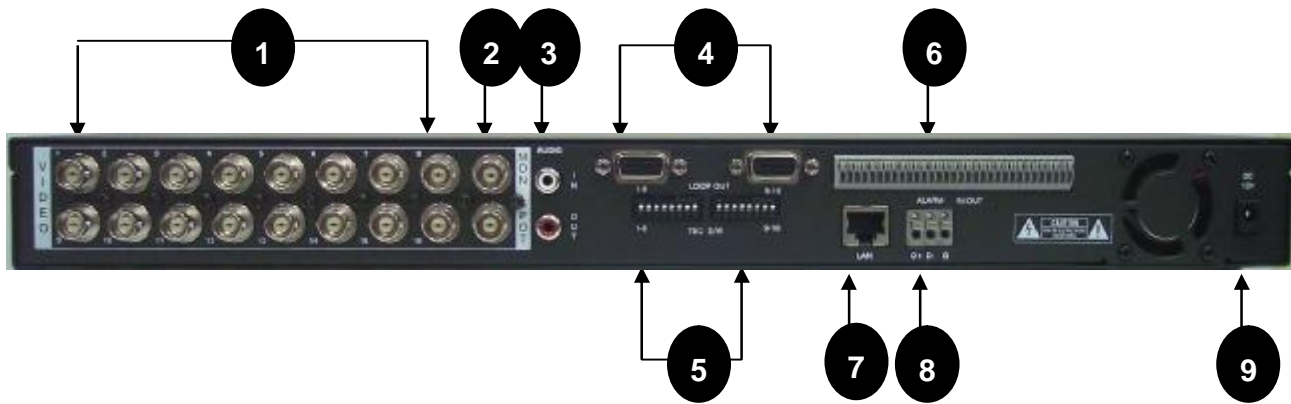
6) LOCK

This LED will turn “ON” while LOCK button is working.

7) IR Receiver

Remote controller sensor input window

Physical Interfaces



1. Video Input: 16 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 in DVR. But NTSC and PAL video sources for 16CH video inputs can not be mixed. If they are mixed, DVR can't be operated properly.

2. Video Output

One video output (Upper BNC) is used to monitor live, playback pictures. The other (lower BNC) is used to monitor SPOT monitoring which displays all of connected video channels sequentially.

3. Audio input (upper RCA) and Output (Lower RCA)

Unbalanced audio signal input and output with RCA jack. Connect the audio source (microphone) to audio input, audio output (speaker) to your amplifier because the DVR does not have amplified audio output, therefore, a speaker will be needed for audio playback. The audio input can be from an amplified source or directly from a microphone.

4. 16CH Loop through outputs: 16 channel composite video outputs with D-SUB connectors. If the connection of loop-through video outputs into video equipments is requested, 16CH 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.

5. 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, the other video equipments should be 75 ohm terminated. If loop through video outputs are not connected to the other video equipments, it should be "ON".

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

6. Alarm input and relay output: (16 alarm inputs and 4 relay output with NO, NC)

To make secure connections on the Alarm Connector Box, press and hold the button then insert the wire

of alarm in the hole below of connector pin. After releasing the pin, pull gently on the wire to test it is connected securely. To disconnect a wire, press and hold the connector pin above the wire and pull out the wire.

- **16 Alarm Inputs:** 1,2,3,4,..., 16,G (Ground)

You can use external devices to signal the DVR responding 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.

- **4 Relay output:**

4 relay outputs with NO or NC can be sent to external device. You can select NO or NC according to characteristic of mechanical or electrical switch.

7. Ethernet Port:

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

8. RS485: For camera pan and tilting control

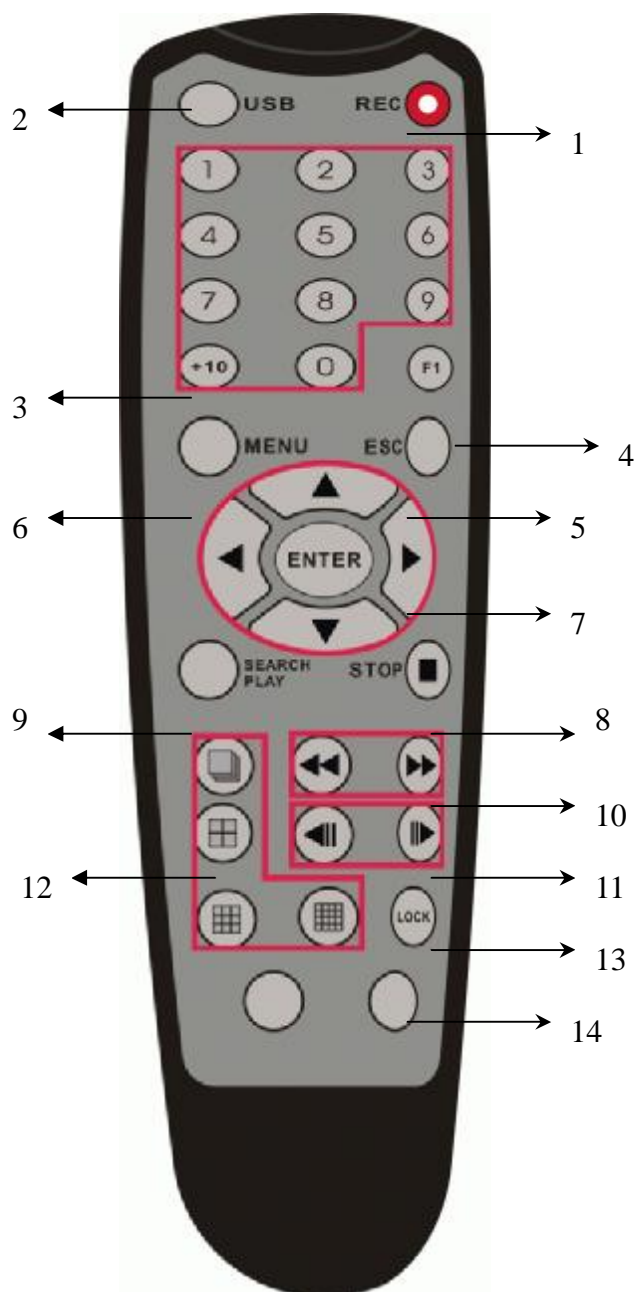
This DVR can be controlled remotely by remote PC software. The RS485 connector can be used to control PTZ (pan, tilt, zoom) cameras. Connect RX+, RX- of the control system to the TX+, TX- (respectively) of the DVR.

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

9. Power Input (from Adapter)

Connect the adaptor to the DVR for DC power supply.

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 (1,2,3,4 is designed for password input as well)
4	F1	Function key.
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) ENTER	to confirm settings.
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

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- 1650 Menu Setup

Introduction

The DVR-1650 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

ALARM SETUP	
1	FRAME RATE
2	DURATION
3	SENSOR TYPE
4	TRIGGER OUT
5	BUZZER ALERT

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

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

RECORDING SETUP	
1	QUALITY
2	FRAME RATE
3	AUDIO
4	STOP KEY

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

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

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

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

HDD INFORMATION	
1	HDD DISK
	TOTAL
	FREE
2	FORMAT HDD
3	OVERWRITE

MAIN MENU

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

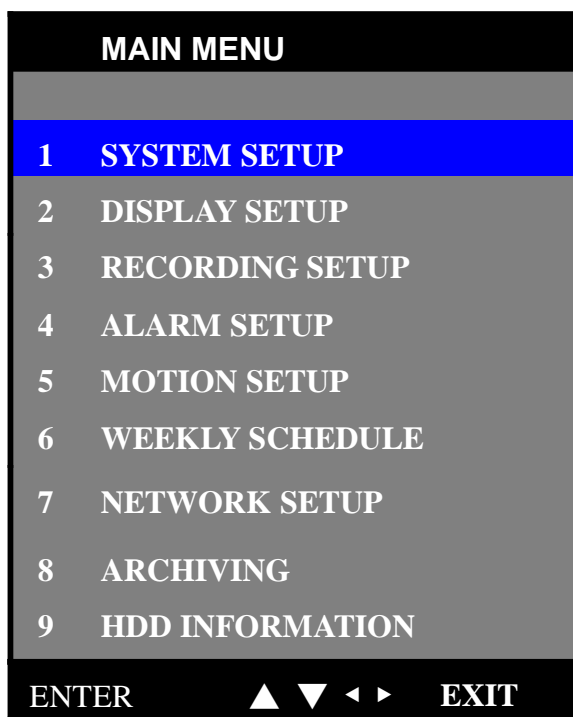
If **ADMIN LOCK** is set as YES (factory default is YES), below figure will be appeared. Input default password **1111** and press **ENTER** button. **MAIN MENU** will be appeared.



Input password number using 1, 2, 3, 4 Channel Buttons (Factory default is to press "1" button 4 times), and press ENTER button. **MAIN MENU** will be appeared.

ö 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 connect 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.
.....

ë Note

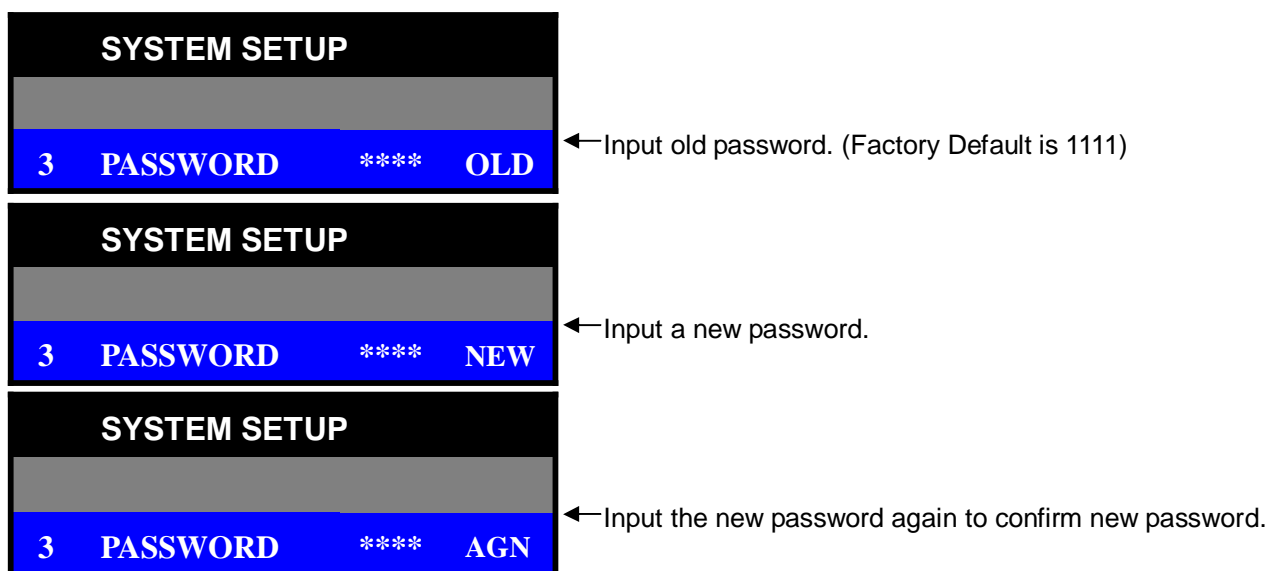
Since DVR will detect the video format automatically, please do not mix the NTSC/PAL cameras, otherwise, display will be abnormal.

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.

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 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.

NOTE: It is just reflected in sequential display mode.

3) SPOT DWELL: 1 to 60 seconds.

SPOT DWELL TIME can be changed using **LEFT** or **RIGHT** button. All of video channels connected with video inputs of DVR are sequentially switched for video output for SPOT monitoring.

4) 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.

5) CAM NUMBER OSD: ON/ OFF

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

6) 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.

7) 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.

8) 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

RECORDING SETUP		
1	QUALITY	: HIGH
2	FRAME RATE	: 60/ IPS
3	AUDIO	: OFF
4	STOP KEY	: DISABLE
5	CAMERA NUM	: CH01-16
	RECORD	: ENABLE

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 choosed 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.

ö 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)

Quality \ FPS	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

ö 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.

5) CAMERA NUM: CH01-16

RECORD: ENABLE/ DISABLE

Recording channel from CH1 to CH16 can be selected separately. The video channels which don't need to record can be set "**DISABLE**" after selecting channel in CAMERA NUM.

ALARM SETUP

ALARM SETUP		
1	FRAME RATE	: 60/ IPS
2	DURATION	: 3 MIN
3	SENSOR TYPE	: NONE/ N.O/ N.C
4	ALARM INPUT	: 01 to 16
	TRIGGER OUT	: DISABLE, 1 to 4
5	BUZZER ALERT	: DISABLE

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.

ë Note

Some parameters related to recording function can not be changed while DVR is 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) ALARM INPUT (Relay TRIGGER Out):

DVR supports both dry open and dry contact through relay output port 1 to port 4.

It can be selected using LEFT or RIGHT button. Trigger Output 1 to 4 corresponding to alarm input from 01 to 16 can separately be designated. For example, trigger output for alarm input 01 can be designated as “DISABLE”(when trigger output isn't needed).

Trigger output for alarm input 02 can be designated as “trigger output 1”. Trigger output for alarm input 10 can be designated as “trigger output 3”. Trigger output for alarm input 16 can be designated as “trigger output 4”.

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 **⇨** On. (Refer to the section **DISPLAY SETUP⇨ POP-UP DISPLAY**)

Recording duration can be selected in MOTION SETUP menu. To access MOTION SETUP, press **ENTER** when MOTION SETUP in MAIN MENU using **DOWN** or **UP** button 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	CAM NUM	: CH1 – CH16
	AREA SETTING	: DISABLE, ALL, SETUP
	TRIGGER OUT	: DISABLE. 1 to 4
5	BUZZER ALERT	: DISABLE

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) CAM NUM: CH1 – CH16

• AREA SETTING : DISABLE/ ALL/ SETUP

Enable/Disable motion detection; motion zone can be selected separately for each sixteen cameras using **LEFT** or **RIGHT** button.

DISABLE means that motion detection function is not utilized.

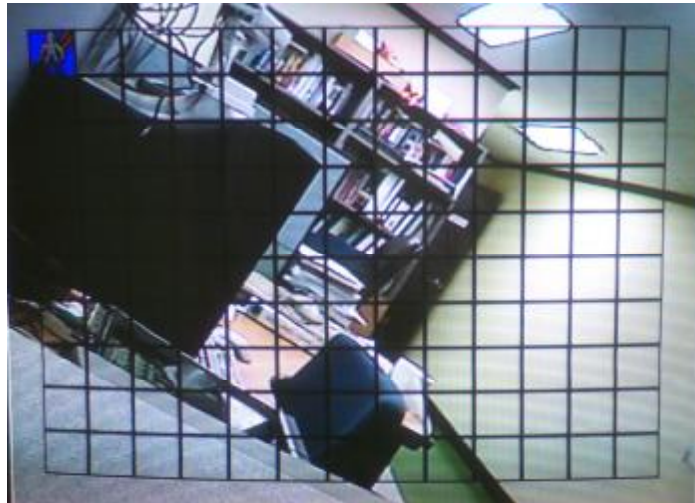
ALL means that entire image area is selected for motion detection.

SETUP is used to select motion detection image areas which want to monitor motion detection. 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. You can define the area of the image where you don't want to detect motion.

Selected blocks in 14x10 blocks will be blinking. To remove previously defined image block for motion detection, press ENTER button again to clear that block. After defining motion zone, press ESC button to return upper Menu, meanwhile, the settings will be saved.

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

< The example of motion area setup >



- **TRIGGER OUT:** DISABLE/ 1 to 4

It is supported to output alarm output (relay output) when motion is detected.

In case that relay output is not required, it can be set "DISABLE". When motion is detected in some selected video channels, relay output 1 to 4 can be selected to support relay output. For example, trigger output for motion detection in CH02 can be designated as "trigger output 1".

Trigger output for motion detection in CH10 can be designated as "trigger output 3".

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.

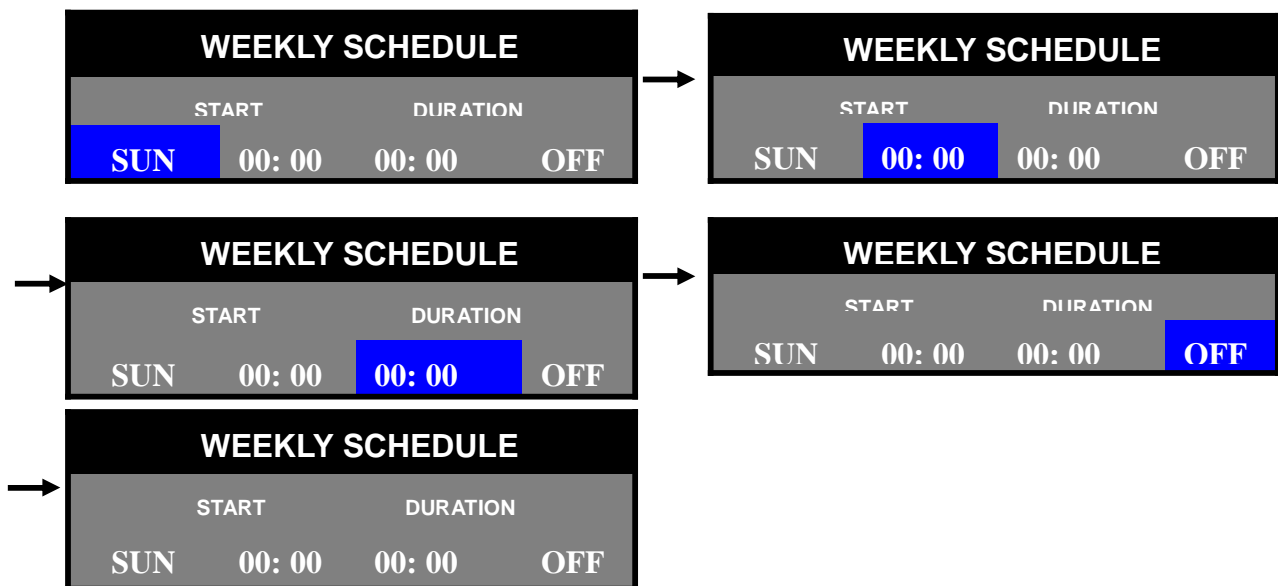
DURATION: The recording period of schedule recording.

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

ë 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 cannot 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.

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.

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 synchronize 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

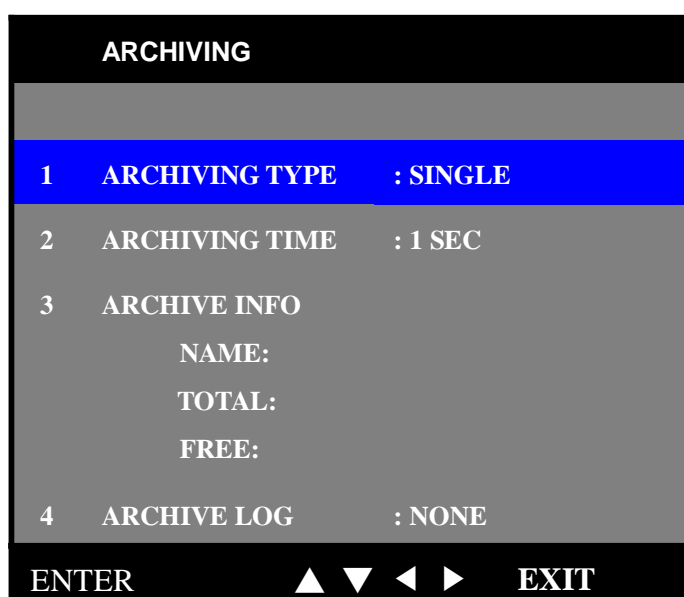
Note

This DDNS status is used for checking status and it cannot 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.

Note

Archiving operation through USBMemory 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.

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.

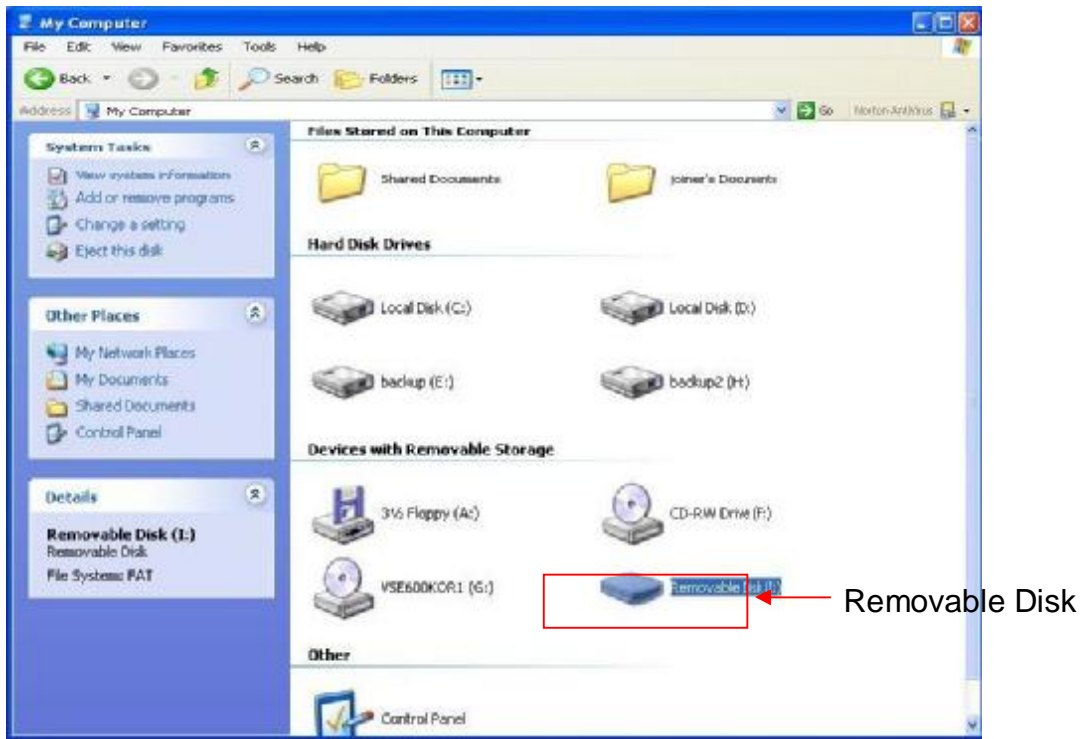
To playback archived image file in USB memory driver, First connect USB memory drive to PC, then execute Netviewer program.

The procedure of playing archived files:

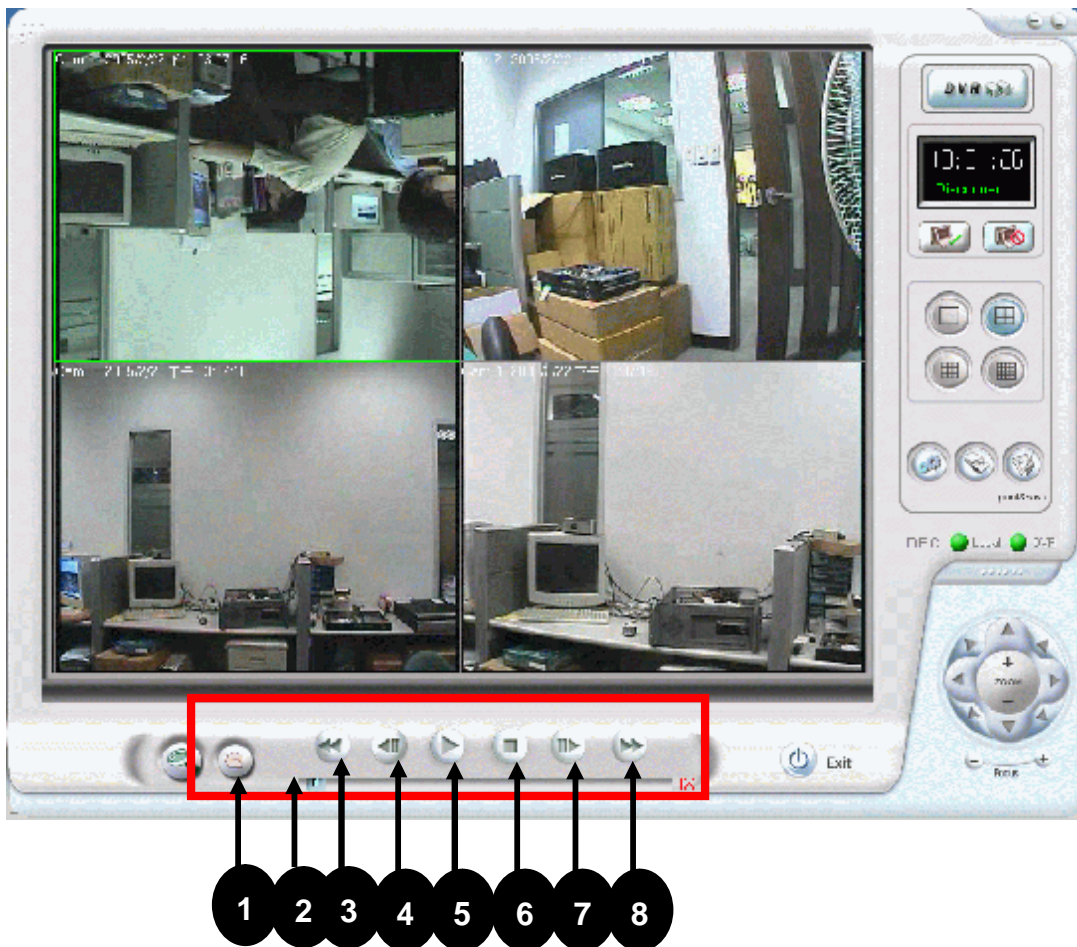
- A) Install NetViewer utility and execute the utility after finishing installation.
- B) Double-click the icon to execute NetViewer utility. Main screen of NetViewer utility will be appeared. (refer to the next page figure.)
- C) Connect USB Memory drive to USB port of computer / notebook
- D) Make 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 HISK:

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

Note

Support max.400GB hard drive disk per slot. It is suggested not to install two segate 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**.

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	← The current list / Total lists
LIST TYPE			ALL	10-15-2005		
1	10-15-2004	10:20	10-15-2004	11:20		← Latest recorded file
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

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 willbe playbacked.
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.

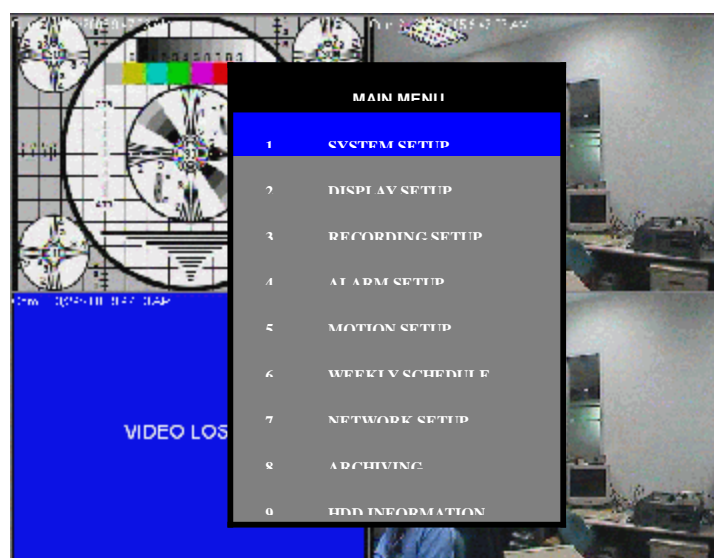
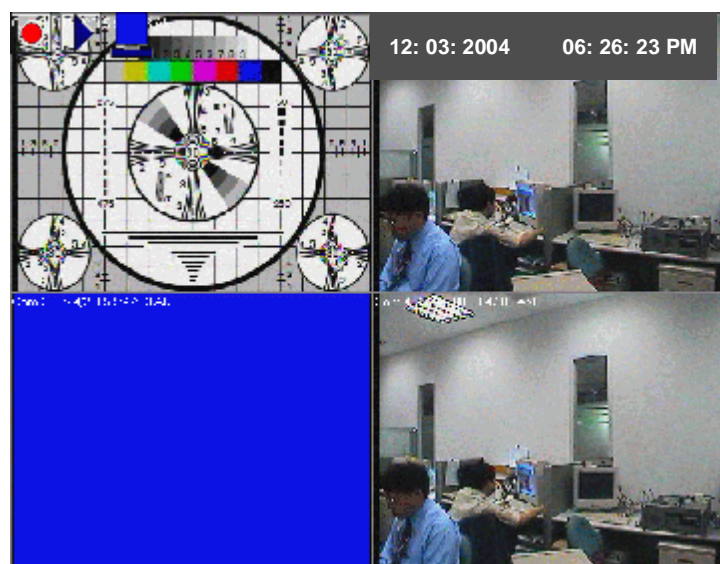
After moving 11-20-2004 date area using **LEFT** or **RIGHT** Button (and then related date character would be turned into bold character), the date which want to search can be selected by using **DOWN** or **UP** button. Then recorded files would be listed as bellows following by selected date, time (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

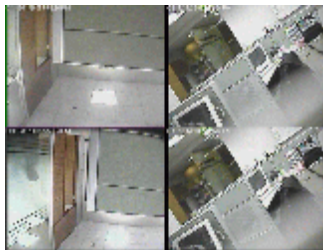
A) Full Picture



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) 9 Picture Display



If 9 picture button is pressed first time, 9 picture with CH1 to CH9 will be displayed on monitor. Whenever it is pressed, 9 picture displayed on monitor will be changed from CH1-CH9 to CH8-CH16 on and on. The 9 picture mode for monitoring can be selected by pressing this button repeatedly.

D) 16/ 8/ 10 Picture Display

If 16 picture button is pressed first time, 4x4 (16) picture will be displayed on monitor. Whenever it is pressed, two 8 (1+7) picture with CH1-CH8 and CH9-CH16 and two 10 (2+8) picture with CH1-CH10 and CH7-CH16 will be displayed on monitor repeatedly.

If changing main picture (bigger picture) is requested in 8(1+7) picture mode and 10 (2+8) picture mode, it can be done by pressing FUNCTION button, then pressing channel number button.

< 16 picture Display >



< 8 (1+7) picture Display >



< 10 (2+8) picture Display >



E) Sequential Picture Display

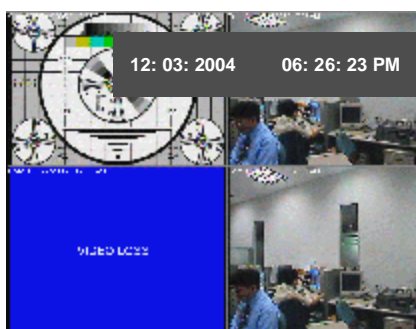
All video channels connected with video inputs of DVR are sequentially displayed on monitor via SPOT connector.

Recording mode

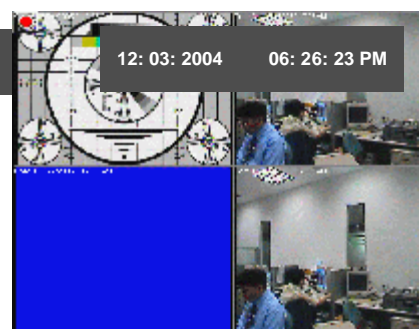
There are several kinds of recording modes such as Manual, Schedule, Alarm event, Motion Detection mode. Recording quality including high, standard plus, standard, low for all of recording is set up in **QUALITY** setting of **RECORDING SETUP** menu. Frame rate, motion / alarm recording duration can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

It is recorded on HDD that 16Ch 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 images 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.



Recording Mode



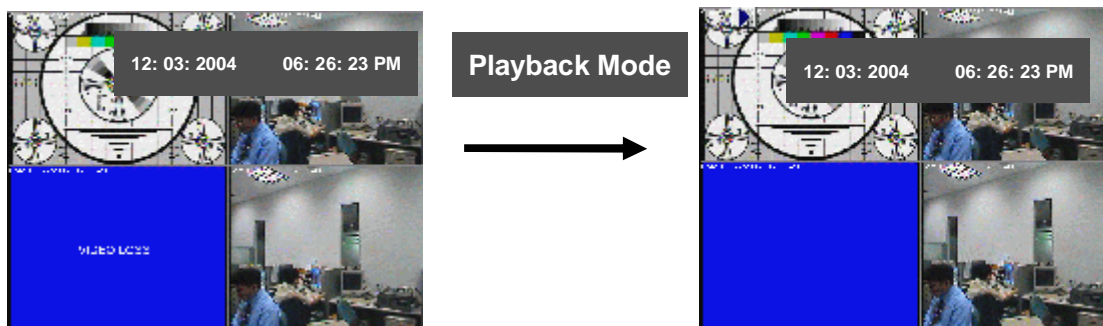
Playback mode

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.

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.

è 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.

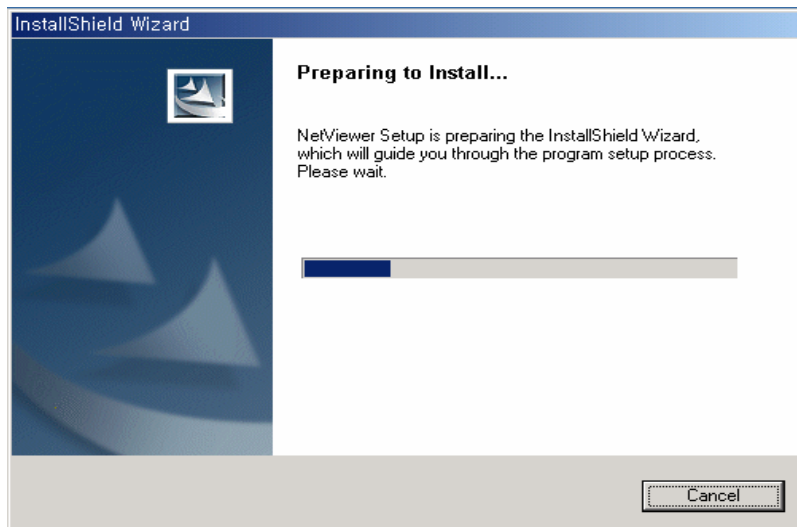
Procedures of DVR Client utility

1. Installation

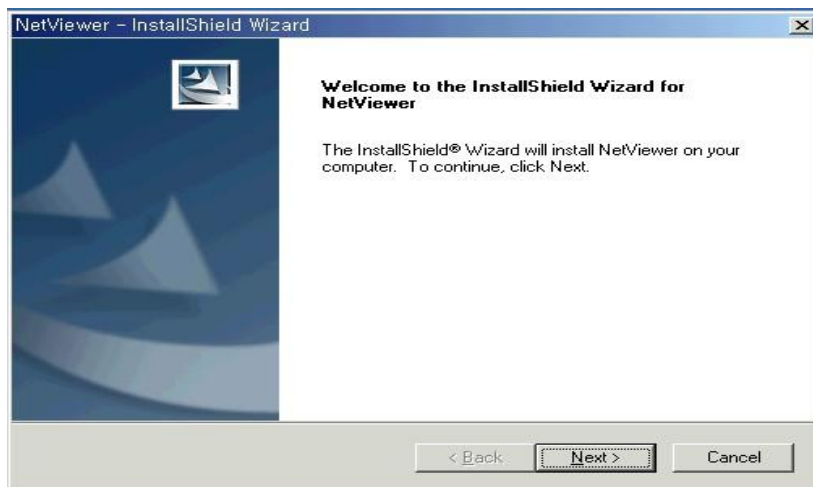
Note

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.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 'NetViewer - InstallShield Wizard' window at the 'Customer Information' step. The title bar reads '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:' with a cursor in the field, and 'Company Name:' with the letter 'q' entered. 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 'InstallShield' logo 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.

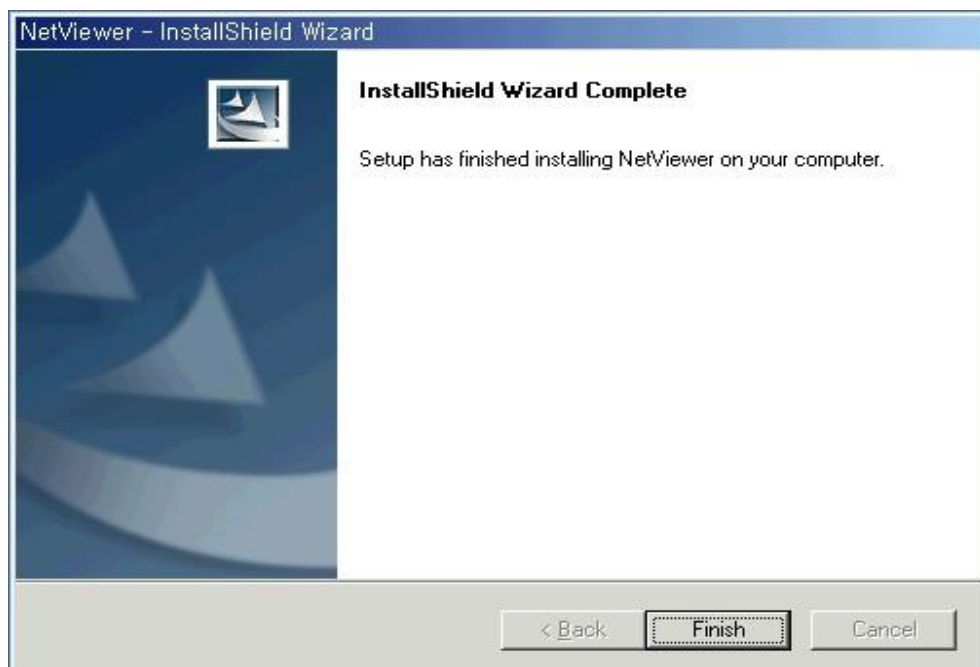


The screenshot shows the 'NetViewer - InstallShield Wizard' window at the 'Setup Type' step. The title bar reads 'NetViewer - InstallShield Wizard'. The main heading is 'Setup Type' with the instruction 'Select the setup type to install.' Below this, the text 'Click the type of setup you prefer, then click Next.' is displayed. There are three radio button options: 'Typical' (selected), 'Compact', and 'Custom'. Each option has a 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 'InstallShield' logo is visible. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

6) Please click Next.



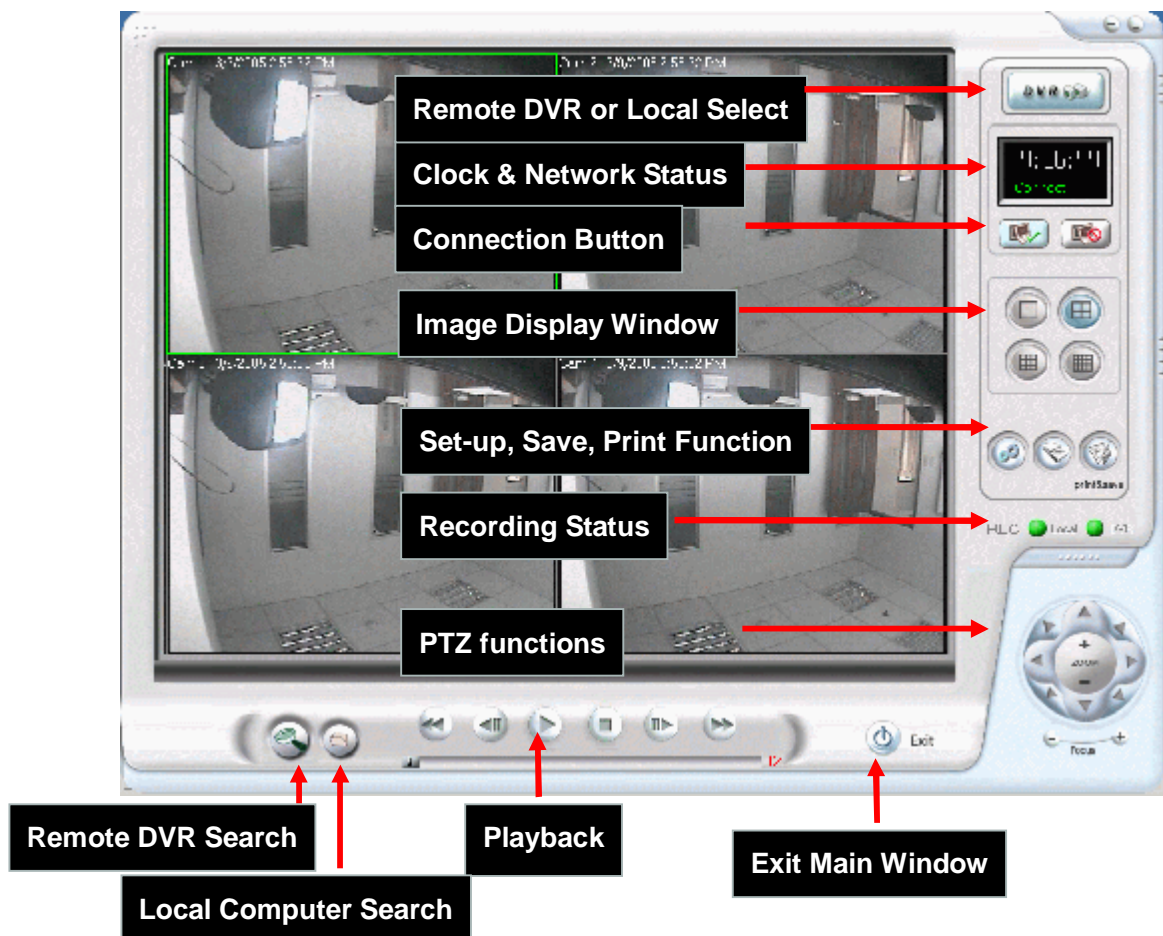
7) Installation is finished.



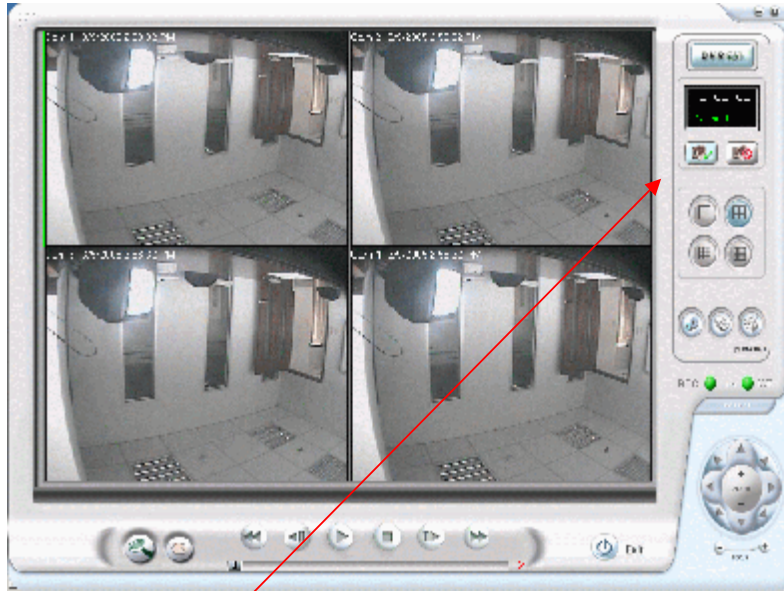
2. NetViewer Program Operations

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.

A 'Login' window with a title bar. It contains four input fields: 'TITLE' with a dropdown menu showing 'admin', 'IP' with a text box containing '192 . 168 . 123 . 189', 'PORT' with a text box containing '5000' and a checkbox, and 'PASS' with an empty text box. At the bottom are two buttons: 'OK' with a green checkmark and 'Cancel' with a red X.

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

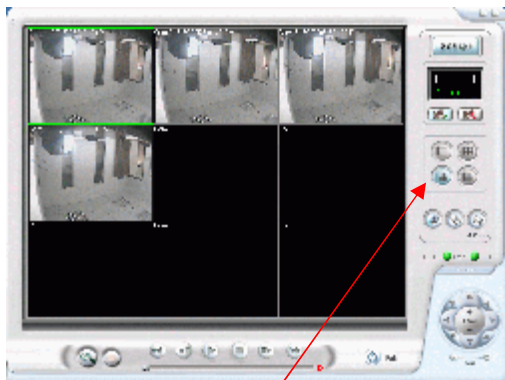
4) Image Display Window Selection



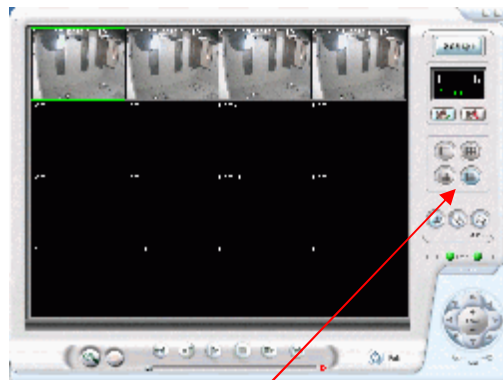
A) Single Picture Display



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

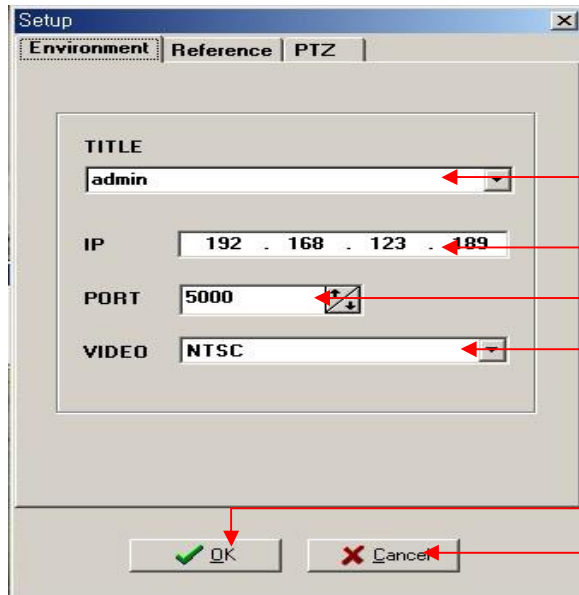


The pictures received through network from remote DVR can be saved in local Hard Disk Driver.



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)

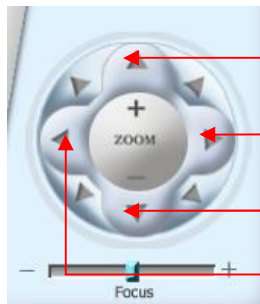
C) PORT Input

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

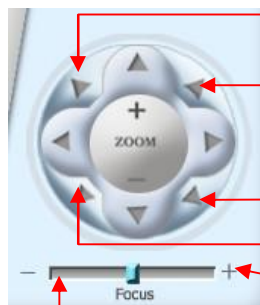


1) Tilt Up

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

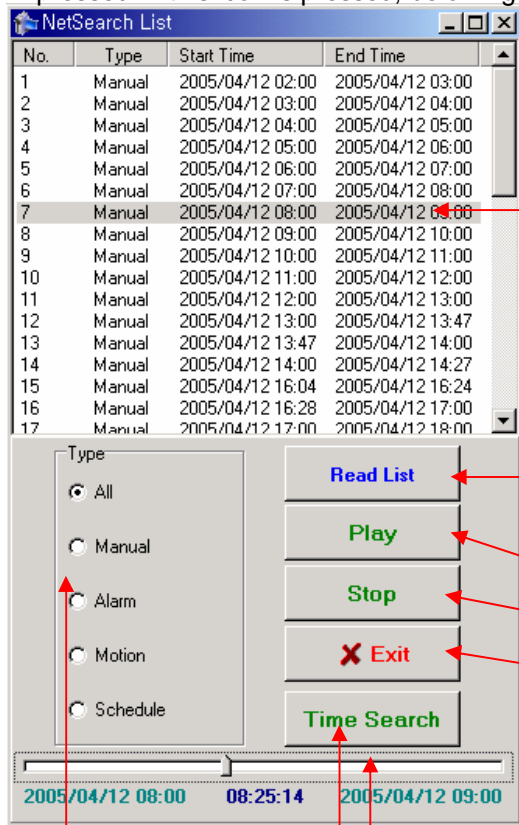
9) Focus Far

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.

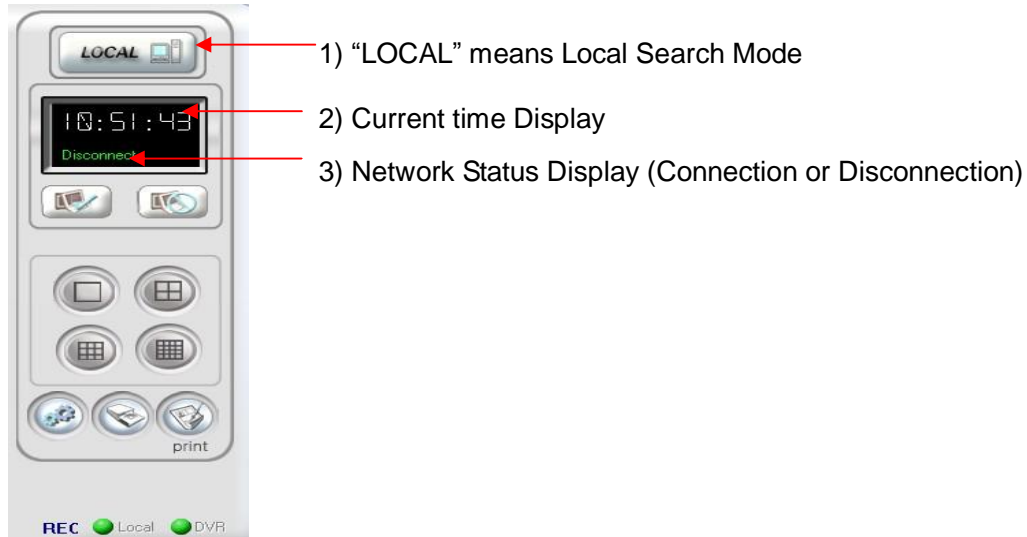
6) "Time Search" or "Time Search Slide bar" enables user to move and playback the given time of selected recorded file directly. For example, user can playback the recorded file from time 08:25:14 during 8 to 9 am file.

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

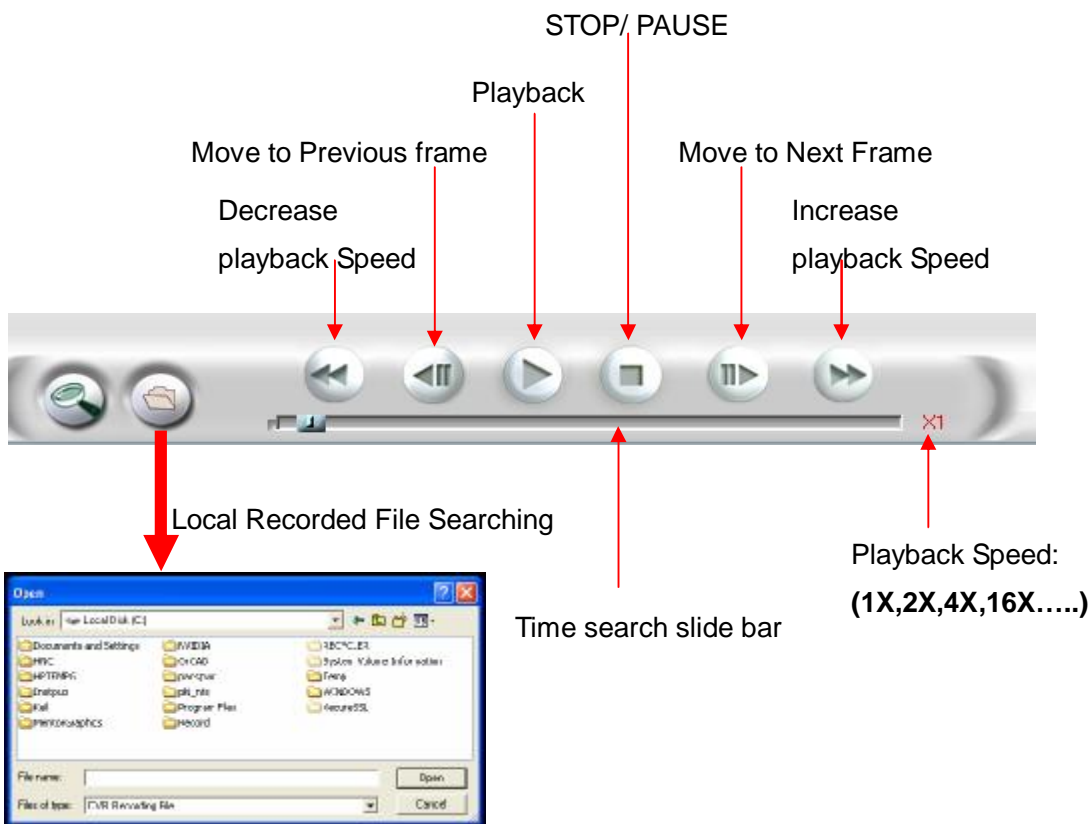
ë Note

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



10) Playback Icons for local playback



11) Print

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



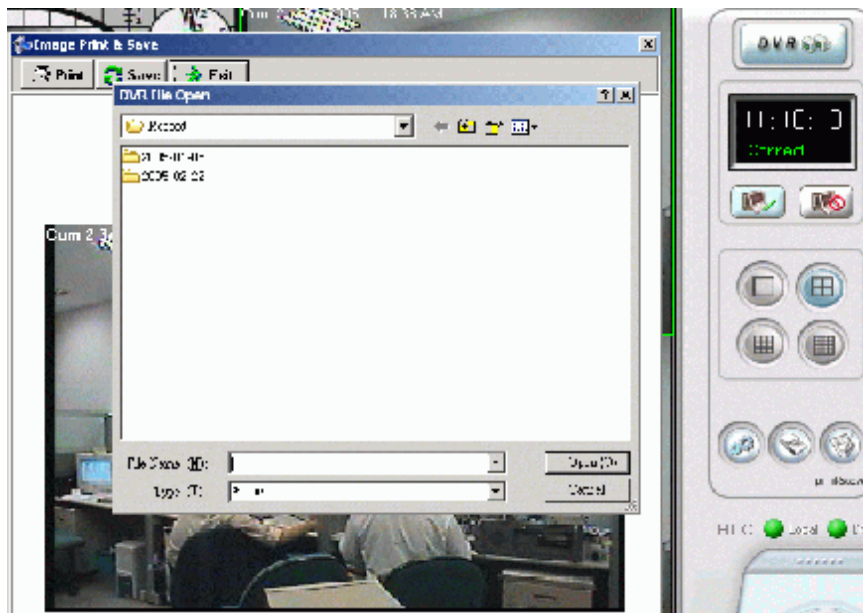
- 2) A window for printing preview will be appeared as below.
Selected image will be printed by clicking this icon.



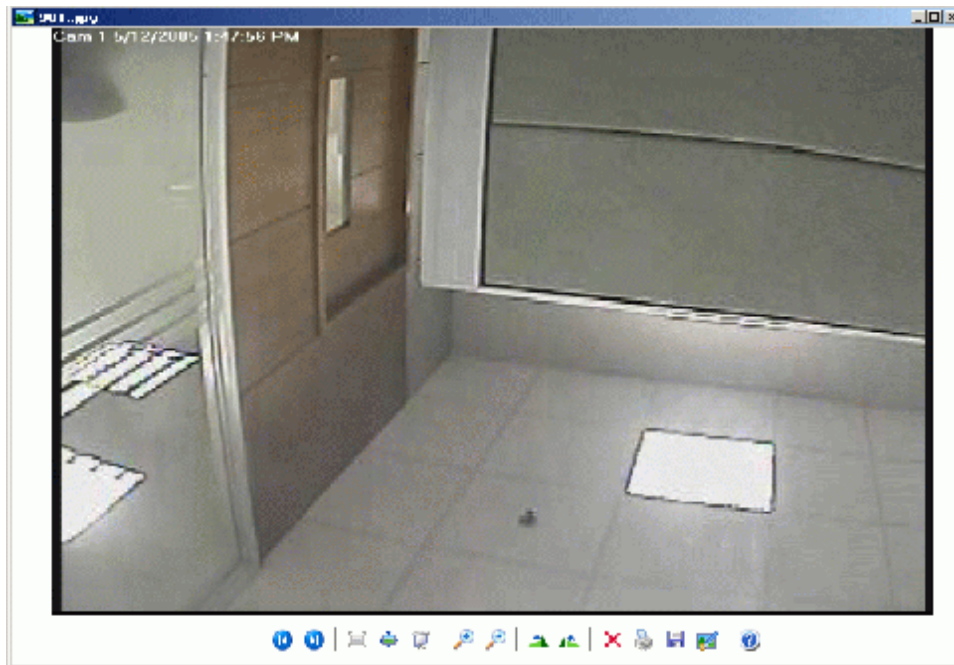
3) To save a standard JPEG file, click “Save” icon, after selecting image.



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.

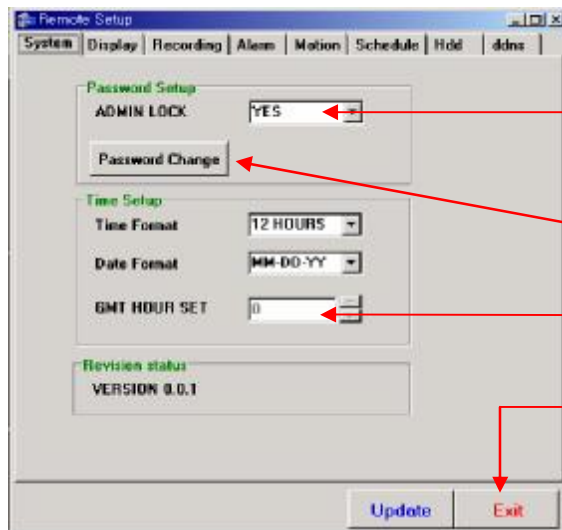


- 5) The saved file can be opened in any computer using any graph editing software.



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.

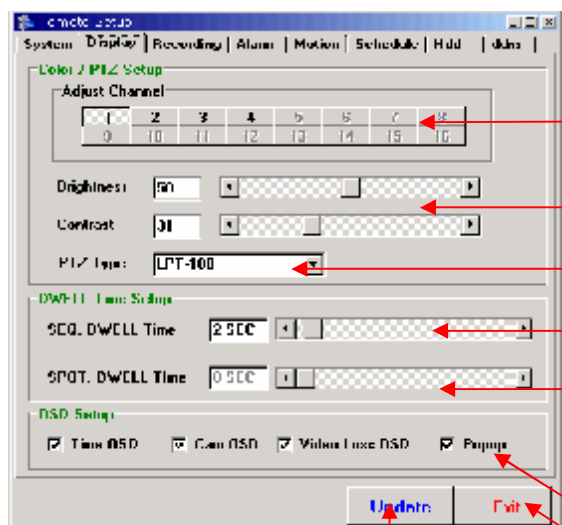
B) Change password

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)

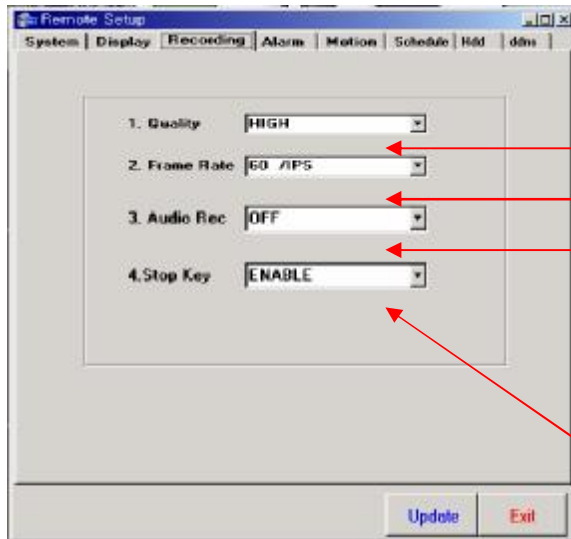
E) OSD ON/ OFF Setting

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

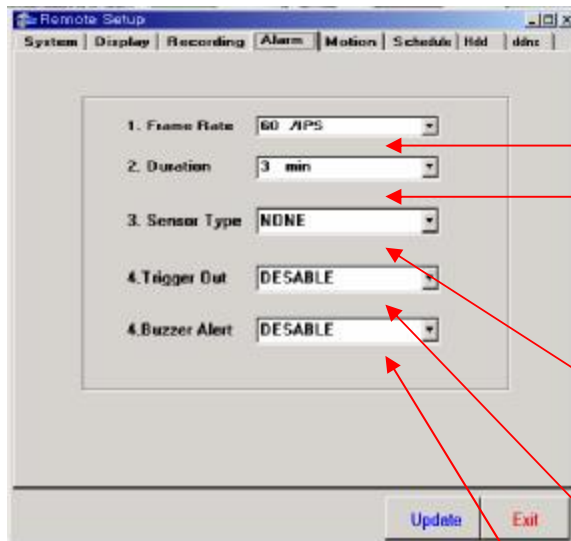
D) AUDIO: ON/ OFF

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

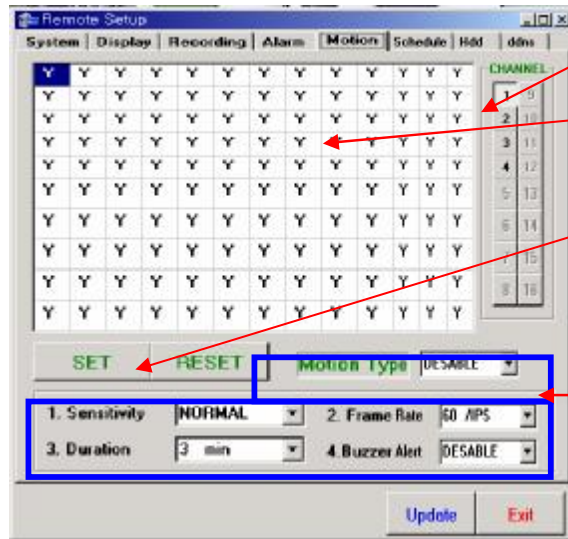
D) TRIGGER OUT (Relay Output)

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.

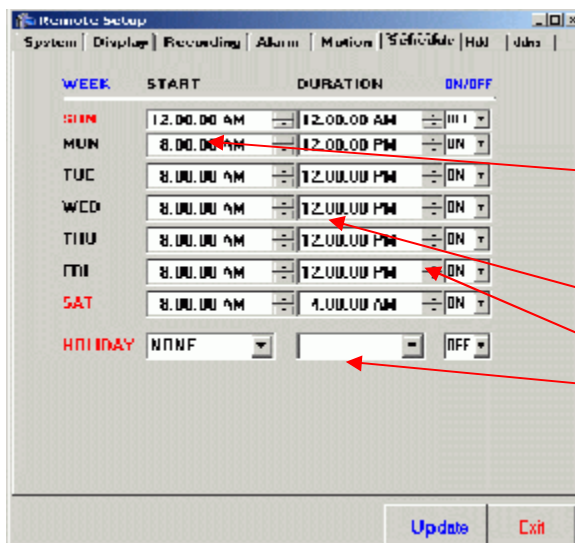
F) Frame Rate

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

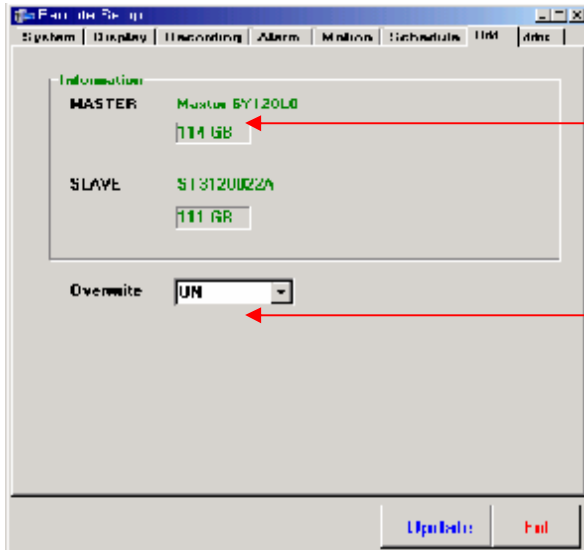
Enable or disable schedule recording.

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

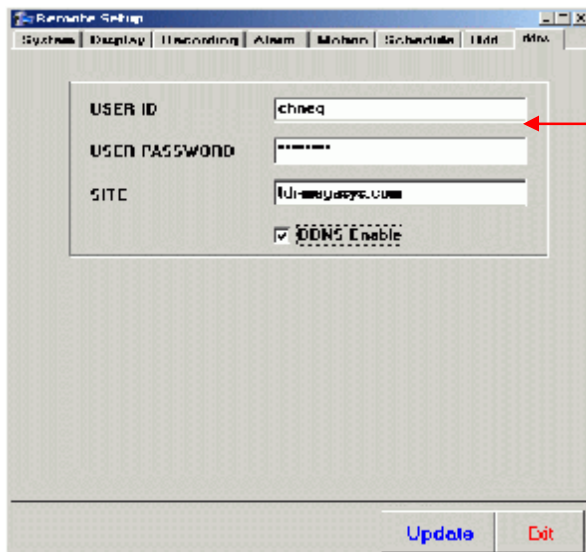


1. HDD Information Display

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

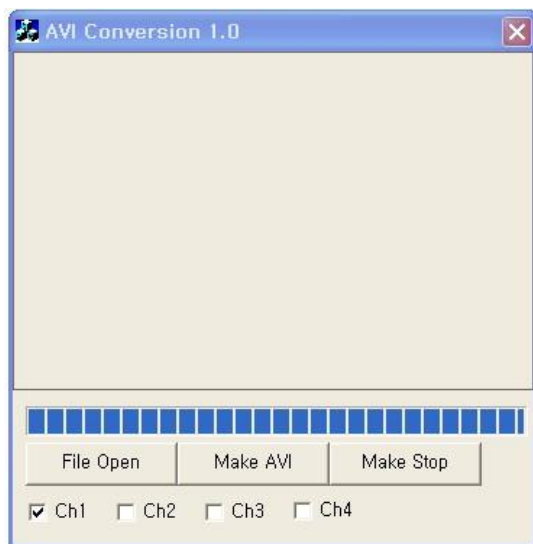
The saved files in local HDD, which is M-JPEG format can be converted into AVI file for playback in any PC using Avi Converter which is generated by installing NetViewer software. Path is

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.

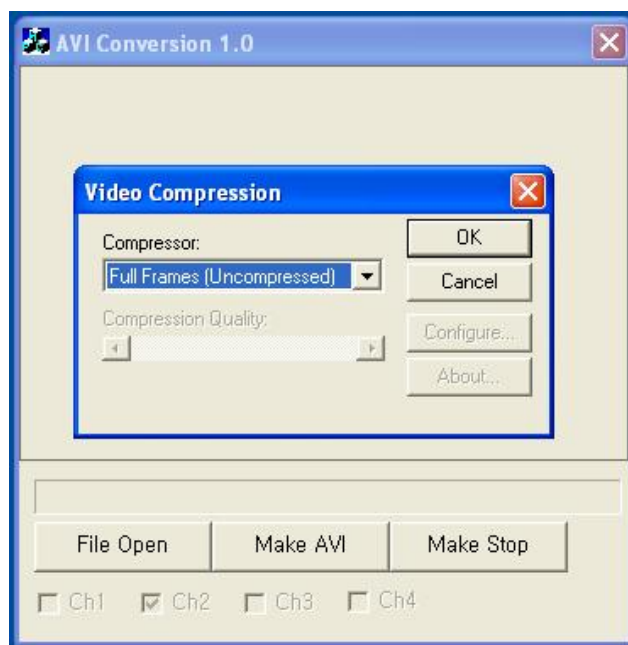




c) AVI Conversion Program can be executed channel by channel. First, select the channel which is converted. Then press “MAKE AVI” to convert into AVI file. Below window will be appeared.

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.



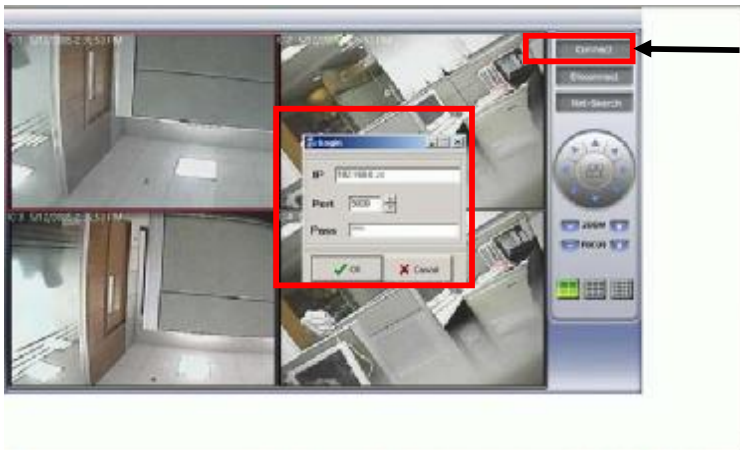
Input IP address with port number.

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.

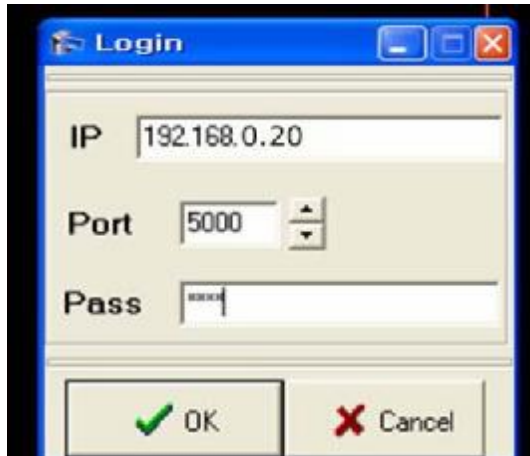


“Connect” icon.

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

Note:

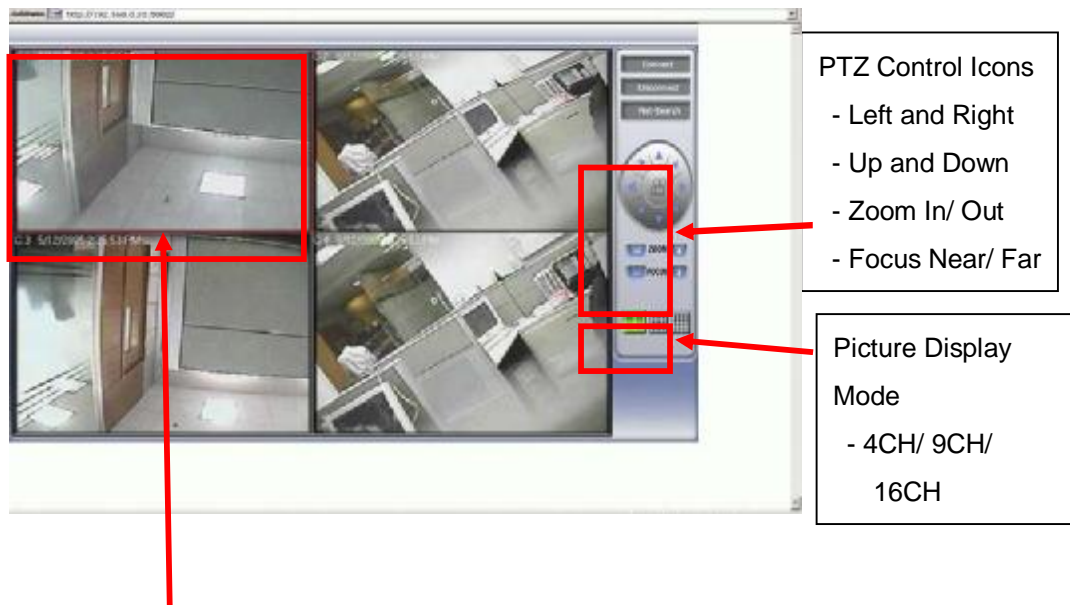
Password is the number which is stored in DVR. Default is 1111



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.

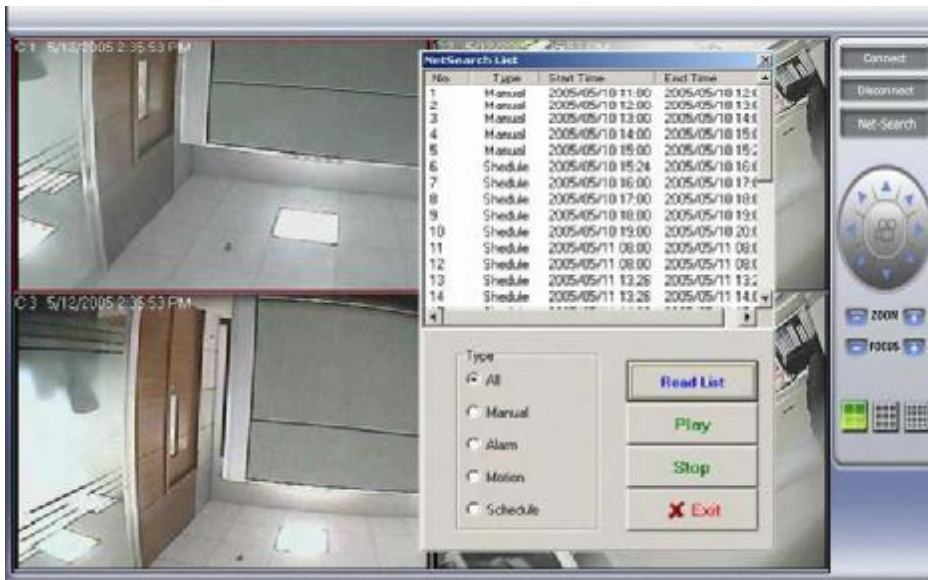


In order to control PTZ Camera, correct PTZ Camera protocol should be selected in DVR web. The picture area (Cameo) (which PTZ function is needed to control) is selected by mouse. And then press the PTZ control icon.

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

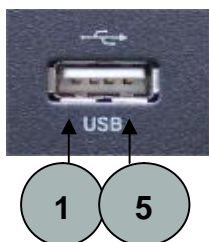
< Playback procedure >

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

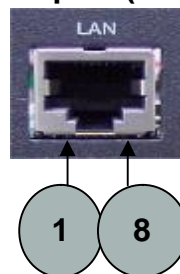
Pin Description of connectors

1. USB Pin Descriptions



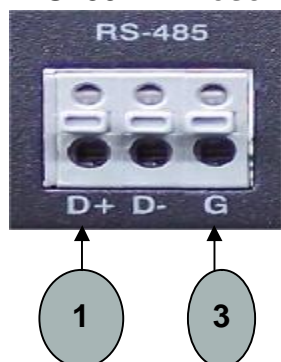
Pin	Pin description
1	VCC
2	D- (TX-)
3	D+(TX+)
4	GND
5	SHIELD

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

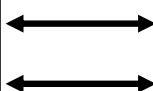


DVR

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

Slave Unit like PTZ Camera

Pin NO.	Pin description
?	RS485 D+ (RX +)
?	RS485 D- (RX -)



4. Alarm Input & Outputs Pin Descriptions



< Alarm Input Pin >

Pin NO.	Pin description
1	Ground (Common)
2	Ground (Common)
3	Sensor input 01
4	Sensor input 02
5	Sensor input 03
6	Sensor input 04
7	Sensor input 05
8	Sensor input 06
9	Sensor input 07
10	Sensor input 08
11	Sensor input 09
12	Sensor input 10
13	Sensor input 11
14	Sensor input 12
15	Sensor input 13
16	Sensor input 14
17	Sensor input 15
18	Sensor input 16
19	Ground (Common)
20	Ground (Common)

< Alarm Output Pin >

Pin NO.	Pin description
21	Relay output NO1
22	Relay output NC1
23	Ground (Common)
24	Relay output NO2
25	Relay output NC2
26	Ground (Common)
27	Relay output NO3
28	Relay output NC3
29	Ground (Common)
30	Relay output NO4
31	Relay output NC4
32	Ground (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 menuà 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.

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	DEFAULT	: YES / NO
9	REV STATUS	: VERSION
1 : 1 : 1		
ENTER ▲ ▼ ◀ ▶ EXIT		

ö Note

After finishing S/W upgrade, version will be changed. The upgraded firmware will be relected on 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	16 Ch, NTSC/PAL, 1V peak-to-peak, 75 Ohm, BNC
Audio Input/ Output	1 Ch Input/ 1 Ch Output
Video Output	1CH for Monitor, 1CH for Spot, 16Ch loop-through Output
Display Resolution	Display Resolution (NTSC: 720x480, PAL: 720x576)
Display Mode	Single, QUAD, Octal, Hex and Sequential image
Recording Resolution	Full Mode, 16Ch Multiplexing Recording,(NTSC: 720x480, PAL: 720x576)
Compression Algorithm	M-JPEG (modified)
OS	Embedded Linux
Triplex	Record / Playback / Network at the same time
Unit processing Speed	1/60 Sec for 720x240(NTSC), 1/50 Sec for 720x288(PAL)
Compression Rate (KB/ image) (NTSC: 720x240, PAL: 720x288)	Normal image: 13~17KB/Image (NTSC) 15~19KB/Image (PAL) Complex image: 20~25KB/Image (NTSC), 22~27KB/Image (PAL)
Frame Rate : Recording (IPS)	16CH video real time multiplexing recording Total number of Images/sec: 60 IPS (720x240:NTSC), 50 IPS (720x288:PAL) Recording Mode (Images/sec) 60/30/15/10/5/1/0.5 (NTSC), 50/25/12/6/5/1/0.5 (PAL)
Recording Mode	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
Password Protection	Front Panel Password Protection
	Permits those allowed to access the system
Status Indicator (LED)	Power, Network, Archive, Record, EXT, Key Lock

Alarm (Event, Motion)	Selectable recording CH, Pop up Display
	Duration: 30sec/1,2,3,4,5,6,7,8,9,10,20,30,40,50,60 min
Alarm In(16)/ Relay Out(4)	NONE/ NO or 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.

HDD Management	One or Two (EIDE, ATA-6, 3.5 inch, 7200rpm)
Back-up	Archiving: USB Storage Class Key for data backup
USB	Firmware upgrade, System log file
Pan/Tilt/Zoom	RS485 (Controlled by button, Viewer S/W)
Power	12V DC Adaptor
Mechanical	Unit dimension
	44(W) x1131.5(D) x4.4(H) (17.3 in. x12.4In. x 1.73 In.) (19" rack mountable, 1U)
	Unit Weight 11lb (5kg)
Ambient Temperature	40° to 104 °F (5 ° to 40 °)
Approval	FCC Class A, CE and MIC