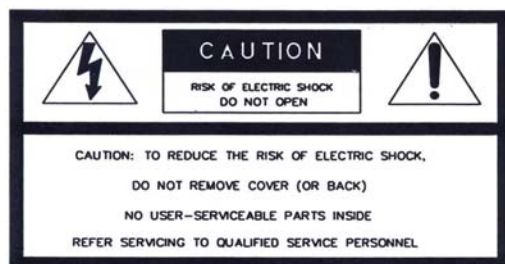


INSTALLATION/OPERATION

DIGITAL VIDEO RECORDER (MPEG4 - 4/8/16 CHANNEL)





The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: To prevent a risk of fire or electric shock, do not expose this product to rain or moisture.

- This installation should be made by a qualified service person and should conform to all local codes.
- This is a Class A product. 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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Edition : Dec.2005

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Note This Manual was compiled with the greatest of care and all information double checked. At the time of printing the description was complete and correct. Because of the further development of products, the content of the manual might change without prior notice. Manufacturer will not be liable for damage, which is directly or indirectly due to errors, incompleteness, or discrepancies the manual and the product described.

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1. FOR THE SAFETY OF CUSTOMERS

SAFETY PRECAUTIONS

- 1. Do not modify the three-prong grounding type power plug in any way.**
- 2. Operate this unit only from the type of power source indicated on the label.**
- 3. Do not block or cover ventilation openings on the Unit.**
- 4. Do not place this unit near a radiator or heating vent.**
- 5. Do not push objects of any kind through cabinet openings. This may result in fire or electrical shock.**
- 6. Before adding attachments always ask a service technician to perform routine safety tests to determine that equipment is in safe operating condition. Ground potential tests should be part of the routine safety check made by the service technician.**
- 7. Do not place the unit on an unstable cart, stand, or shelf where it may fall and injure personnel or damage equipment.**
- 8. Route power cords so that they cannot be walked upon or tripped over. Do not allow anything to rest on the power cord.**
- 9. Do not install the unit in wet areas, or where it may be exposed to rain or water. Do not spill liquid of any kind on the unit.**
- 10. Unplug the power cord from the unit before cleaning case. Use only a damp cloth. Do not use alcohol, spirits, or ammonia to clean the device.**

DO NOT ATTEMPT TO CLEAN THE INTERIOR OF THIS UNIT- THIS ACTION MUST BE PERFORMED BY THE SERVICE TECHNICIAN AS REQUIRED DURING NORMAL MAINTENANCE.

- 11. Refer all servicing to qualified service personnel. REMOVAL OF TOP COVER BY UNAUTHORIZED PERSONNEL MAY EXPOSE THE USER TO DANGEROUS VOLTAGES OR OTHER HAZARDS.**
- 12. Unplug the unit immediately and notify the service technician.**
 - A. If liquid has been spilled into the device or the device has been exposed to rain or water.**
 - B. If the unit has been dropped or the casing damaged.**
 - C. If fuses continue to blow.**
 - D. If the power cord is damaged or frayed.**
 - E. If a distinct change from normal operation is apparent.**

When replacement parts are required, be sure that the service technician uses components specified by the manufacturer which have the same characteristics as the original parts. UNAUTHORIZED SUBSTITUTIONS MAY RESULT IN FIRE, ELECTRICAL SHOCK OR OTHER HAZARDS.

Upon completion of any service or repairs, ask the technician to perform safety checks to determine that the equipment is in safe operating condition.

WARNING: SERIOUS SHOCK HAZARDS EXIST WITHIN THE COVERS OF THIS DEVICE. DO NOT OPEN THE COVERS UNDER ANY CIRCUMSTANCES, THERE ARE NO USER SERVICEABLE COMPONENTS INSIDE

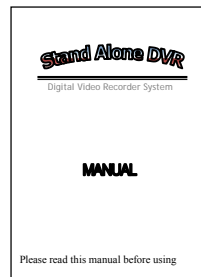
2. DESCRIPTION OF PARTS AND FUNCTION

2-1 COMPOSITION OF UNIT

Standard



DVR



User Manual



Power Cable



Remote Control



Batteries

If you have received a product “without HDD”, the accessories to fit HDD will be supplied

1) Stand for HDD installation 2) fixing screws will be supplied.

☐ Accessories are subject to change without notice.

Use the designated HDD

Please use the designated HDD. Otherwise, recording may not operate correctly.

Maker	HDD Capacity
Western Digital	80GB, 160GB, 250GB, 320GB

2-2 FEATURES

- **Convenience**

- User-friendly UI(Text Based User Interface)
- Easy-to-use menu composition
- Easy-to-use recorded data search (Time, Date, Motion, Alarm)

- **Stability**

- Auto restart after power interruption
- DB structure offers data stabilization and best storage utilization

- **Expandability**

- Various remote multi DVR's can be controlled by Web browser (PC Client System)

- **Technology**

- Embedded LINUX OS
- Totally maximum recording rate 100 fps (Pal) 120 fps (NTSC)
- High-resolution & high-quality MPEG-4 algorithm
- Using Water marking & scrambling technologies,
- Strong protection recorded data
- MPEG-4 : 1 ~ 2 Kbytes per image with resolution 360x240

- **Functionality**

- Variable recording function (normal, alarm, motion, schedule)
- Full channel real-time monitoring
- Live monitoring, recording, playback, backup, remote access at the same time
- Multi channel playback
- Variable events notification to e-mail, buzzer or PC Client system

2-3 DESCRIPTION OF PARTS AND FUNCTION

2-3-1 Front Panel



(1) LED

- REC : Recording status (When recording is on, the red LED flashes)
- PWR : System Power On/Off (When power is on, the green LED is lit)

(2) USB 2.0 PORT

- USB2.0 connector

(3) POWER BUTTON

- System Power On/Off

(4) NUMERIC & CHARACTER

- Input for numeric & character

(5) MENU

- Displays on the menu on the screen

(6) SEARCH

- Entering search mode directly

(7) **PLAY** (□)

- Playback of the recorded data
- If pressed again in play mode, fast-forward will be executed

(8) **REWIEND** (□)◀

- Playback on the reverse

(9) **PAUSE** (▮▮)

- To freeze picture on playback mode and live mode.

(10) **STOP / EJECT** (■)

- To stop playback and go back to live mode.

(11) **REC** (●)

- To start & stop manual recording of relevant camera in a full screen live mode.

(12) **VOL** (▲▼)

- To adjust volume up and down.

(13) **AUDIO (8/16CH Only)**

- when user selects “audio” key, available audio will be switched.

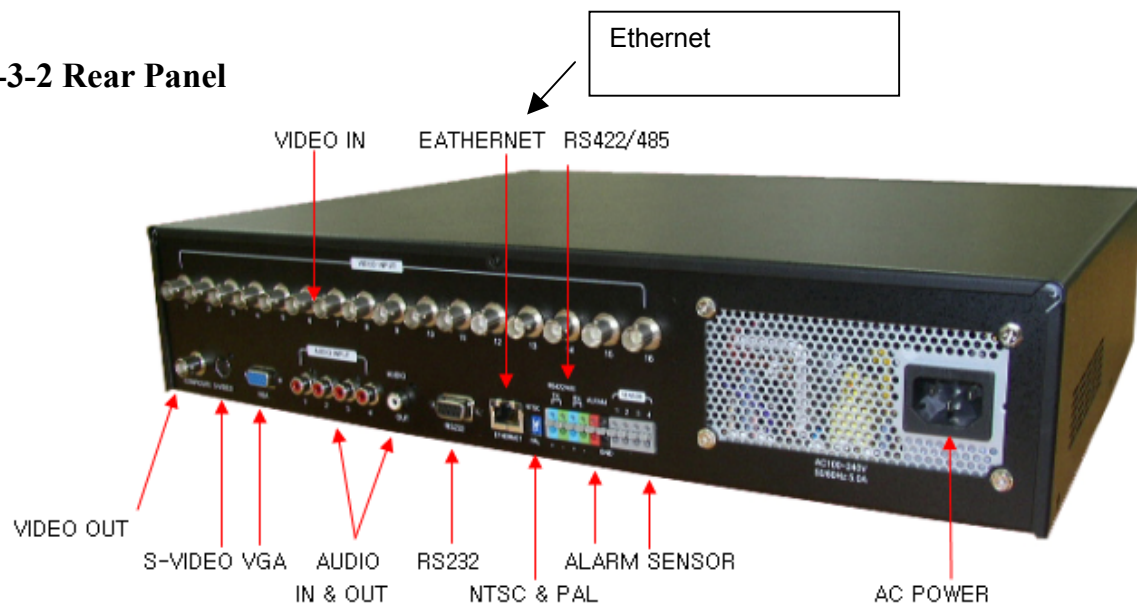
(14) **ARROW KEY**

- Curser shifting on the menu
- Shows the divided screen

(15) **SELECT**

- Menu selection

2-3-2 Rear Panel



(1) Video Input (BNC)

- 16/8/4 Camera input (1.0 v p-p, 75Ω) depending on the model

(2) Video Out (BNC / S-VIDEO / VGA)

- Composite Output through BNC / S-VIDEO / VGA

(3) Line Audio Input

- 4 Audio Input through line (1x Audio on 4way)

(4) Audio Output

- 1 Audio Output

(5) RS232

- 1 Serial Communication

(6) Network Port (RJ-45)

- Available to monitor live screen and recorded data on the HDD through Internet or LAN

(7) DIP switch (NTSC/PAL Video Selection)

- Selectable either NTSC or PAL

(08) RS422 / 485

- 1 Serial Communication for Pan / Tilt Camera (Future Development)

(09) Alarm/Sensor

- Alarm / 4 Sensor input / 1 output port

(10) AC Power

- AC 110~240 V (Free Voltage)

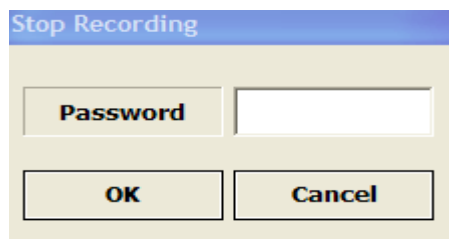
ATTENTION

When the video format is changed (NTSC/PAL), the system should be re-booted

The video format should be selected before booting

Default Passwords

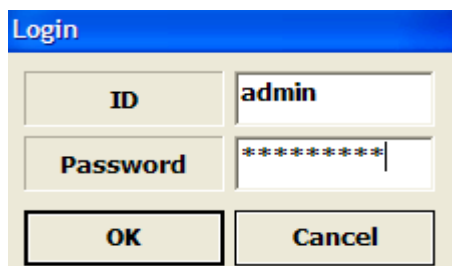
“00000000” i.e. 8x Zero’s. Password is required if you need to down-power or stop recording, prompt will be displayed asking for password.



A dialog box titled "Stop Recording" with a blue header. It contains a "Password" label next to an empty text input field. Below the input field are two buttons: "OK" and "Cancel".

Web Client

User ID “**admin**” (not case sensitive). Admin ID cannot be changed this is full administrator ID. Password “00000000” i.e. 8x Zero’s



A dialog box titled "Login" with a blue header. It contains two rows of labels and input fields. The first row has an "ID" label and an input field containing "admin". The second row has a "Password" label and an input field containing "*****". Below the input fields are two buttons: "OK" and "Cancel".

2-3-3 System Connection Diagram



2-3-4. Remote Controller



1. Power :
2. Rec : Start & Stop Recording
3. □~□:Key for figure and character
4. PTZ: Controlling PTZ camera (future development)
5. OSD : Operating OSD ON/OFF
6. SEQ : Key for SEQ operation
7. LOG : Direct access Log list
8. INFO: Direct access system Info.
9. ID : Reserved.
10. MUTE : Audio Mute
11. AUDIO : Available audio switching when user select this key
12. MENU : Entering system menu
13. SEARCH : Entering search
14. ARROW & SPLIT : Key moving left, right, up and down. Also, Screen split display shows
15. VOL”+,-“ : Up, down volume
16. CH “+,-“ : Up, down channel(s)
17. □□ : Play(or fast forward)
18. □ : Reverse play
19. II : Pause
20. ■ : Stopping playback

2-3-5. OSD Description

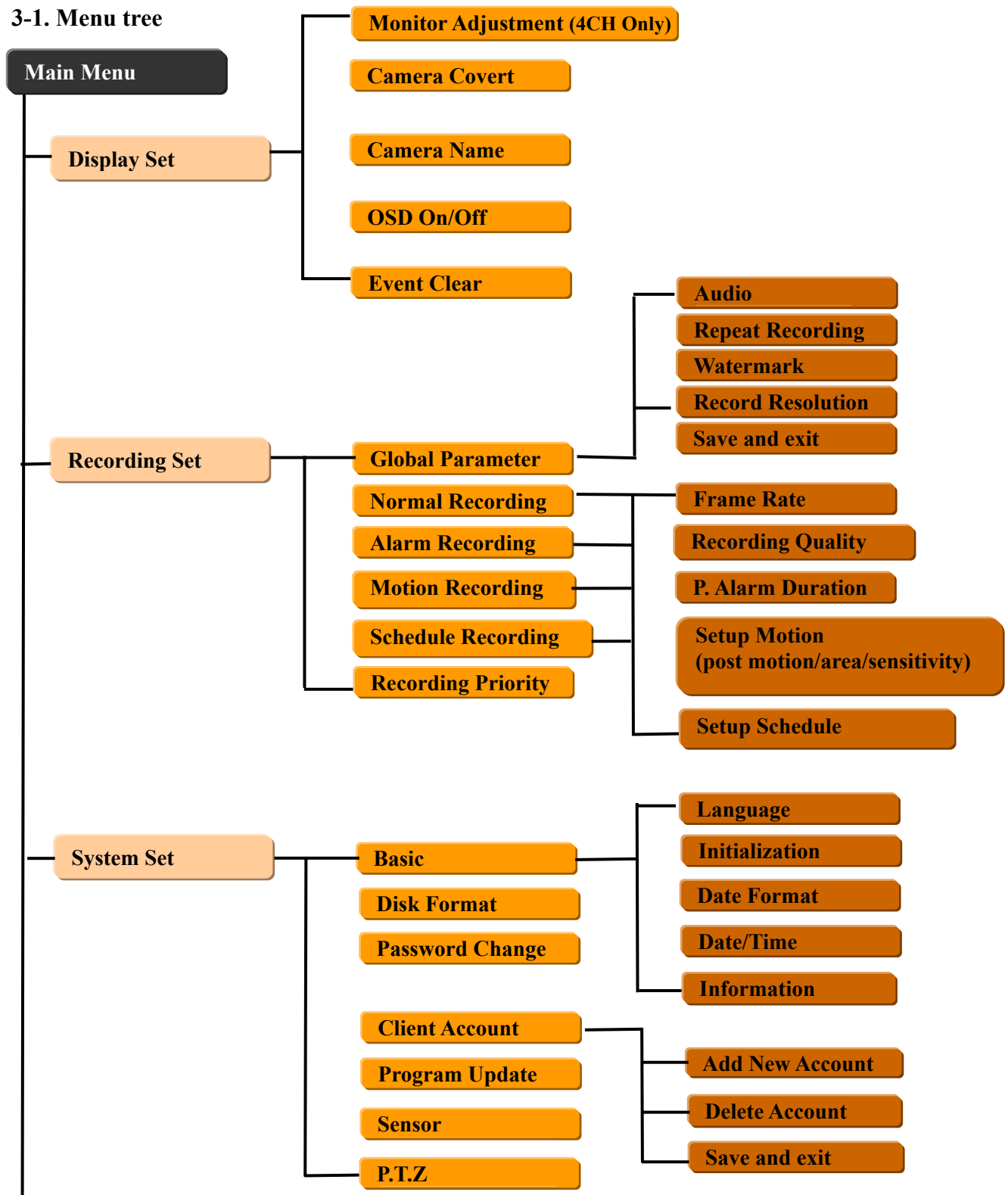


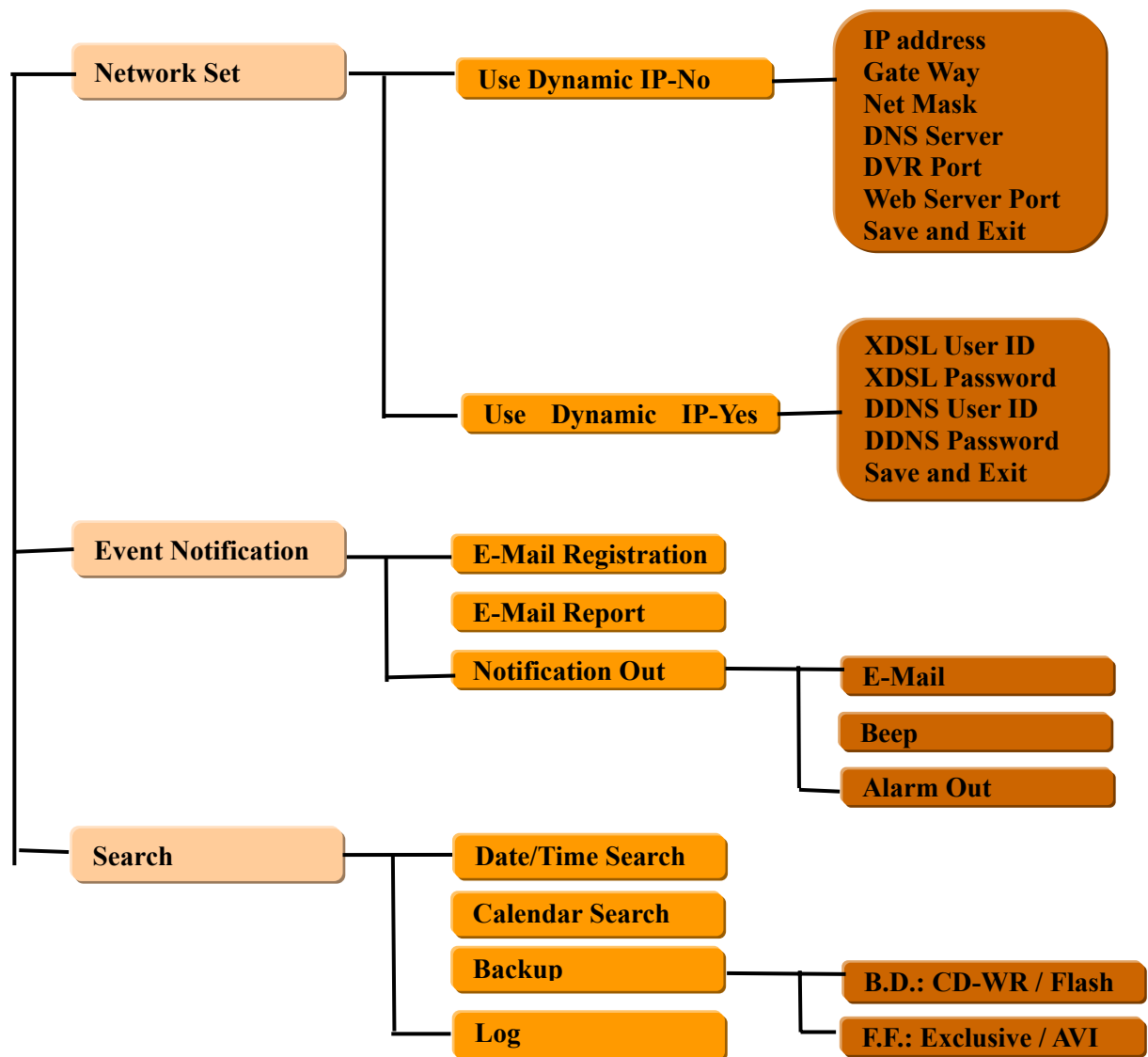
NORMAL: This shows the recording Mode.
 * 16/8channel doesn't show recording icon as 4channel.
 If the user programmed "schedule recording" and current time is out of range, "STANDBY" will be shown when the "Rec" button is pushed
 HD :34%, This shows how much as a percentage is occupied on the Hard Disk Drive
 12-31-2004 12:00:00: This shows the system date & time

This shows "Alarm recording mode / Motion recording mode/ Power loss"/ Video Loss" in left to right order.

3. MENU-

3-1. Menu tree



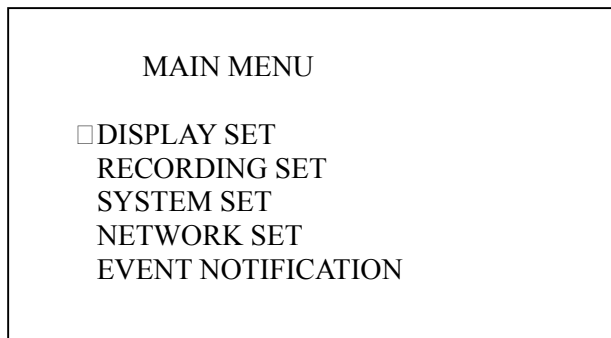


3-2 Main Menu

NOTE

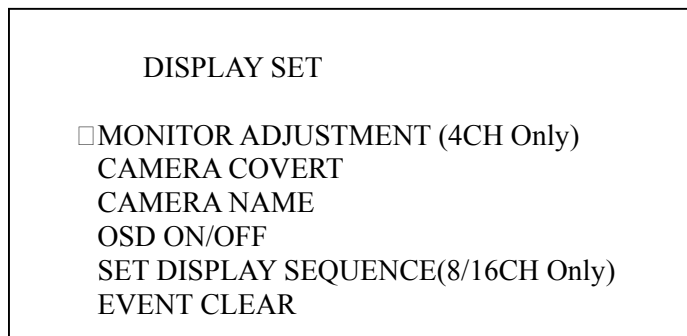
Before using, be sure to setup the unit properly.

Below menu shows when you press the menu button on the front when the system is on.



Please use UP (▲) or DOWN(▼) on the front Panel to move to next menu. To move to the submenu, use the “SELECT” button.

Display Set



Monitor Adjustment- (4CH Only)

This controls the verticality and horizontality of live picture. With the background screen shown, use Left (◀), Right(▶), Up(▲), Down(▼) button for setting the location.

Camera Covert

This allows the camera to be hidden, which means, camera is not available/shown in live monitoring (just blue screen), the camera will still be recording (if recording is “on” condition).

Camera Name

Camera title can be displayed on the screen.

OSD On/Off

OSD on/off: Selecting whether the OSD is displayed.

Set Display Sequence

<p>SET DISPLAY SEQUENCE</p> <p><input type="checkbox"/> FULL DISPLAY SEQUENCE QUAD DISPLAY SEQUENCE START FULL DISPLAY SEQUENCE START QUAD DISPLAY SEQUENCE</p>

Sequence dwell time can be selected among 5,10,15,30,45,60 sec. When you select “ Start Full or Quad Display Sequence”, monitor switch will be started (Or, user can select “ SEQ” button on the remote controller)

Event Clear

This is for erasing OSD characters related with events.

Recording Set

In our system, all recorded data can be saved in the format of watermark or scrambling when user select “watermark :On” (Default On)So, After downloading the saved data you want to check , user can confirm it whether it has been changed by someone using PC software provided.

<p>RECORDING SET</p> <p><input type="checkbox"/> GLOBAL PARAMETER NORMAL RECORDING ALARM RECORDING MOTION RECORDING SCHEDULE RECORDING RECORDING PRIORITY</p>

Global Parameter

All the setup values for Audio/ Repeat/ Watermark / Resolution will be applied globally to all channels.

Normal Recording

It executes the continuous recording according to the designated set-up value.

Alarm recording

It executes the recording when sensor is taken.

Motion recording

It executes the recording when motion is captured.

Schedule recording

It executes the recording as per the programmed time table.

Recording priority

It specifies the priority among 4 kinds of recording methods.

NOTE

“Instant playback” (direct playback via ☐, not search mode) is available. The file is created on the unit of 500Mbyte

Recording Parameter

RECORDING PARAMETER

☐AUDIO : ON/OFF
REPEAT RECORDING : ON/ OFF
WATERMARK : ON /OFF
RECORDING RESOLUTION
SAVE AND EXIT

Audio Recording (4CH)

4CH : On/Off. When audio is “on”, the audio will be input globally.

RECORDING PARAMETER

☐ AUDIO 1 RECORDING: OFF~CH16
AUDIO 2 RECORDING: OFF~CH16
AUDIO 3 RECORDING: OFF~CH16
AUDIO 4 RECORDING: OFF~CH16
REPEAT RECORDING OFF
WATERMARK OFF
RECORDING RESOLUTION
SAVE AND EXIT

Audio Recording (8/16CH)

8/16CH: 4 Audio are available. User can match 4 audios to each video channels.

Repeat recording

This sets the recording mode when the HDD capacity is exceeding. Selectable between “On” (overwrite) / “Off” (stop).

Watermark

This can select either Watermark On or OFF. This menu is for protecting video data from forging when exported to the digital media for backup.

Recording Resolution

Unit supports 360x288 / 720x288 mode (PAL) or 360x240 / 720x240 mode NTSC. The default is 360x288 and “← , →” buttons are used for changing the resolution.

NOTE

1. The resolution is applied to all channels. (Individual set-up is not possible)
2. When you are in the “recording” mode, the menu, “Global parameter” and 4 recording mode (normal, alarm, motion, schedule)” can not be changed. If you want to change these settings you must stop recording first.

Normal Recording

NORMAL RECORDING (4channel Only)

☐ CH1 FRAME RATE : 25FPS
CH2 FRAME RATE : 25FPS
CH3 FRAME RATE : 25FPS
CH4 FRAME RATE : 25FPS
CH1 RECORDING QUALITY : HIGH
CH2 RECORDING QUALITY : HIGH
CH3 RECORDING QUALITY : HIGH
CH4 RECORDING QUALITY : HIGH
SAVE AND EXIT

Frame Rate (fps) :4channel

The above shows available frame rate each channel. In 360x288 mode, 0~25fps is available each channel (4 channel totally 100fps) and 720x 288 is 1~12/13fps each (4 channel total 50fps, available max. frame rate for each channel is 25 fps- for exam, Ch.1 25 fps, Ch2. 25 fps, Ch3. 0fps, Ch4 0fps. ~)

Frame rate will be changed pushing the “←, →” button

NORMAL RECORDING (8/16channel Only)

☐ PAGE : 1 (8/16CH Only)
☐ CH1 FRAME RATE : 6FPS
CH2 FRAME RATE : 6FPS
CH3 FRAME RATE : 6FPS
CH4 FRAME RATE : 6FPS
CH1 RECORDING QUALITY : HIGH
CH2 RECORDING QUALITY : HIGH
CH3 RECORDING QUALITY : HIGH
CH4 RECORDING QUALITY : HIGH
SAVE AND EXIT

Frame Rate (fps) :8/16 channel

The above shows available frame rate each channel. In 360x288 mode, 6 fps is available each channel (16/8 channel totally 100fps) and 720x 288 is 3 fps each (16/8 channel totally 50fps).

Individual frame rate control is available as per 4channel.

Frame rate will be changed pushing the “←, →” button

Recording Quality

Selectable from High, Mid, Low.

Save and Exit

All the set-up value will be stored and move to higher menu.

Alarm Recording

Either one is taken from 4 sensors, the recording will be activated as per set-up value.

ALARM RECORDING (4channel Only)

☐ CH1 FRAME RATE : 25FPS
CH2 FRAME RATE : 25FPS
CH3 FRAME RATE : 25FPS
CH4 FRAME RATE : 25FPS
CH1 RECORDING QUALITY : HIGH
CH2 RECORDING QUALITY : HIGH
CH3 RECORDING QUALITY : HIGH
CH4 RECORDING QUALITY : HIGH
POST ALARM DURATION : 5sec
SAVE AND EXIT

Frame Rate (fps) :4channel

The above shows available frame rate each channel. In 360x288 mode, 0~25fps is available each channel (4 channel totally 100fps) and 720x 288 is 1~12/13fps each (4 channel totally 50fps, available max. frame rate each channel is 25 fps- for exam, Ch.1 25 fps, Ch2. 25 fps, Ch3. 0fps, Ch4 0fps. ~)

Frame rate will be changed pushing the “←, →” button

ALARM RECORDING (8/16channel Only)

□ PAGE : 1 (8/16CH Only)

CH1	FRAME RATE	: 6FPS
CH2	FRAME RATE	: 6FPS
CH3	FRAME RATE	: 6FPS
CH4	FRAME RATE	: 6FPS
CH1	RECORDING QUALITY	: HIGH
CH2	RECORDING QUALITY	: HIGH
CH3	RECORDING QUALITY	: HIGH
CH4	RECORDING QUALITY	: HIGH
POST ALARM DURATION		: 5sec
SAVE AND EXIT		

Frame Rate (fps) :8/16 channel

The above shows available frame rate each channel. In 360x288 mode, 6 fps is available each channel (16/8 channel totally 100fps) and 720x 288 is 3 fps each (16/8 channel totally 50fps). Individual frame rate control is available as per 4channel.

Frame rate will be changed pushing the “←, →” button

Recording Quality

Selectable from High, Mid, Low.

Post Alarm Duration

After alarm activates, this sets how long the recording continues. The value is from 5/ 30/ 60/ 90/ 120/ 150/ 180/ 210/ 240 sec.

Save and Exit

All the set-up value will be stored and move to higher menu.

Motion Recording

MOTION RECORDING (4channel Only)

☐ CH1 FRAME RATE : 25FPS
CH2 FRAME RATE : 25FPS
CH3 FRAME RATE : 25FPS
CH4 FRAME RATE : 25FPS
CH1 RECORDING QUALITY : HIGH
CH2 RECORDING QUALITY : HIGH
CH3 RECORDING QUALITY : HIGH
CH4 RECORDING QUALITY : HIGH
SETUP MOTION
SAVE AND EXIT

Frame Rate (fps) :4channel

The above shows available frame rate each channel. In 360x288 mode, 0~25fps is available each channel (4 channel totally 100fps) and 720x 288 is 1~12/13fps each (4 channel totally 50fps, available max. frame rate each channel is 25 fps- for exam, Ch.1 25 fps, Ch2. 25 fps, Ch3. 0fps, Ch4 0fps. ~)

Frame rate will be changed pushing the “←, →” button

MOTION RECORDING (8/16channel Only)

☐ PAGE : 1 (8/16CH Only)
CH1 FRAME RATE : 6FPS
CH2 FRAME RATE : 6FPS
CH3 FRAME RATE : 6FPS
CH4 FRAME RATE : 6FPS
CH1 RECORDING QUALITY : HIGH
CH2 RECORDING QUALITY : HIGH
CH3 RECORDING QUALITY : HIGH
CH4 RECORDING QUALITY : HIGH
SETUP MOTION
SAVE AND EXIT

Frame Rate (fps) :8/16 channel

The above shows available frame rate each channel. In 360x288 mode, 6 fps is available each channel (16/8 channel totally 100fps) and 720x 288 is 3 fps each (16/8 channel totally 50fps).

Individual frame rate control is available as per 4channel.

Frame rate will be changed pushing the “←, →” button

Recording Quality

Selectable from High, Mid, Low.

Setup Motion

```
SETUP MOTION
PAGE : 1 (8/16CH Only)
POST MOTION : 30 SEC
SET CH1 MOTION AREA
SET CH2 MOTION AREA
SET CH3 MOTION AREA
SET CH4 MOTION AREA
CH1 MOTION SENSITIVITY: HIGH
CH2 MOTION SENSITIVITY: HIGH
CH3 MOTION SENSITIVITY: HIGH
CH4 MOTION SENSITIVITY: HIGH
SAVE AND EXIT
```

Post Motion

This sets the how long the recording lasts after motion is taken. The value is among 30 ~ 240 sec.

Set CH. Motion Area

The following will be displayed when user selects the menu.

			1	2			
			3	4			

The detection area is divided 8x6 cells. Default is all-cells activated. 1,2,3,4 cells (white color background) is disabled area. “SEL” button is required for selecting some area.

Motion Sensitivity

It consists of High, Mid, Low.

NOTE

When you record the camera image with the motion-recording mode, the data file will be saved depending on the motion sensitivity. So, higher caution is required to apply the sensitivity to the actual recording.

Schedule Recording

SCHEDULE RECORDING (4channel Only)

☐ CH1 FRAME RATE : 25FPS
CH2 FRAME RATE : 25FPS
CH3 FRAME RATE : 25FPS
CH4 FRAME RATE : 25FPS
CH1 RECORDING QUALITY : HIGH
CH2 RECORDING QUALITY : HIGH
CH3 RECORDING QUALITY : HIGH
CH4 RECORDING QUALITY : HIGH
SETUP SCHEDULE
SAVE AND EXIT

Frame Rate (fps) :4channel

The above shows available frame rate each channel. In 360x288 mode, 0~25fps is available each channel (4 channel totally 100fps) and 720x 288 is 1~12/13fps each (4 channel totally 50fps, available max. frame rate each channel is 25 fps- for exam, Ch.1 25 fps, Ch2. 25 fps, Ch3. 0fps, Ch4 0fps. ~)

Frame rate will be changed pushing the “←, →” button.

SCHEDULE RECORDING (8/16channel Only)

☐ PAGE 1
CH1 FRAME RATE : 25FPS
CH2 FRAME RATE : 25FPS
CH3 FRAME RATE : 25FPS
CH4 FRAME RATE : 25FPS
CH1 RECORDING QUALITY : HIGH
CH2 RECORDING QUALITY : HIGH
CH3 RECORDING QUALITY : HIGH
CH4 RECORDING QUALITY : HIGH
SETUP SCHEDULE
SAVE AND EXIT

Frame Rate (fps) :8/16 channel

The above shows available frame rate each channel. In 360x288 mode, 6 fps is available each channel (16/8 channel totally 100fps) and 720x 288 is 3 fps each (16/8 channel totally 50fps).

Individual frame rate control is available as per 4channel.

Frame rate will be changed pushing the “←, →” button

Recording Priority

RECORDING PRIORITY
<input type="checkbox"/> 1 ST PRIORITY: NORMAL
2 ND PRIORITY: MOTION
3 RD PRIORITY: SCHED
4 TH PRIORITY: ALARM
SAVE AND EXIT

This sets the priority from the 4 recording methods. If Normal is 1st priority, the recording is carried out as per normal recording' setup value.

System Set

SYSTEM SET
<input type="checkbox"/> BASIC
DISK FORMAT
PASSWORD CHANGE
PROGRAM UPDATE
CLIENT ACCOUNT
SENSOR

Basic

BASIC
<input type="checkbox"/> LANGUAGE : ENGLISH
INITIALIZATION
DATE FORMAT : mm-dd- yyyy
DATE/TIME : 11-18-2004 03:50:31
INFORMATION
SAVE AND EXIT

Language

English, Italian, and French (4 way only). The default is English.

English, Italian, French and Hungarian (8/16 way). The default is English.

Initialization

All the menu value will be returned to the factory default. To initialize the system, you must stop recording first.

Date Format

Can select among the formats, mm-dd-yyyy / dd-mm-yyyy, yyyy-mm-dd. If date format needs to be changed, you must stop recording first.

NOTE

PLAYBACK FOLLOWING TIME CHANGE

The DVR uses the time and date to index video on the hard disk drive so you can find it later. Changing the time can cause the DVR to work incorrectly when you try to play back video. If you set the time 1 hour ahead, this is not a problem. But, if you set the time 1 hour back, there will be more than one recording of the same time.

Such as during the October Daylight Saving Time changeover, if you try to search for video between 1 a.m and 2 a.m, the recorder may not operate properly because there will be two hours of recorded video during this time period. To view video during this overlapping time period, you must start playback before 1 a.m, then recorder will play both hours between 1 a.m and 2 a.m.

You cannot do a backward search through the overlapping time. But, you can do forward search.

Disk Format

DISK FORMAT

☐ INTERNAL HDD : YES
EXTERNAL DEVICE // HDD : NOT FOUND
EXECUTE FORMAT

Password is required for Disk to be formatted (default password is “00000000” 8x Zero’s, which is the same if you need to turn “recording off” see page 12). You must stop recording and playback first to format the HDD.


Client Account

CLIENT ACCOUNT
<input type="checkbox"/> ADD NEW ACCOUNT
DELETE ACCOUNT
SAVE AND EXIT
CLIENT LIST

To access as a Client on the network you first must register “Add New Account” . User ID & Password has to be registered at the system first to connect with a ‘user level’. But, administrator can access without registering. Default Settings USER ID “*admin*” Password“*00000000*”

Program Update

The latest firmware version can be upgraded through USB 2.0 Port using a Memory Stick. When

memory stick connects USB port;  will be shown on the right corner of monitor. Then, enter “menu”-> “System Set”-> “Program Update”. If there is a new file that already installed the system will recognize “new program”, “New program found” will be displayed on the screen. Then, press “Select” button/Key. Processing percentage will be displayed.

NOTE.

1. If the system doesn't recognize “new program”, “New program not found” will be displayed.
2. USB compatibility has been tested successfully, Lexar Jumpdrive 128/256MB, Sandisk Mini Cruzer 128MB & Cruzer Micro 256MB.
3. For system stability please turn off 1) recording 2) playback 3) network connection during upgrading.
4. After updating program, please reboot the Unit.

Sensor

SENSOR	
<input type="checkbox"/> SENSOR 1 INPUT	: N.C
SENSOR 2 INPUT	: N.O
SENSOR 3 INPUT	: NONE
SENSOR 4 INPUT	: NONE
ALARM OUT	: ON
SAVE AND EXIT	

Sensor Input is selectable N.C, N.O, None.

3. Network Set

NETWORK SET	
<input type="checkbox"/> USE DYNAMIC IP:	NO
IP ADDRESS	:000.000.000.000
GATEWAY	:000.000.000.000
NETMASK	:000.000.000.000
DNS SERVER	:000.000.000.00
DVR PORT	2000
WEBSERVER PORT	80
SAVE AND EXIT	

To enter Network Set menu, system will ask for password (default is “00000000” 8x Zero’s).

When user is using a fixed IP, each address is required to be filled out as per network environment.

In fixed IP environment is being used, no need to change DVR & Web Server Port.

As per DVR & Web server port, please refer Appendix 4.

If unit is set up for “Dynamic IP”, the following will be shown.

NETWORK SET	
<input type="checkbox"/> USE DYNAMIC IP:	YES
XDSL USER ID :	
XDSL PASSWORD :	
DDNS USER ID :	
DDND PASSWORD:	
REGISTERED DOMAIN:	
SAVE AND EXIT	

For Dynamic IP, either XDSL or Cable. In XDSL environment, the input for XDSL user ID/

XDSL password is required. In cable environment, Mac address is required to be filled out irrespective of ID and password.

DDNS Server is needed when clients connects the DVR, which is on Dynamic IP, since clients doesn't know of IP of system DVR. (Please register your ID & domain at www.dyndns.org, in which you can use DDNS server free of charge). (See Appendix 4)

Event Notification

EVENT NOTIFICATION ▶ E-MAIL REGISTRATION E-MAIL REPORT NOTIFICATION OUT SAVE AND EXIT
E-MAIL REGISTRATION ▶ USER1 USER2 USER3 SENDER MAIL ID SENDER DOMAIN SEND TEST MAIL SAVE AND EXIT

At E-Mail registration menu, sent up the e-mail addresses to receive several "Event Notification".

To register a e-mail address, 1) input the address 2) push "Save and Exit" 3) "Send test mail".

NOTE:

1. Sender mail ID & domain should be input. If not, e-mail doesn't work. If you input Quantum4 as mail ID & Norbain.co.uk as domain, sender's information will be "Quantum4@norbain.co.uk".
I.e. e-mail will come from "Quantum4@norbain.co.uk"

2. IP & Gateway in the system should be set up first.

E-MAIL Report is available from Daily/ Weekly/ Immediately. Daily report will be done 00(H):00(M) "Midnight" each day and weekly report will be done 00(H):00(M) "Midnight" on Sunday.

Notification Out

NOTIFICATION OUT

☐ E-MAIL
☐ BEEP
☐ ALARM-OUT

When event happens, each output is operated as per setup value. Events such as “Video Loss/ Alarm/ Motion/Power Loss” will be sent to E-Mail address or Beep or Alarm according to setup value.

4. Search

SEARCH

☐ DATE/TIME SEARCH
☐ CALENDAR SEARCH
☐ BACKUP
☐ LOG

Date / Time Search

If you select date/time search, the following will be shown.

DATE/TIME SEARCH

☐ EVENT : ALL
HDD : INTERNAL
DATE : 11-12-2004 13:10:50
PLAY

the (▲),(▼) buttons for selecting the clauses. When you select the specific time/date, and then select “Play”, which execute the playback.

Calendar Search

Following screen shows when “Calendar search” is selected.

CALENDAR SEARCH

☐ YEAR :2005
MONTH : 12

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	[3]	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

This shows where the recorded data is located at sight. Using “→, ←” buttons, are available to move to specific time/date. To enter sub-menu (Time), please use “SEL” button. Day (11, eleven) will be changed ‘up and down (☐☐)’ key.

Buttons “Search” will make a following display.

SEARCH RESULT

DATE 11-12-2004

HOUR 0 4 8 12 16 20

▲

CH1	
CH2	
CH3	
CH4	

The hour, which has data, will be shown in white bar, the hour, which you want to play, is selected with “SEL” button, then the following sub-menu will be shown.

SEARCH RESULT

DATE/HOUR 11-12-204/07

MIN 0 12 24 36 48

▲

CH1 ████████████████████

CH2 ████████████████████

CH3 ████████████████████

CH4 ████████████████████

The area, which has data, will be shown in white and using “SEL”, user can start the playback.

Back Up

1. INTERNAL

BACKUP

☐ BACKUPDEVICE: CD/DVD-R

DEVICE FORMAT

FILE FORMAT: EXCLUSIVE/AVI

FROM: 12-07-2004 12:46:30

TO :12-07-2004 12:47:30

CHANNEL : 1

CALCULATING BACKUP SIZE

TRANSFER

FREE/TOTAL SPACE 49M/245M

REQUIRED SPACE 60M:

Backup Device

Internal CD-R or DVD-R is available.

> Note:

1. Manufacturer guarantee
 - 1) CD-R drive: LG GCE 8527B(CD-R Disk: Imation or Melody brand, 52x Max)
 - 2) DVD-R drive: LG GSA-4167B (DVD-R disk: Imation or Melody brand, 8x Max)
2. When DVR system try to read disk or drive, “READING OPTICAL MEDIA” message will be shown and no key buttons works.

Device Format

Format for CD/DVD-R is not needed. When use CD/DVD-RW, format should be done first.

File Format

Exclusive or AVI file is available. AVI file is played with window media player (Codec required) and exclusive file will be played with our own player. Player is downloaded automatically together with video data.

From/ To

You can set up the time, which is required to be backed up to the internal CD/DVD-R Drive.

Channel

When you select exclusive, all channels can be downloaded at the same time. But, if you select AVI only one channel can be selected.


Transfer

Downloading the backup data to internal disk. Percentage during downloading will be shown.

> Note:

Network should be disconnected during downloading to internal DVD/CD-R disk. If network is connected, connection will be terminated during "making backup file"

2. EXTERNAL

When a Memory stick is connected to the USB port, the icon  will be shown at the bottom of Monitor. Also, the following menu will be shown.

BACKUP	
<input type="checkbox"/> BACKUP DEVICE: CD WR /FLASH	
DEVICE FORMAT	
FILE FORMAT: EXCLUSIVE/AVI	
FROM: 12-07-2004 12:46:30	
TO :12-07-2004 12:47:30	
CHANNEL : 1	
CALCULATING BACKUP SIZE	
TRANSFER	
FREE/TOTAL SPACE	49M/245M
REQUIRED SPACE	60M:

Backup Device

USB memory stick (thumbs drive) or internal CD RW is available.

Device Format

To back up the data, please delete existing files on the stick first.

File Format

Exclusive or AVI file is available. AVI file is played with window media player (codec required) and exclusive file will be played with our own player. Player is downloaded automatically together with video data.

From/ To

You can set up the time, which is required to be backed up to the memory stick.

Channel

When you select exclusive, all channels can be downloaded at the same time. But, if you select AVI only one channel can be selected.

Transfer

Downloading the backup data to stick. Percentage during downloading will be shown.

*** USB compatibility has been tested successfully for these recommended USB devices.**

Lexar JumpDrive 128/256MB

SanDisk Mini Cruzer 128MB, SanDisk Cruzer Micro 256MB

DVD/RW Plextor PX-716UFL

CD/RW Freecom Classic CD-RW 52x24x52

Lite-On CD/RW (LTR-52327SX)

Western Digital Essential 80GB USB2.0 7200RPM (Manu codeWDXUL800BBNU) they do this in various HDD sizes unfortunately we have not tested them all.

NOTE

For system stability, we highly recommend that the recording is turned off during downloading the data to USB device.

Procedure for saving data onto a USB device.

1. Stop recording. Press “Record” enter Password (**00000000**) Default
2. Insert USB device. Wait until USB symbol appears on screen
3. Press “Search” button
4. Go to “Backup” Press “Enter”
5. Select “File Format” Press “Enter” change to “Exclusive”
6. Select Start & Stop times (Press “Enter” to change, use camera buttons) Press “enter”
7. Enter channel numbers (cameras 1,2,3 or 4) Select “Save & Exit”
8. Select “Calculate Backup size”
9. Select “Transfer” after file download
10. Exit “Search” mode
11. Press “Record” button

“Exclusive” allows all cameras to be selected and recorded.

“AVI” allows single camera only to be selected and recorded.

PC Playback

1. Insert USB device
2. Go to “My Computer”
3. Double Click USB drive letter
4. Folders & Files on device: *Download, BK_Play, Index, Kerberos, KW Client*
5. Double Click “*BK_Play*”
6. Player opens, click “play” button

5. CLIENT PROGRAM

5-1. Network Connection

Minimum PC specification (4, 8/16CH)

CPU: 4CH- Pentium III 750MHz over, 8/16CH- Pentium □ 1.7GHz over.

Graphic Memory: 4CH- 32M over, 8/16CH – 64M over.

IP Insertion

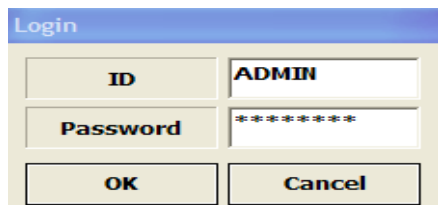
Connection will be done by just writing DVR IP address on the Internet Explorer window. If domain is kept to reach DVR by DDNS server, it is allowed to write domain name directly.

Downloading ActiveX Control

When DVR connects network, the window to download active X control will be displayed then login Box will be displayed.

If downloading does not begin “Active X control” may not be enabled. (See Appendix 3)

Log In

A screenshot of the 'Login' window. It has a blue title bar with the word 'Login'. Below the title bar, there are two input fields: 'ID' and 'Password'. The 'ID' field contains the text 'ADMIN' and the 'Password' field contains a series of asterisks '*****'. Below these fields are two buttons: 'OK' and 'Cancel'.

When Log- In window appears, input the ID & Password.

Then, click “OK”, which starts the live monitoring. If ID & PW is input wrong, the Login box appears repeatedly.

If it login fails or clicking “Cancel”, the programs ends.

Live Monitoring

Client program is optimized on the resolution, 1024 x 768.

Channel Button



This shows how many channels are activating on the live monitoring or playback. When selecting the relevant channel, it will show a full, single image only and the camera button will go green.



Channel Division



Multi-channel division will be done during the monitoring or playback. As seen in picture, 1,4,8,9,16 division is supported.



Termination of Live monitoring



Live monitoring will be terminated when user pushes “Live Off” button.



Live monitoring will be re-started when user pushes “Live On” button.

System & Local



System means the DVR.



Local means Remote PC as client

Recording & Playback



Step backward / Backward / Play / Pause / Recording /

Stop / Step forward in left order.

One more click during playback makes speed

double. Pause is temporary stop. If user wants to play the

video forward during reverse, push the stop key and

then push fast forward button.

System & Local recording

1) System recording



To start the recording on the DVR via client PC, press the recording button, when the system icon is on green. Shadow bottom is shown as seen in blue circle. Please check system is on the recording mode.

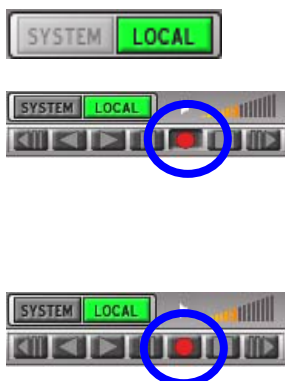
* Admin only can control 'recording on/off' on the system via network.



NOTE :

To off 'recording', push the red recording button again. Then, shadow bottom will disappears and system will ask for the password. To stop recording of system, please input password. And, check if the system is out of recording mode.

2) Local recording



To save the live video onto client PC HDD, press the recording button when the local icon is on green.

Shadow bottom is shown as seen in blue circle. Then, recording data is saving on the client HDD.

* Both admin and user can do local recording.

To off the recording, press recording button again. Then, shadow bottom will disappears.

Local playback



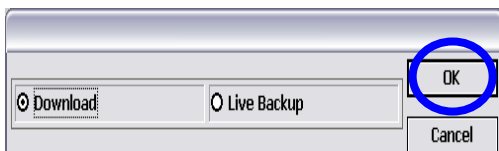
When “Local” button is activated (LOCAL), it will operate.



When you push the Play (▶),

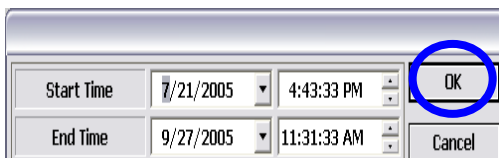
the window left is shown.

On clicking the “OK” button then set the start & end time. Please check either ‘Download’ or ‘Live Backup’.

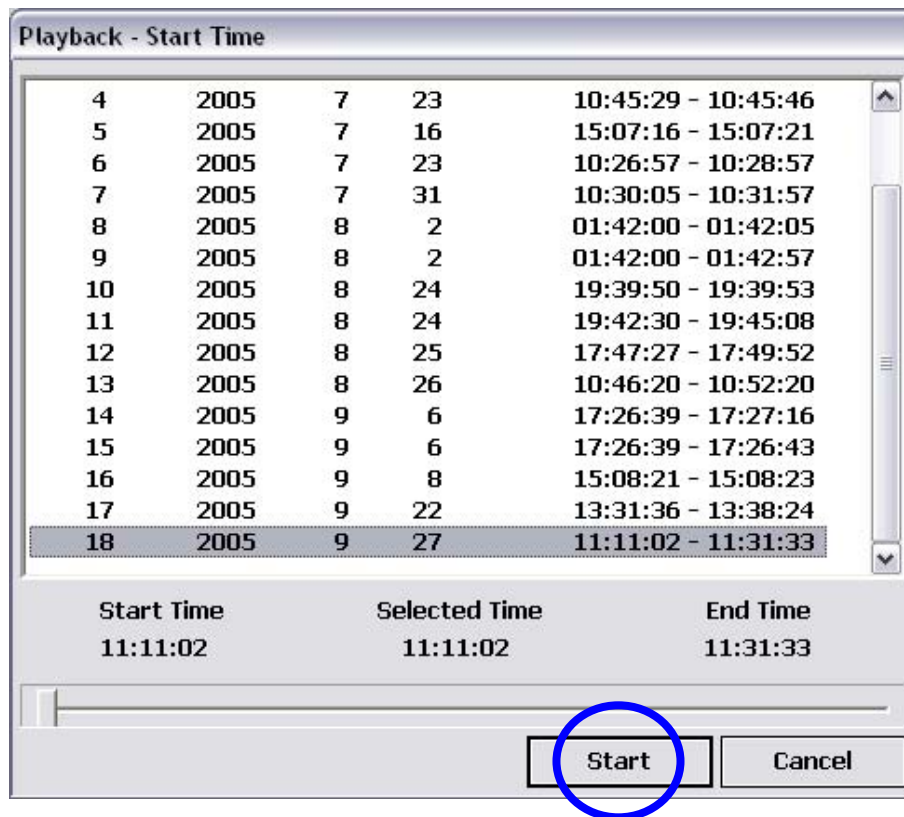


Download is transmitting recorded data from system HDD to Client PC .

Live Backup is saving the live image on the client PC.



On clicking the “OK” button, the available list will be displayed.




Select the required time and push 'start' button.



Then, local playback will be done as above.

Remote playback



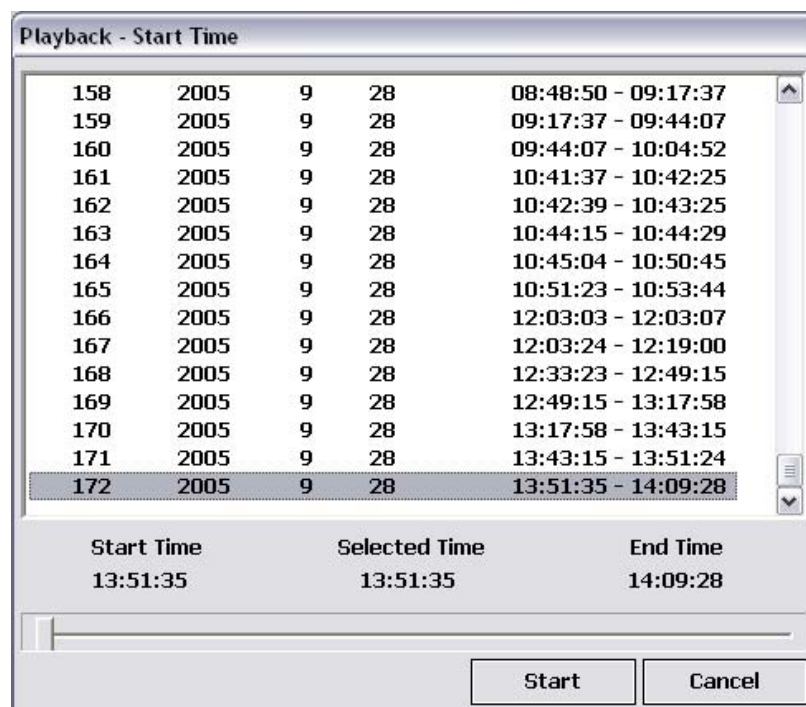
This works when system button is in () green.



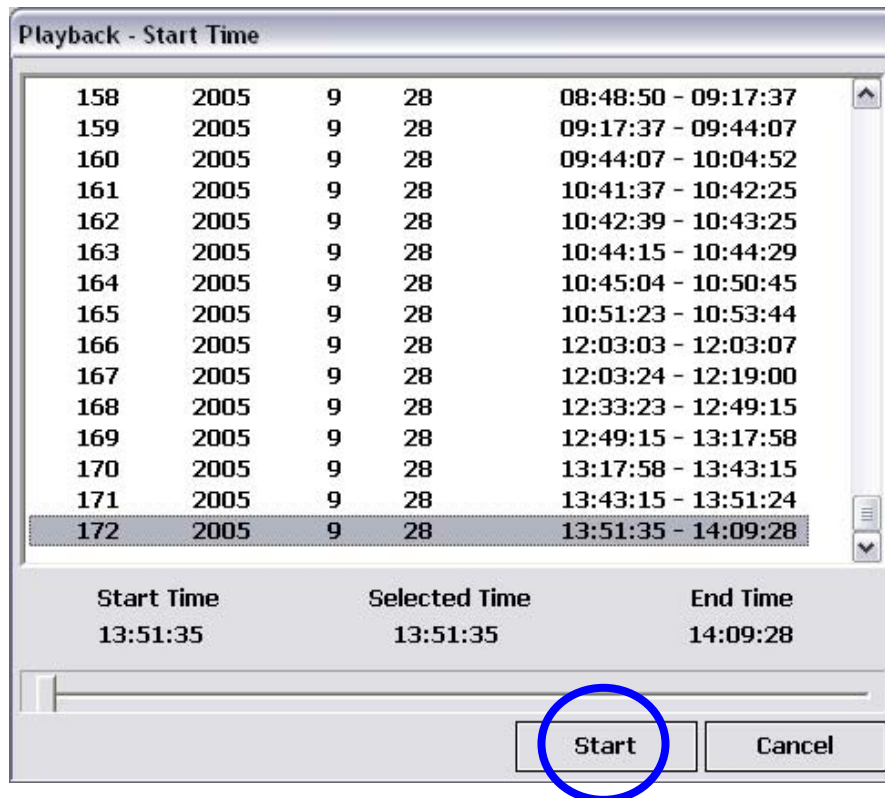
When you push the Play button(▶),



the window left is shown. After input “start” and “end” time, push “OK” button.



Then, list will be shown above.



Select the required time and push 'start' button.



Then, remote playback will be done as above.

Setup



Remote setup

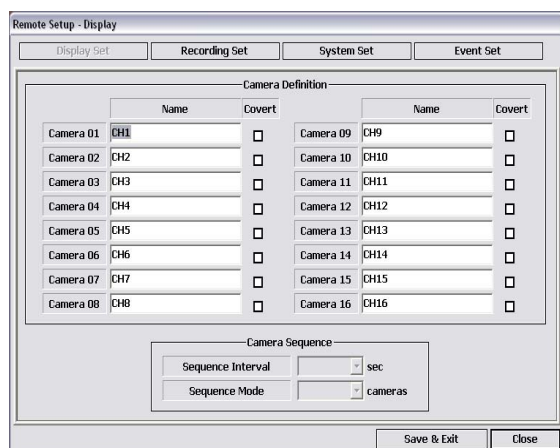


Setup menu is composed of 1) Remote Setup
2) Local Setup 3) Firmware Upgrade menu.

Note:

When the main system is entered “menu OSD”, remote setup doesn’t work. “OSD updating failure” message will be displayed. This is only available when logged on as Administrator

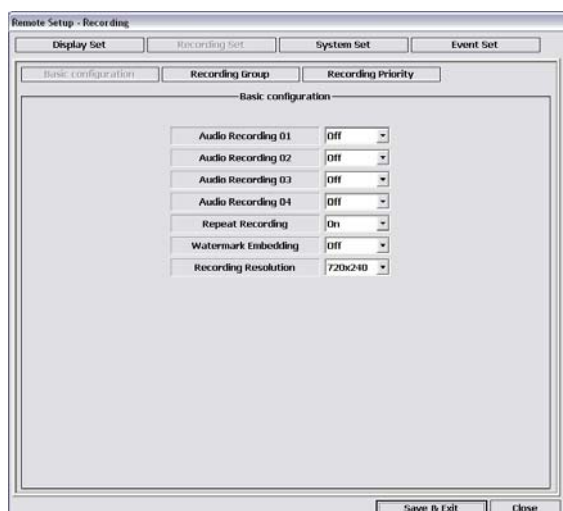
When you select ‘Remote Setup’ menu,



User enters ‘Display Set’ menu, in which user can input ‘Camera name’ as per setting up at the DVR. To save changed values, you should press button “Save & Exit” .

When user selects ‘Recording Set’ menu, this has 3 sub-menu’s.

- 1) Basic Configuration. : you can configure (1) Audio Recording (2) Repeat Recording (3) Watermark Embedding (4) Recording Resolution as per setting up at the DVR.
- 2) Recording Group : this has 4 sub-menu , (1) Normal (2) Alarm (3) Motion (4) Schedule as per setting up at the DVR
- 3) Recording Priority : User can select the recording priority.



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Remote Setup - System

Display Set Recording Set **System Set** Event Set

User Account

User 1	ID		Add
	Password		Set
	Confirm		Del

User 2	ID		Add
	Password		Set
	Confirm		Del

User 3	ID		Add
	Password		Set
	Confirm		Del

User 4	ID		Add
	Password		Set
	Confirm		Del

User 5	ID		Add
	Password		Set
	Confirm		Del

P/T/Z Camera Model

DVR CH No.

Manufacture

P/T/Z Model

ID

Sensor In

Sensor 1

Sensor 2

Sensor 3

Sensor 4

Alarm Out

Buzzer

Alarm 1

Alarm 2

Alarm 3

Alarm 4

Schedule Backup

Stored

9/28/2005

9/28/2005

Condition

☐ Alarm

☐ Motion

Start Time

9/28/2005

3:14:52 PM

End Time

9/28/2005

3:14:52 PM

Target

Table

SET

Camera

<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 4
<input type="checkbox"/> 5	<input type="checkbox"/> 6
<input type="checkbox"/> 7	<input type="checkbox"/> 8
<input type="checkbox"/> 9	<input type="checkbox"/> 10
<input type="checkbox"/> 11	<input type="checkbox"/> 12
<input type="checkbox"/> 13	<input type="checkbox"/> 14
<input type="checkbox"/> 15	<input type="checkbox"/> 16

Save & Exit Close

From 'System Set' menu, PTZ Camera & Schedule Backup menu are unavailable for 4 8,16channel (Future development). Others are the same as local system configuration.

Remote Setup - Event

Display Set Recording Set System Set **Event Set**

E-mail Registration

User

User

E-mail Report

Monday Tuesday

Wednesday Thursday

Friday Saturday

Sunday Holiday

Time 3:17:39 PM

Immediately

Sender Information

ID DVR

Domain DVR

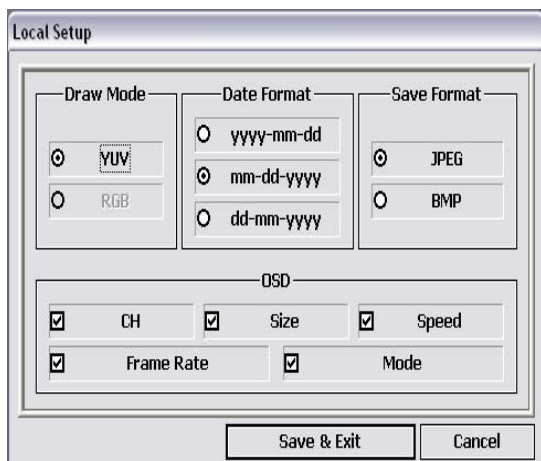
Notification Out

	Beep	E-mail	Alarm
Alarm	No <input type="text"/>	No <input type="text"/>	No <input type="text"/>
Motion	No <input type="text"/>	No <input type="text"/>	No <input type="text"/>
Parameter	<input type="text"/>	<input type="text"/>	<input type="text"/>
Video Loss	No <input type="text"/>	No <input type="text"/>	No <input type="text"/>
Power Loss	No <input type="text"/>	No <input type="text"/>	No <input type="text"/>
Operation	<input type="text"/>	<input type="text"/>	<input type="text"/>

Save & Exit Close

From 'Event Set' menu this has 1) E-Mail registration 2) E-Mail report 3) Notification out. The menu is same as local menu tree.

Local setup



The detail left will be shown when you click the 'Local Setup' menu.

- 1) Draw Mode: User can select between YUV format using Direct X or RGB.
- 2) Date Format: Select the time/ date format .
- 3) Save Format: Select the saving file format from JPEG or BMP.
- 4) OSD:
 - (1) CH1, CH2, ...
 - (2) Size : Actual video size.
NTSC - 720x240, 360x240,
PAL – 720x288, 360x288
 - (3) Speed: Playback Speed
 - (4) Rate : Frame number per sec.
 - (5) Mode: Live(Live monitoring) /
R-Play(Remote play) /
L-Play(Local play)

Firmware Upgrade



When user selects 'Firmware Upgrade' menu, if higher version exists in C:\KWClient\Upgrade folder, 'New Program Found!' message will be shown

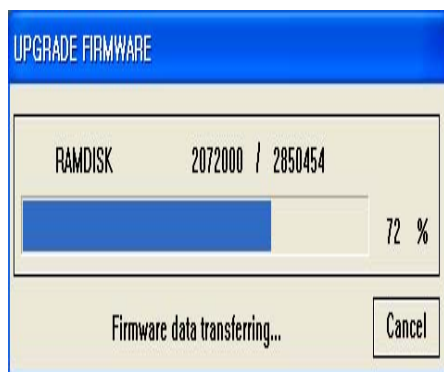
If version is not higher in C:\KWClient\Upgrade folder,

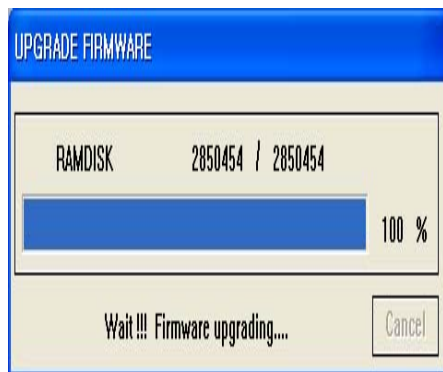
'New Program Not Found' message will be displayed.



When 'New Program found' message is displayed, please push 'Upgrade' button. When user press's 'Cancel' button, 'Firmware Upgrade Fail' message is shown.

Note : For system stability, please "stop" the system from Recording.





When firmware Upgrade is done successfully, 'Firmware Upgrade success!' message will be displayed.



The local system should be re-booted.

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Download, Image Save, Two-Way audio, Stop, Connect

Download



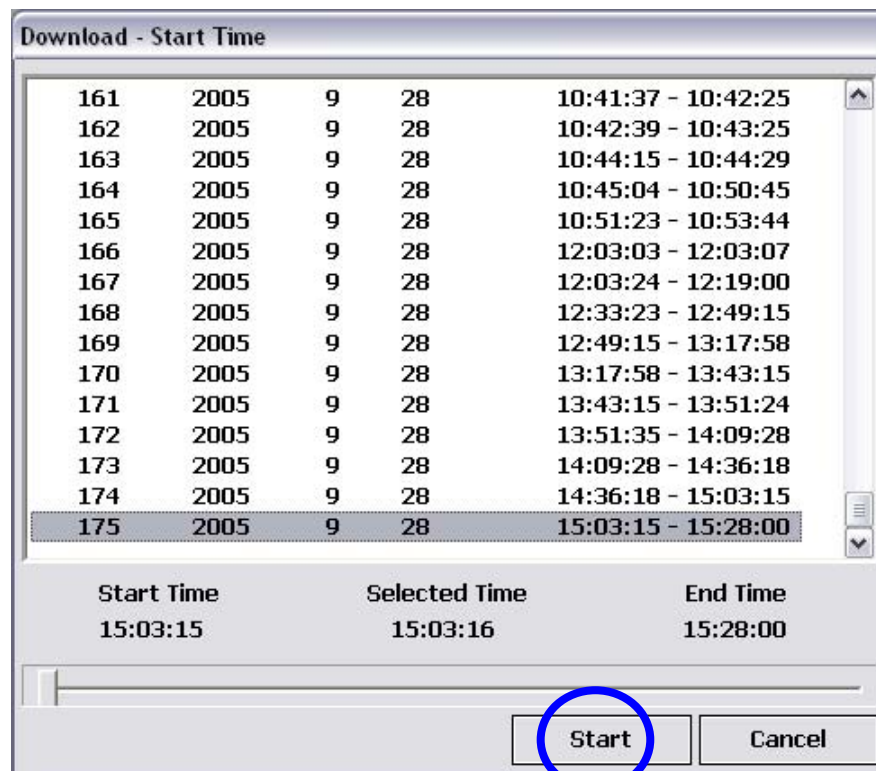
This is for transmitting the recorded data on HDD to client PC.



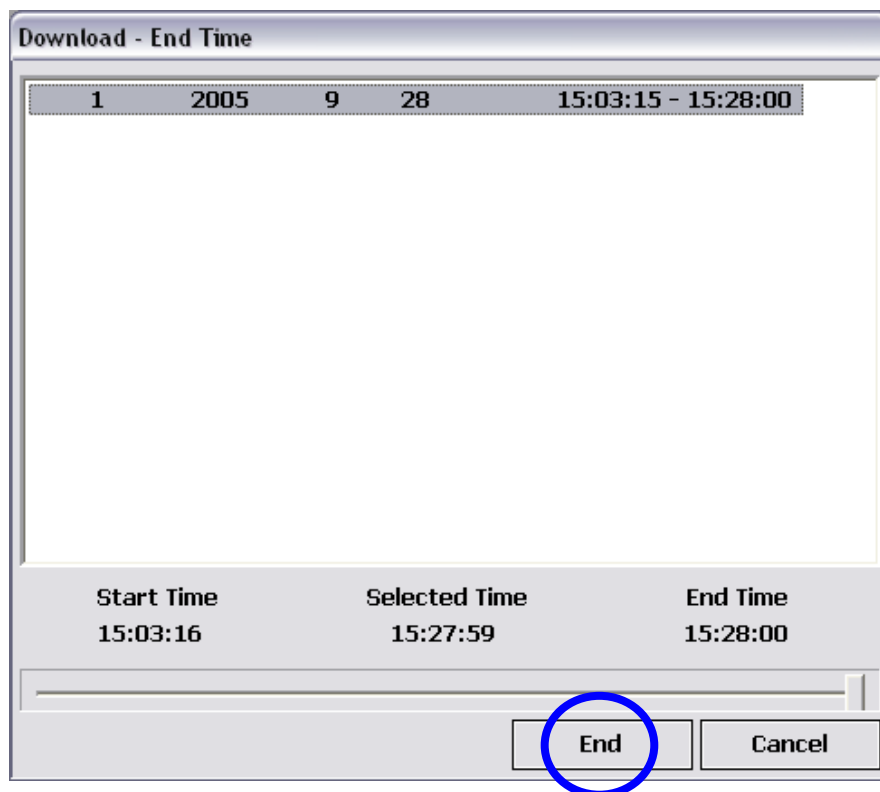
When 'download' button is pushed,



User select 'Start time' and 'End time' to download and push 'OK' button.

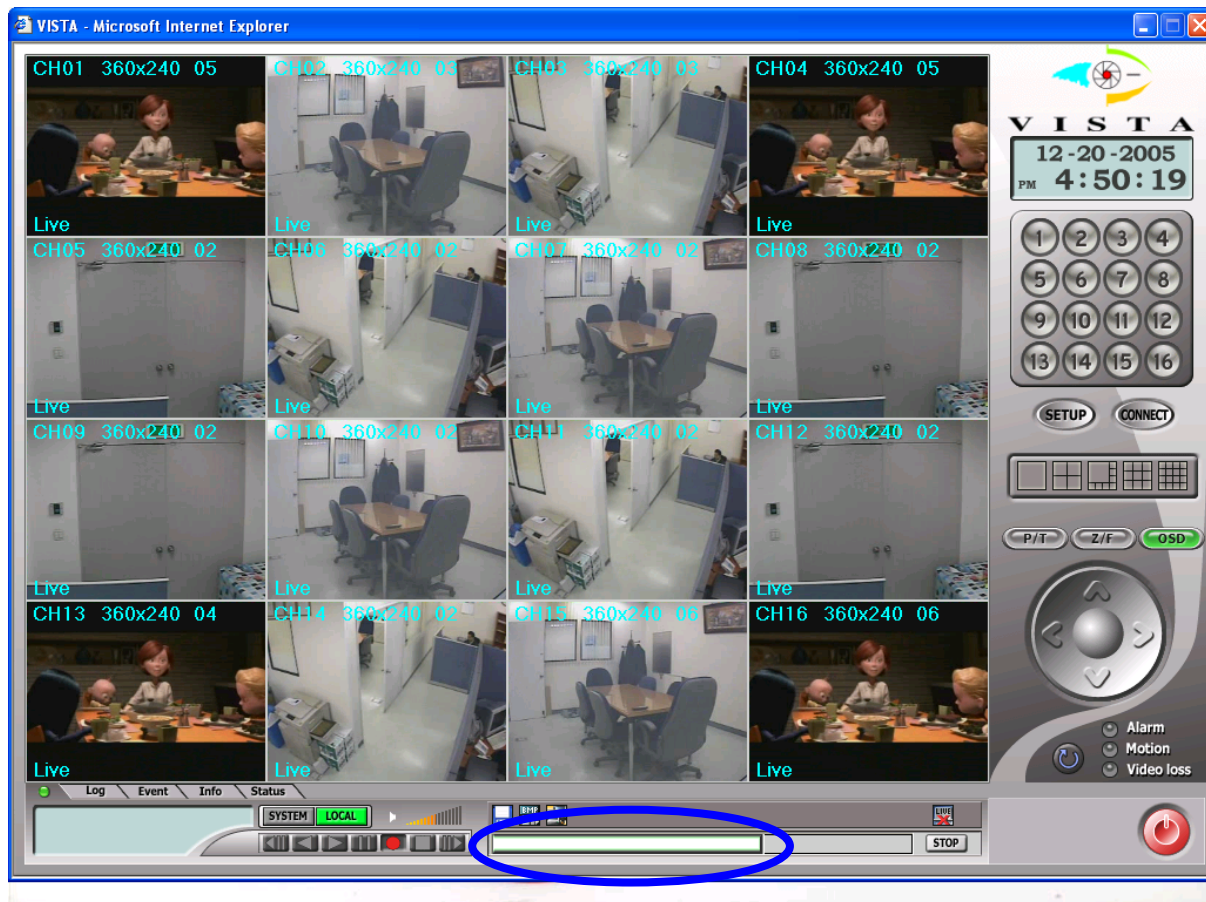


Select the number (time) from list for 'Start Time'.



Select the number (time) from list for 'End Time'.

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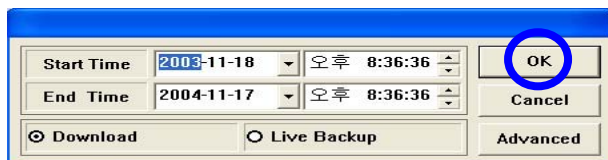


Processing bar will be shown above please wait till downloading is finished.



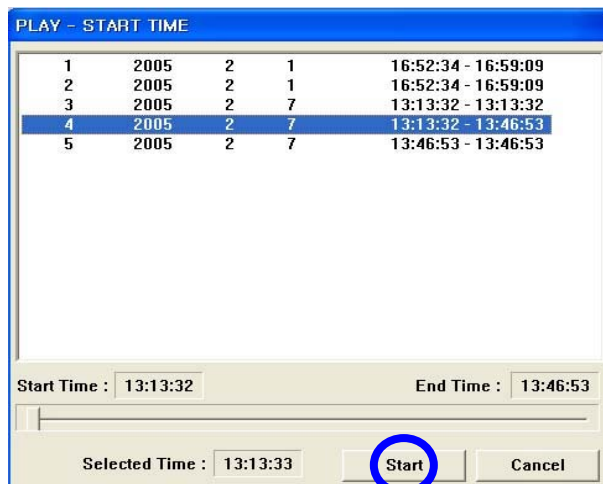
When downloading is finished, push 'Local' button, which turns to green (**LOCAL**) colour.

Then, push play(▶) button.



Select 'Start Time' & 'End Time' and check (☐) 'Download'.

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Then, the download list left will be shown.

Select the number (time) which you want to play.



Local Play (from downloaded files) will be done like above.

Image Save



This is for saving format. Either JPEG or BMP. The file will be stored C:\KWClient\Save.

Stop



This is for stopping Downloading.

Connect



Re-connecting when access has failed

Pan/Tile, Zoom/Focus, OSD

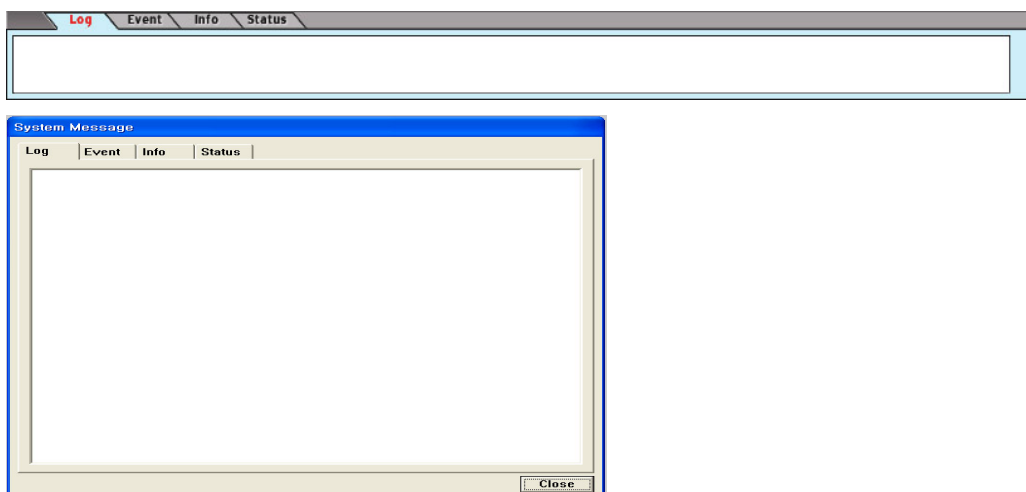


- 1) Pan / Tilt
Using arrow key, controls the Pan/Tilt (Not supported at present)
- 2) Zoom / Focus
Using arrow key, controls Zoom, Focus (Not supported at present)
- 3) OSD
Whether OSD is displayed during live / playback

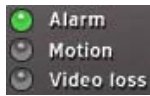
Log / Event / Info / Status



The relevant information like Log, Event, Info, Status will be shown as below.



Event Clear



The relevant OSD turns to green colour when DVR has an event like Alarm, Motion, Video-loss.



Reset for event button (event clear)

Timer



This shows the client PC timer when monitoring is working.

On the other hand, it shows the time the recording data belongs to during playback. The timer format is according to date format specified on the “local Setup”.

Exit



Q & A

1.

Q : The message “ Can’t display the page” is shown and failed to connect to DVR, when IP address or domain name is entered on the Internet explorer window.

A : 1) DVR is not working or 2) a problem on the network connection. Please check the DVR is working properly also check the connection both DVR and PC.

2.

Q : Can’t download the ActiveX Control.

A : This happens if “Windows XP Service Pack 2” is installed on the PC. Either remove “service pack 2” on the PC Menu, “program add & removal” on the control panel. Or, refer to Appendix 3 (See page 65)

3.

Q : The client program is terminated with the message “Unsupported OS version!”

A : The client program only works with Windows XP or 2000. Doesn’t support Win.98, 98SE, ME.

4.

Q : Login box keeps appearing.

A : It appears repeatedly when Client ID & Password is input wrong. Please check the exact ID & Password set on the DVR.

5

Q : Can’t change “Draw mode” on the menu, Local setup.

A : This is not possible during live monitoring and playback. User must stop the live monitoring or playback. Then, you can change the “Draw mode”.

6.

Q : Where is the saved file located?

A : This is stored “C:\KWClient\Saved”. The file can be played with Image viewer.

7.

Q : There is no response after pushing the OSD button.

A : OSD is showing several statuses during playback. If the detail items are not specified on the "Local Setup", there is no response even if pushing the OSD button during playback. Try it after selecting required OSD menu on the Local Set-up.

8.

Q : I can't see the back up file made from a DVR on the monitor.

A : Please check whether you have a Codec S/W or not. If you don't have, you have to install it in your PC.

9.

Q : When I downloaded the image as AVI on to my memory stick, it plays back ok, but no date & time

A : Date & time is not supported when using AVI mode (window media player Codec required) this is only supported when back up is carried out using Exclusive mode.

10.

Q : I can see the display web layout on the monitor but no video pictures.

A1 : Please check your PC specification needs to be Minimum Pentium III 750MHz and Graphic Memory 32M.

A2 : Please, go to control panel -> Internet options -> security -> select Customer Level.

Go to ActiveX controls and plug-ins -> Automatic prompting for ActiveX Controls => Disable"

Go to Download unsigned ActiveX controls => Prompt"

Go to Miscellaneous -> Allow script-initiated windows without size or position constraints" => Enable" (see Appendix 3)

Appendix 1.

1. HDD INSTALLATION

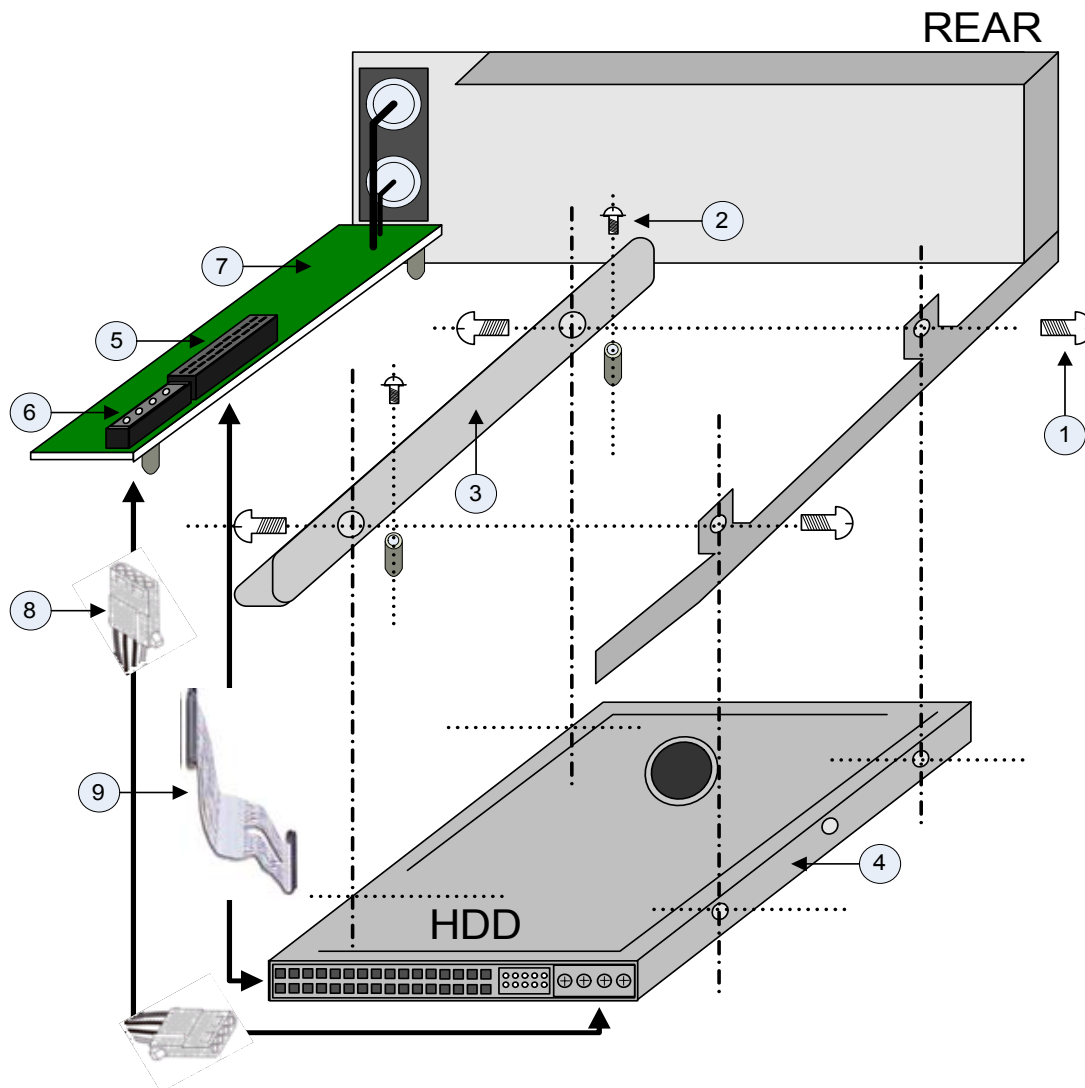
1) Components

The attached components are as follows,

- ☐ 0.8" Round Screw : 4
- ☐ 0.6" Round Screw : 2
- ☐ Left Complementary Device : 1
- ☐ 40 Pin Connector Cable : 1
- ☐ HDD Power Connector Cable : 1

2) Inner Configuration

The inner configuration of DVR is as follows,



- ☐ 0.8“ Round Screw
- ☐ 0.6“ Round Screw
- ☐ Left Complementary Device for fixing the HDD
- ☐ HDD
- ☐ 40 Pin Connector
- ☐ HDD Power Connector
- ☐ KERBEROS Main Board
- ☐ HDD Power Cable
- ☐ HDD Connector Cable

2. HDD Install Processing

- ☐ Assemble the HDD with the Left Complementary Device using 0.8“ Round Screw
- ☐ Fix the Left Complementary Device with 0.6“ Round Screw to Main Body
- ☐ Fix the Right Part of HDD with 0.8“ Round Screw to Main Body
- ☐ Assemble the HDD Cable and HDD Power Cable each others

Appendix 2

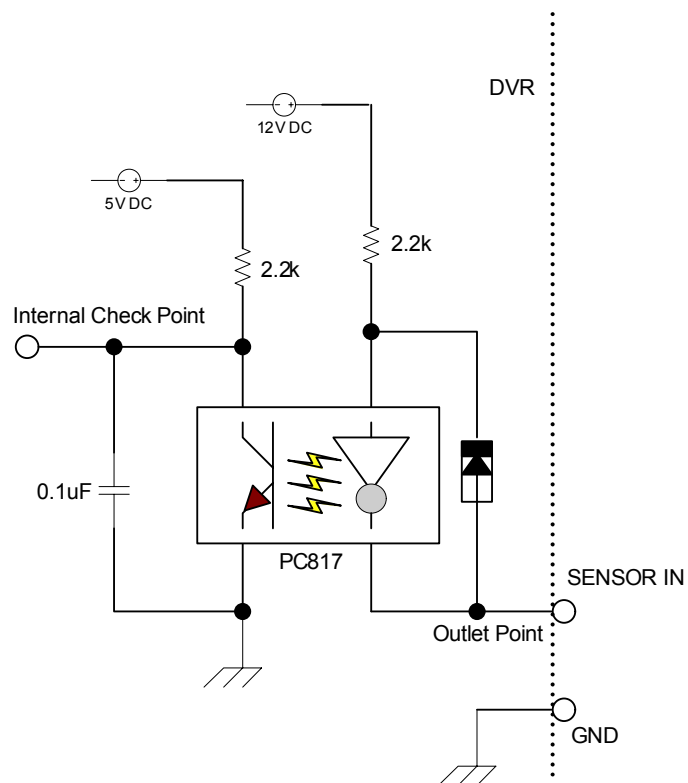
SENSOR INSTALLATION

1. Components

- 1) External Sensor : 1 (You should prepare one set)
- 2) DVR System : 1

2. Inner Circuit for Sensor Input

The inner circuit of Mpeg 4 DVR is as follows,



- PC817 : Photo Coupler
- The Specification of PC817

■ Absolute Maximum Ratings

Parameter		Symbol	Rating	Unit
Input	Forward current	IF	50	mA
	*1Peak forward current	I FM	1	A
	Reverse voltage	V R	6	V
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V CEO	35	V
	Emitter-collector voltage	V ECO	6	V
	Collector current	IC	50	mA
	Collector power dissipation	P C	150	mW
Total power dissipation		P tot	200	mW
*2Isolation voltage		V iso	5 000	V rms
Operating temperature		T opr	-30 to + 100	°C
Storage temperature		T stg	-55 to + 125	°C
*3Soldering temperature		T sol	260	°C

*1 Pulse width≤100μs, Duty ratio : 0.001

*2 40 to 60% RH, AC for 1 minute

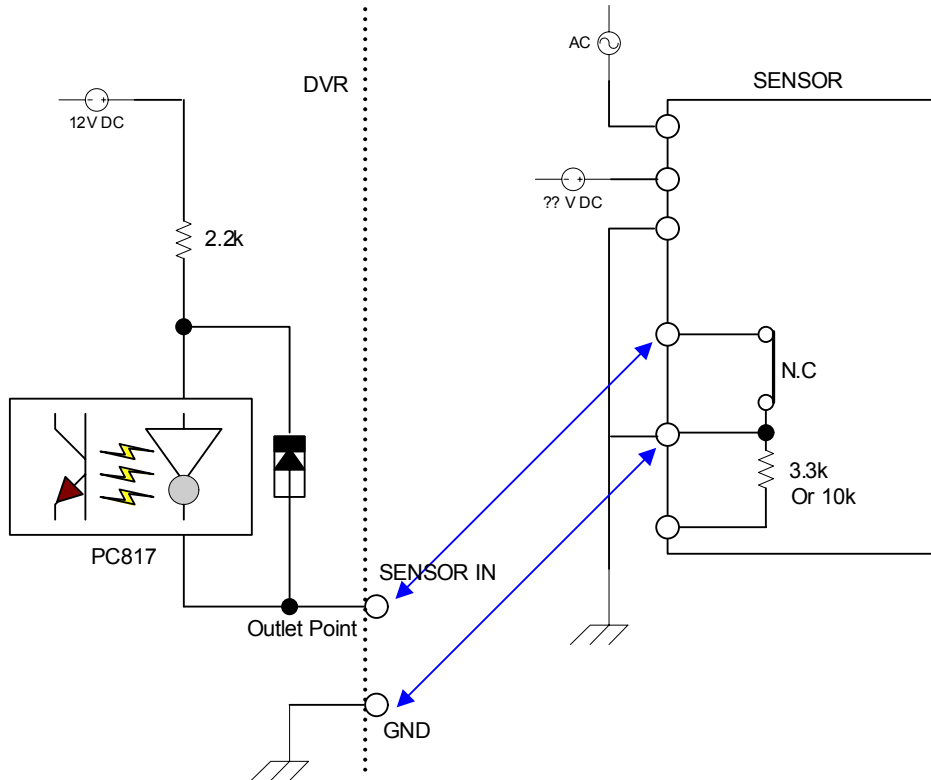
*3 For 10 seconds

■ Electro-optical Characteristics

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V F	IF = 20mA	-	1.2	1.4	V
	Peak forward voltage	V FM	IFM = 0.5A	-	-	3.0	V
	Reverse current	IR	V R =4V	-	-	10	μ A
	Terminal capacitance	Ct	V = 0, f = 1kHz	-	30	250	pF
Output	Collector dark current	ICEO	V CE = 20V	-	-	10 ⁻⁷	A
Transfer characteristics	*4Current transfer ratio	CTR	IF = 5mA, V CE = 5V	50	-	600	%
	Collector-emitter saturation voltage	V CE(sat)	IF = 20mA, I C = 1mA	-	0.1	0.2	V
	Isolation resistance	R ISO	DC500V, 40 to 60% RH	5 x 10 ¹⁰	10 ¹¹	-	Ω
	Floating capacitance	Cf	V = 0, f = 1MHz	-	0.6	1.0	pF
	Cut-off frequency	fc	V CE = 5V, I C = 2mA, R L = 100 Ω, -3dB	-	80	-	kHz
	Response time	Rise time t r	V CE = 2V, I C = 2mA, R L = 100 Ω	-	4	18	μ s
		Fall time t f		-	3	18	μ s

3. SENSOR Install Processing

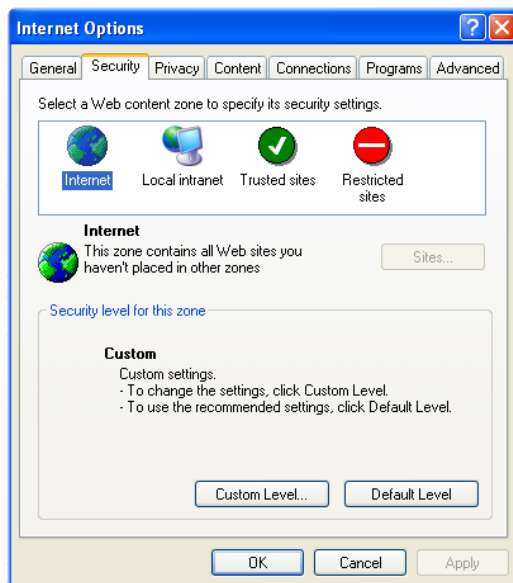
- Please refer the below block diagram.



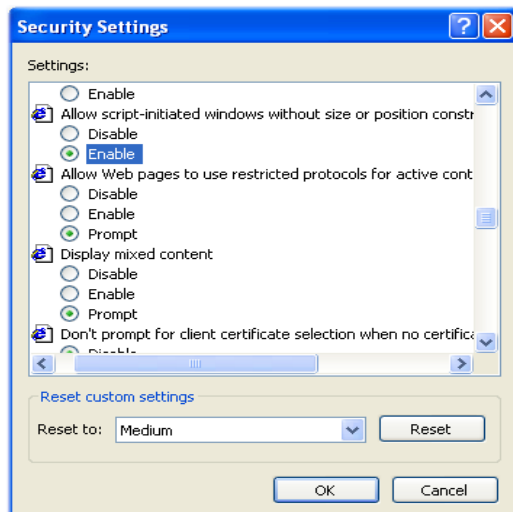
Appendix 3

INSTALLING VISTA WEB CLIENT ON WINDOWS XP SERVICE PACK 2.

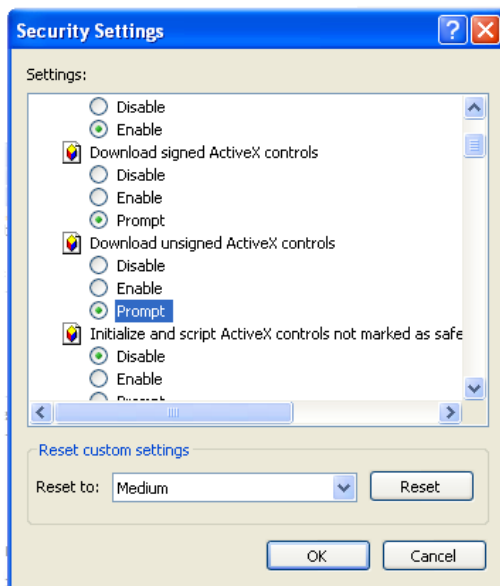
1) Security Setup



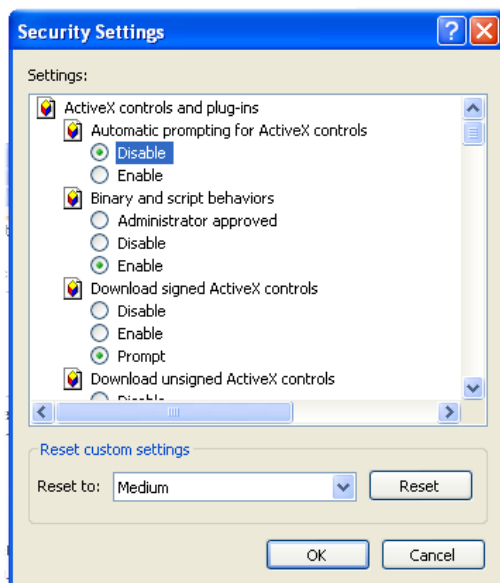
Tools-> Internet Options-> Security
-> Select "Customer Level"



Select " Allow script-initiated windows without
Size or position constraints"-> Enable.

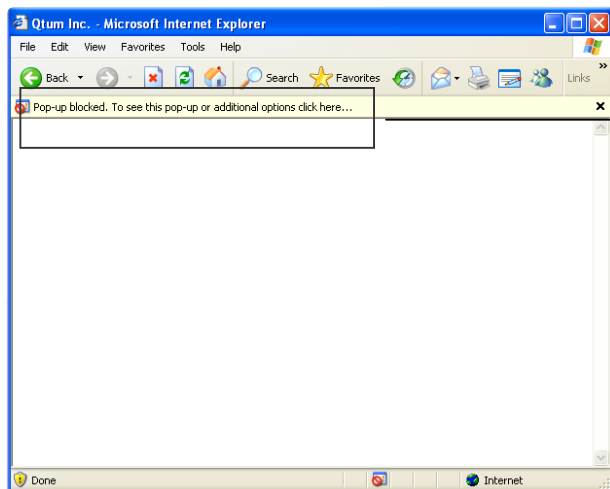


Select “ Download unsigned Active X controls”-> Prompt

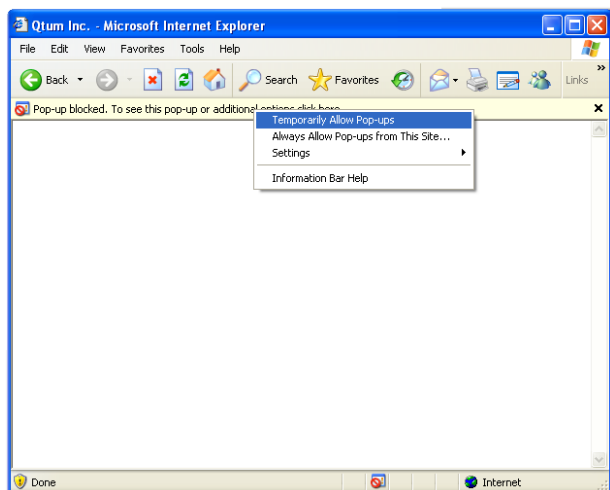


Select “ Automatic Prompting for Active X controls”-> Disable

2) Connection



Click here as described

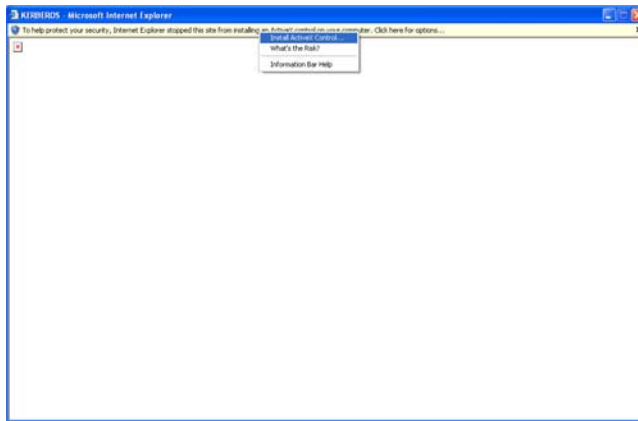


Select "Temporary Allow Pop-ups or Always Allow from this site"

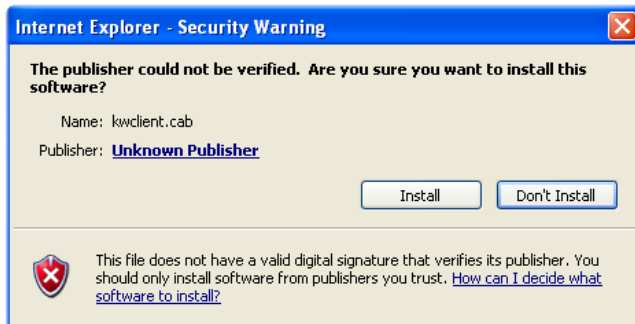


Click "To help protect security, Internet Explorer stopped this site from installing an Active X control on your computer. Click here for options..."

MPEG4-4/8/16Channel - Installation/ Operation Manual



Select “Install Active X Control “

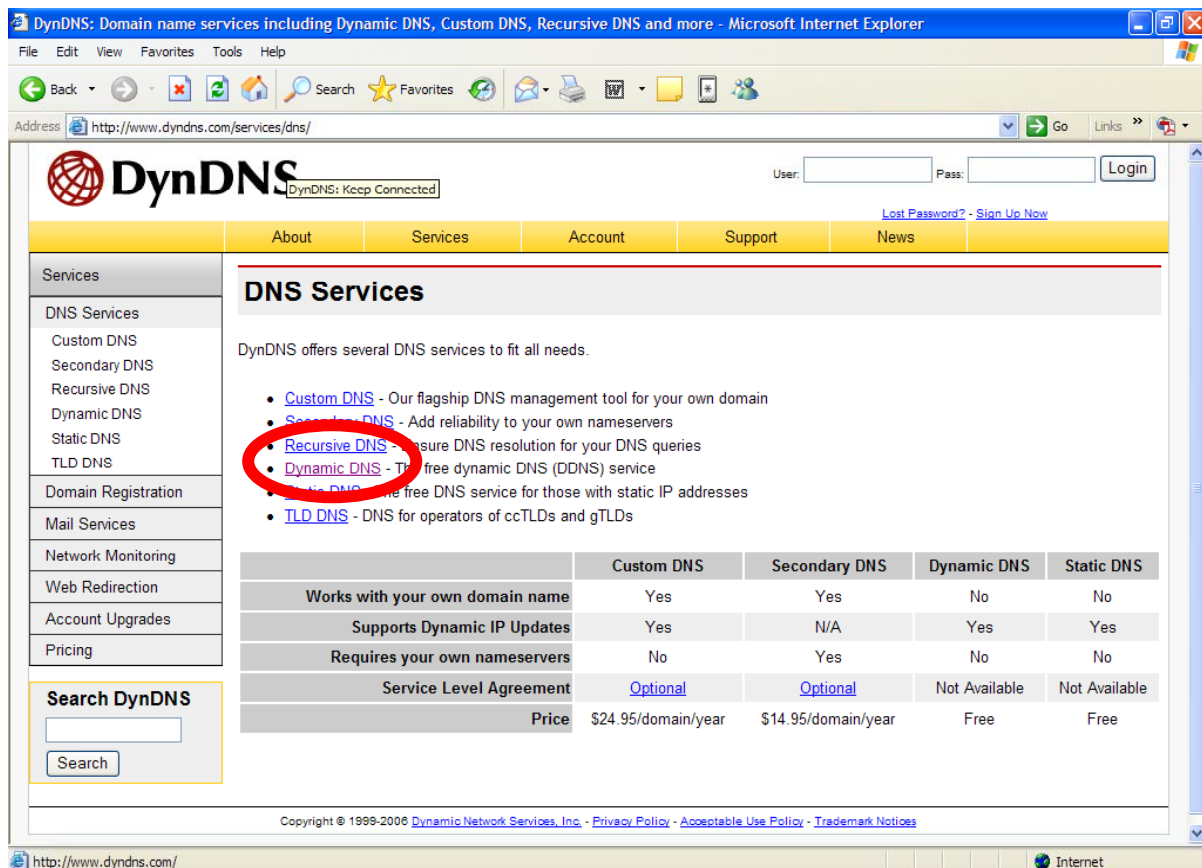


Select “Install” and then ‘Log-In’ box will be shown.

Appendix 4

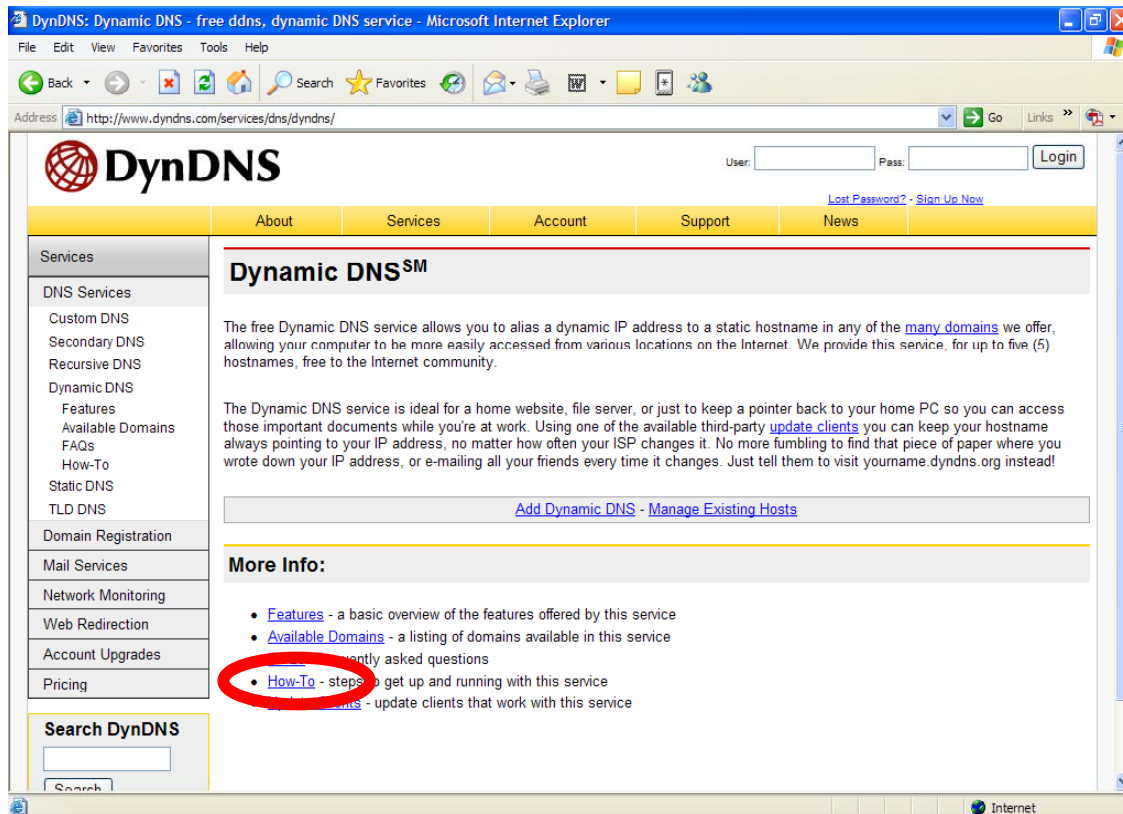
DYNAMIC IP (Supporting DDNS Server)

1. Visit <http://www.dyndns.com/services/dns/> to get the DDNS user ID & PW as well as domain name.

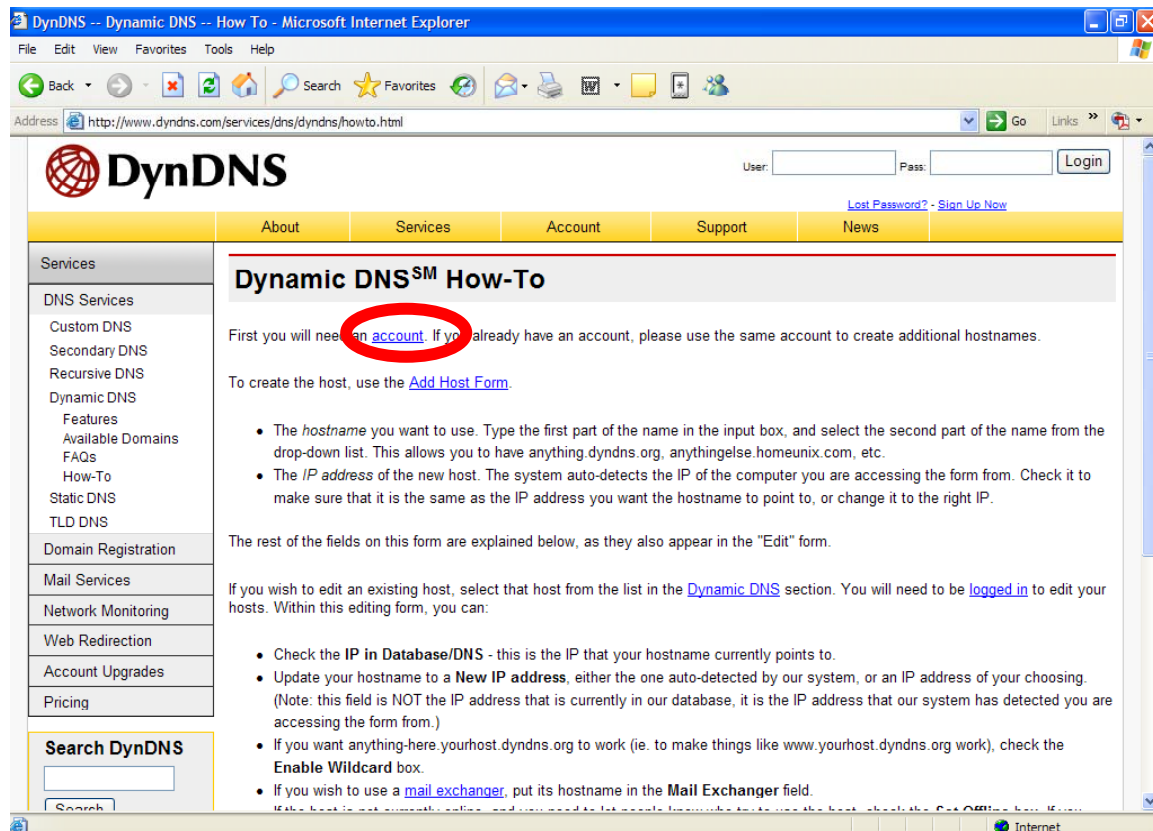


2. Click "Dynamic DNS" menu.

3. Select “How To” menu.



4. Select “account” menu.



5. Mark ☐ “I have read and agree to the Acceptable Use Policy above”
6. Input “Username” & “Password”.
(For exam. Username: example, PW: quantumdvr)

DynDNS.org Current User: **eddydvr** (LogOut)

About Services **Account** Support Developers News

My Account
My Services
Account Settings
Billing

Create Account

Please complete the form below to create your account. You will receive an e-mail containing instructions to activate your account. If you do not follow these directions within 48 hours, you will need to recreate your account.

It is strongly recommended that you visit this page [securely](#). You are not currently visiting this page securely.

Acceptable Use Policy

Policy Last Modified: May 4, 2004

1. ACKNOWLEDGMENT AND ACCEPTANCE OF TERMS OF SERVICE

All services provided by Dynamic Network Services, Inc. ("DynDNS") are provided to you (the "Member") under the Terms and Conditions set forth in this Acceptable Use Policy ("AUP") and any other operating rules and policies set forth by DynDNS. The AUP comprises

I have read and agree to the Acceptable Use Policy above: ☒

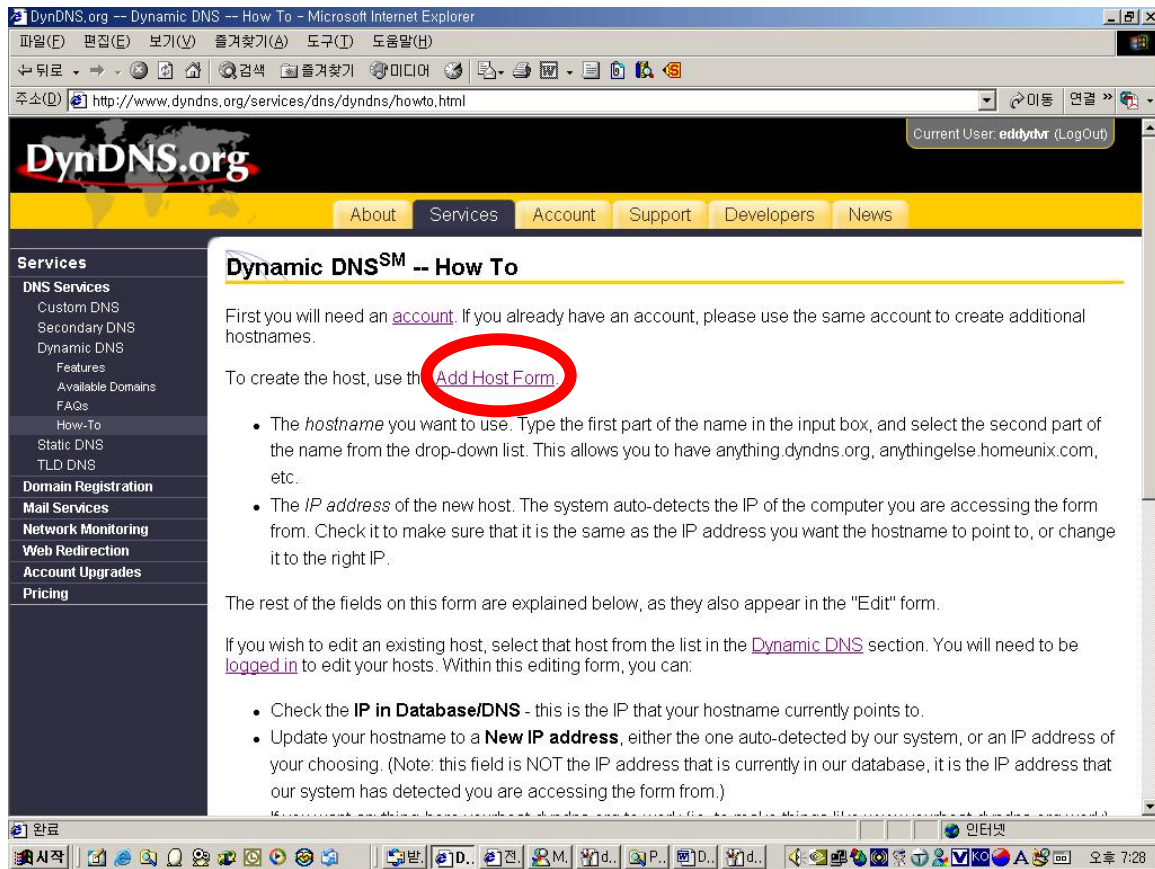
Username

Username

Your username will be used to login to your account and make changes.

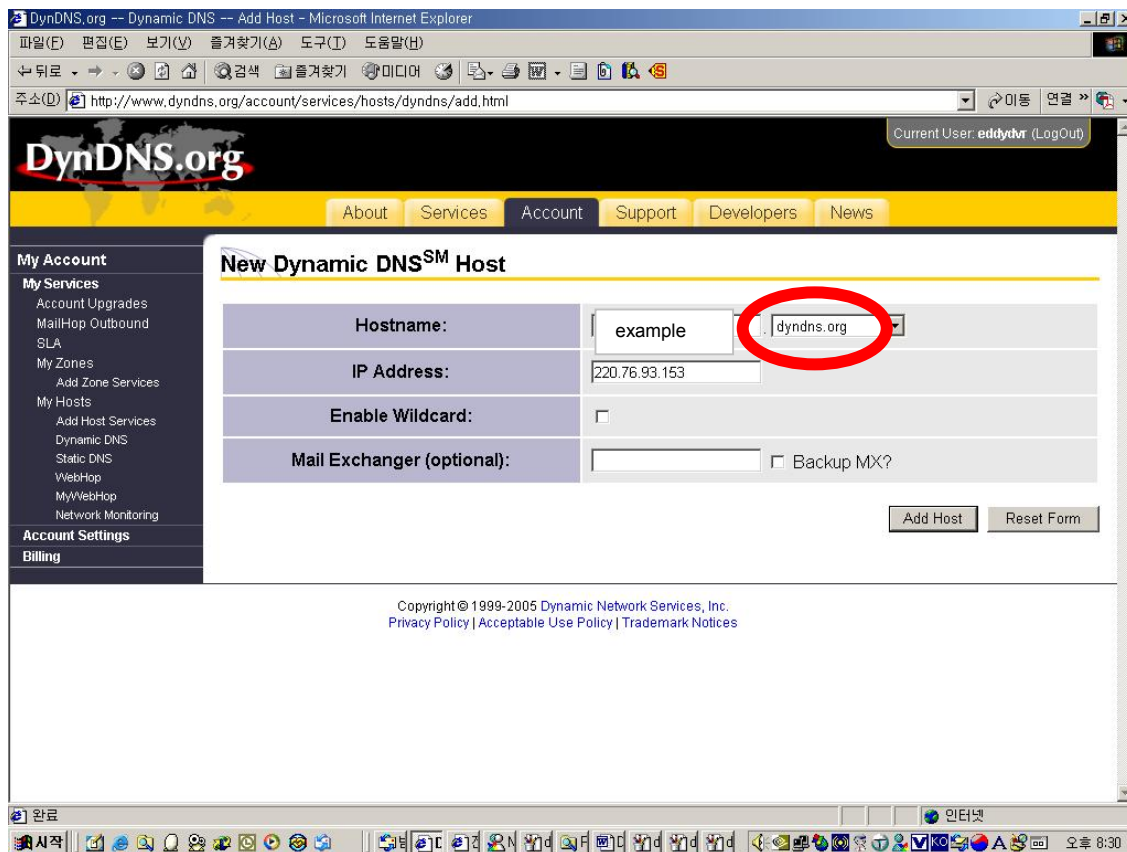
Check account registration is done successfully.

7. Select “Add Host Form” to create the domain name.



8.

- 1) Input “Hostname”. Hostname is the same one as “username” (for exam: example)
- 2) You should select “ dyndns.org” from the drop down menu, which is limited on our system.
- 3) Current dynamic IP will be shown below
- 4) After checking 1)~3), select “Add Host”
- 5) After registering hostname, check the ping status (ping -t example.dyndns.org)



9.

To connect DVR system, the followings-XDSL ID & PW / DDNS ID & PW/ Registered Domain- have to be input on the “Network set” menu.

NETWORK SET

USE DYNAMIC IP: YES
XDSL USER ID :
XDSL PASSWORD :
DDNS USER ID :
DDNS PASSWORD :
REGISTERED DOMAIN:
SAVE AND EXIT

Appendix 5

SETUP FOR DVR PORT/ WEB SERVER PORT USING IP SHARING ROUTER

NETWORK SET

☐USE DYNAMIC IP: NO
IP ADDRESS :000.000.000.000
GATEWAY :000.000.000.000
NETMASK :000.000.000.000
DNS SERVER :000.000.000.00
DVR PORT 2000
WEBSERVER PORT 2001
SAVE AND EXIT

- 1) To use IP sharing Router, “Use Dynamic IP” should be set to “No” first.
 - DVR Port: Port number to connect network client program on remote PC. When it needs to be changed, number which is not overlapped should be input (2001~65535)
 - Web Server Port: Port number to download network client program to remote PC. When it needs to be changed, number which is not overlapped should be input (2001~65535)

2) Setup “virtual server” on IP sharing Router

It is for setting virtual server to forward IP, which is allotted to DVR.

For exam.)

DVR 1 IP: 192.168.0.11, DVR Port: 2500, Web Server Port: 2501

DVR 2 IP: 192.168.0.12, DVR Port: 2600, Web Server Port: 2601

If two sets of DVR are configured above, the virtual server on IP sharing router is as follows.

(1) PC Server Name: DVR1-1 (192.168.0.11)

Protocol: TCP, Internal Port: 2500, External Port: 2500

PC Server Name: DVR1-2 (192.168.0.11)

Protocol: TCP, Internal Port: 2501, External Port: 2501

(2) PC Server Name: DVR2-1 (192.168.0.12)

Protocol: TCP, Internal Port: 2600, External Port: 2600

PC Server Name: DVR2-2 (192.168.0.12)

Protocol: TCP, Internal Port: 2601, External Port: 2601

* For more detail, please refer to relevant IP sharing manual.

(3) 'DDNS' Setup on IP sharing router

DDNS configuration is no needed in case of fixed IP.

(4) Address and port number input on the Internet explorer window.

Please input the following format, <http://address:web server port>. If the system is on the dynamic IP environments and the address configured (3) is abc.dyndns.org and the same address and port is designated like (2),

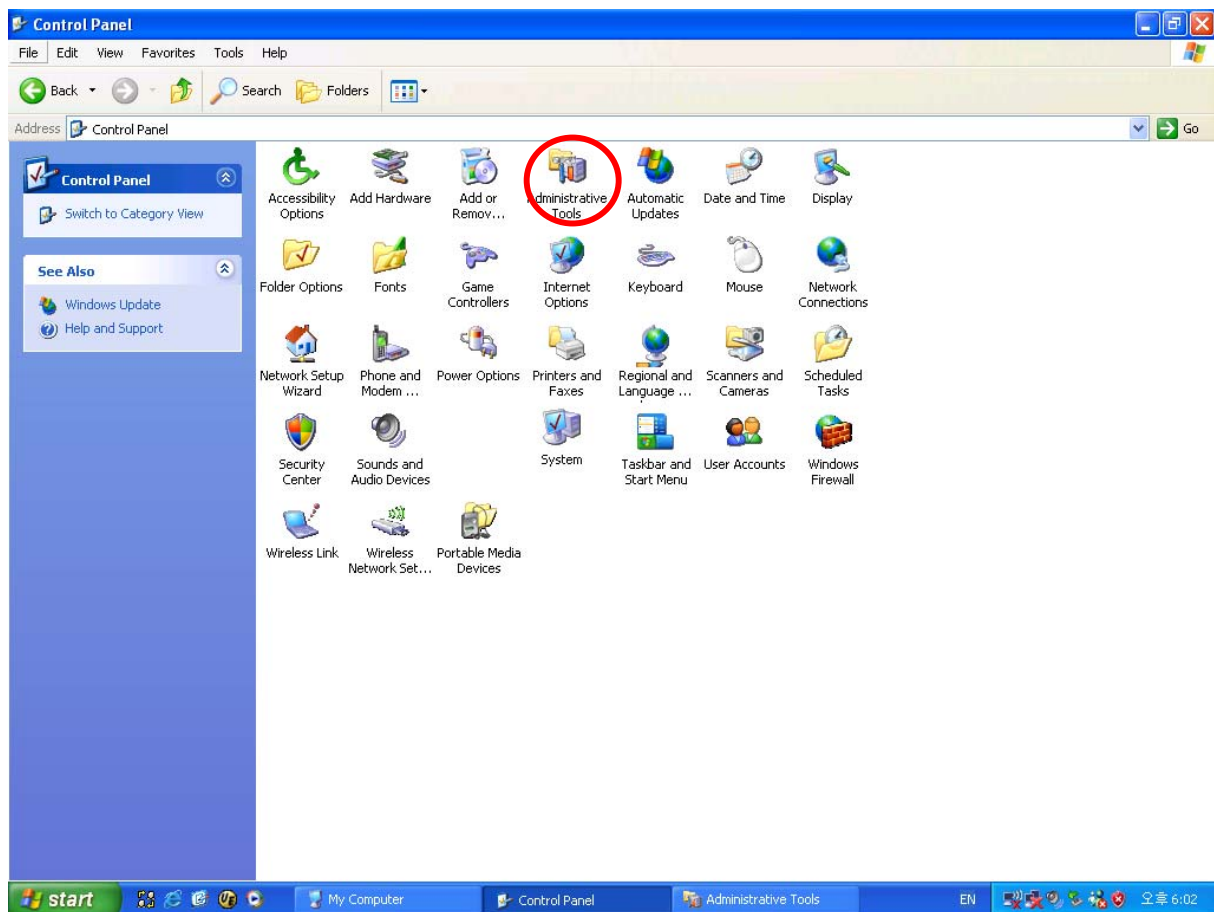
To connect DVR1, <http://abc.dyndns.org:2501>, to connect DVR2, <http://abc.dyndns.org:2601>.

Appendix 6

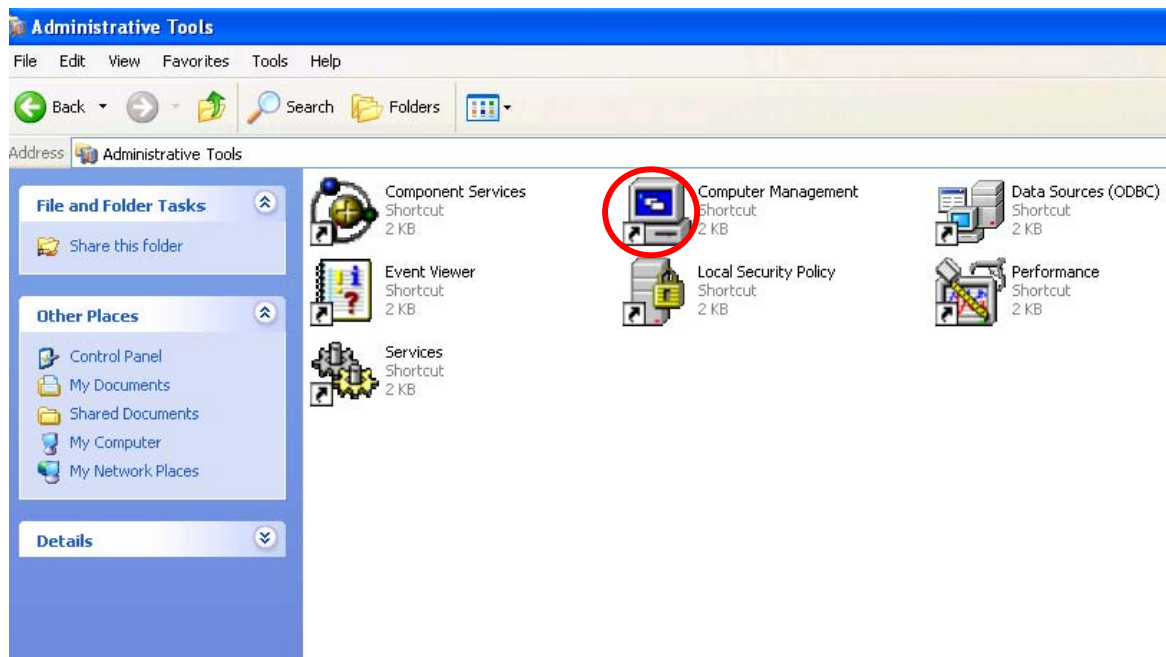
MAKING PARTITION ON EXTERNAL USB HDD

To back up to USB HDD, the USB HDD should be formatted first on PC. We are supporting FAT32 file system of which maximum size is 30GB at one partition. Please refer to the following procedure to make a partition and format on PC.

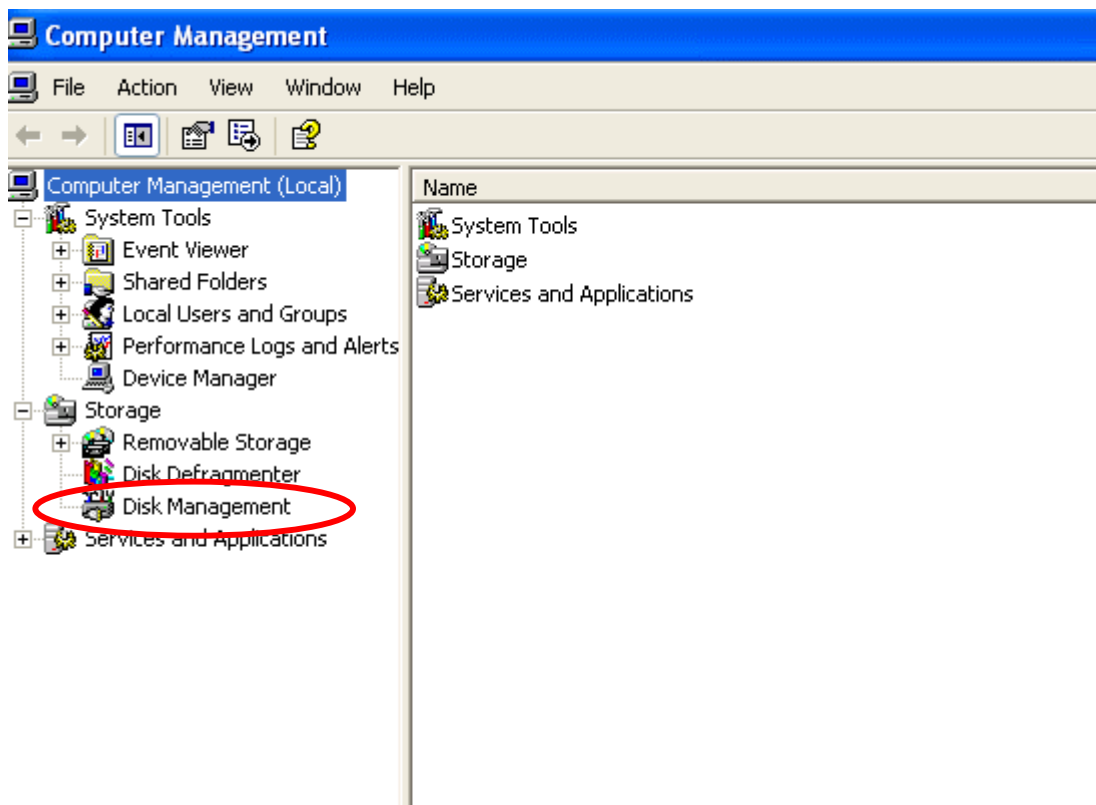
1. Select Control panel-> administrative Tools.



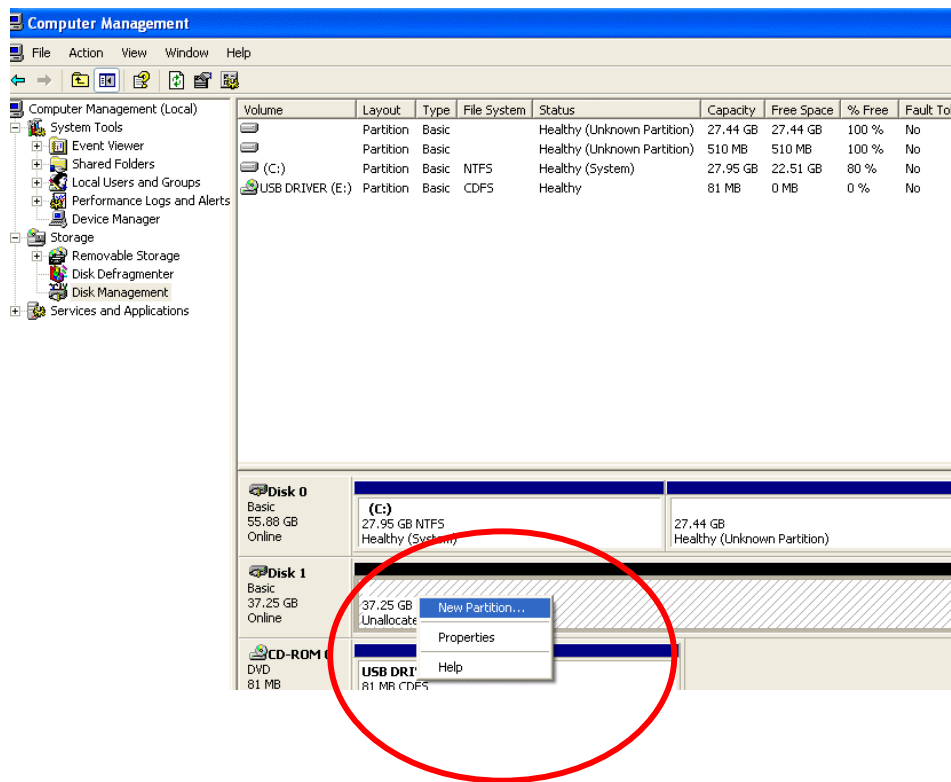
2. Select “Computer Management”



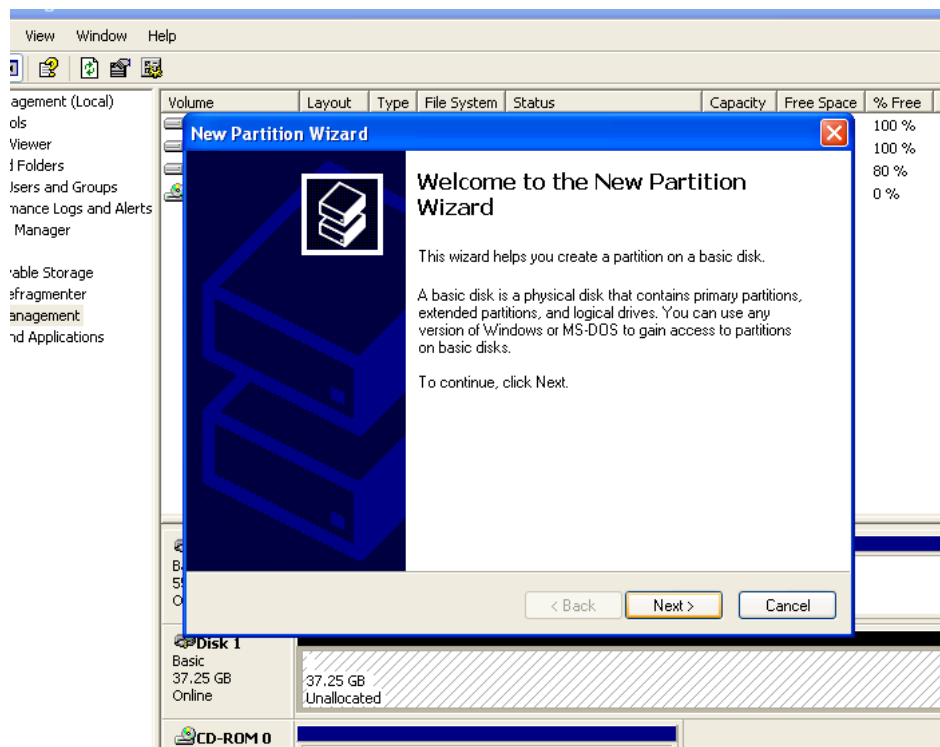
3. Select “Disk Management”.



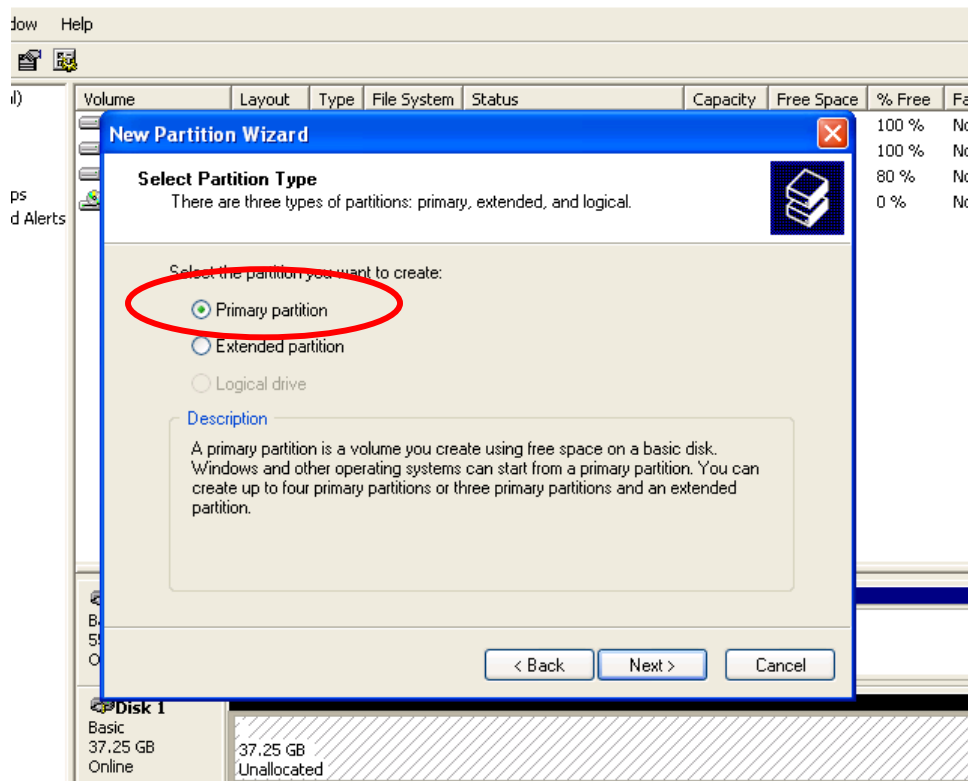
4. Click right mouse button and select “New Partition”.



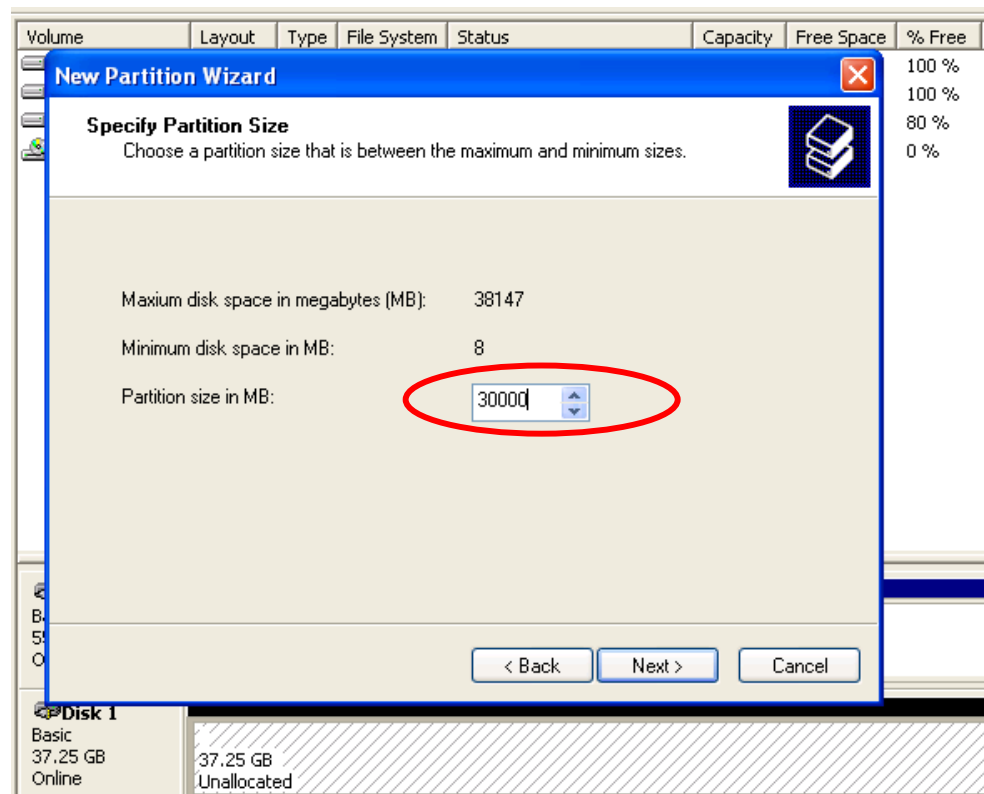
5. Follow “New Partition Wizard” procedure as below.



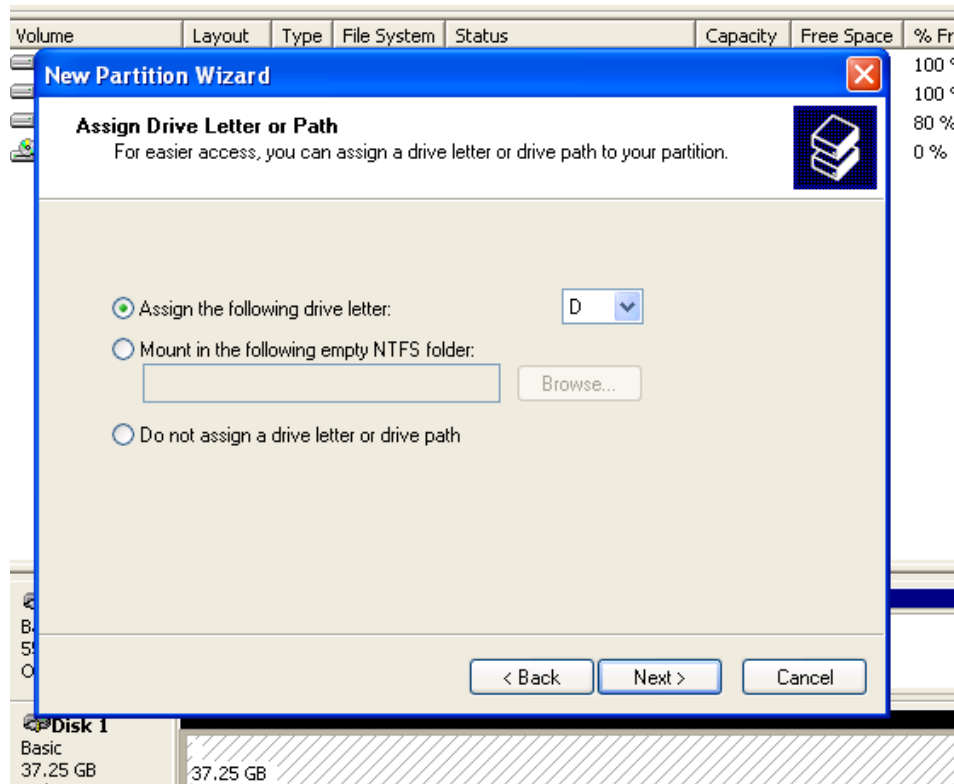
6.



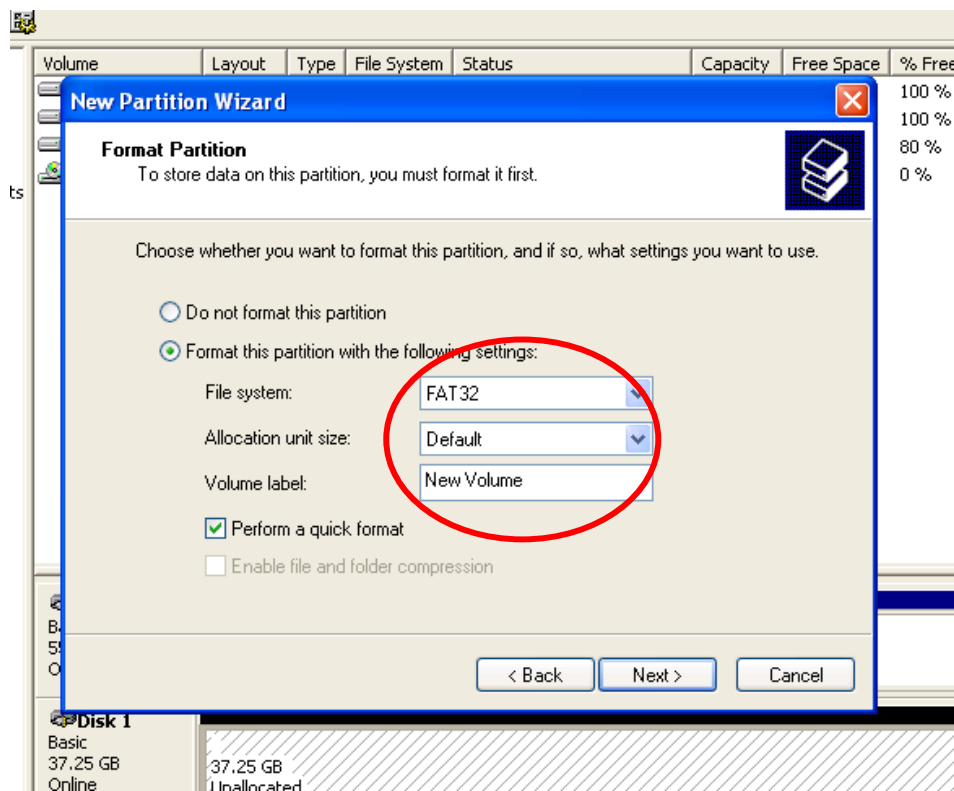
7. Maximum is 30GB at FAT32 file format.



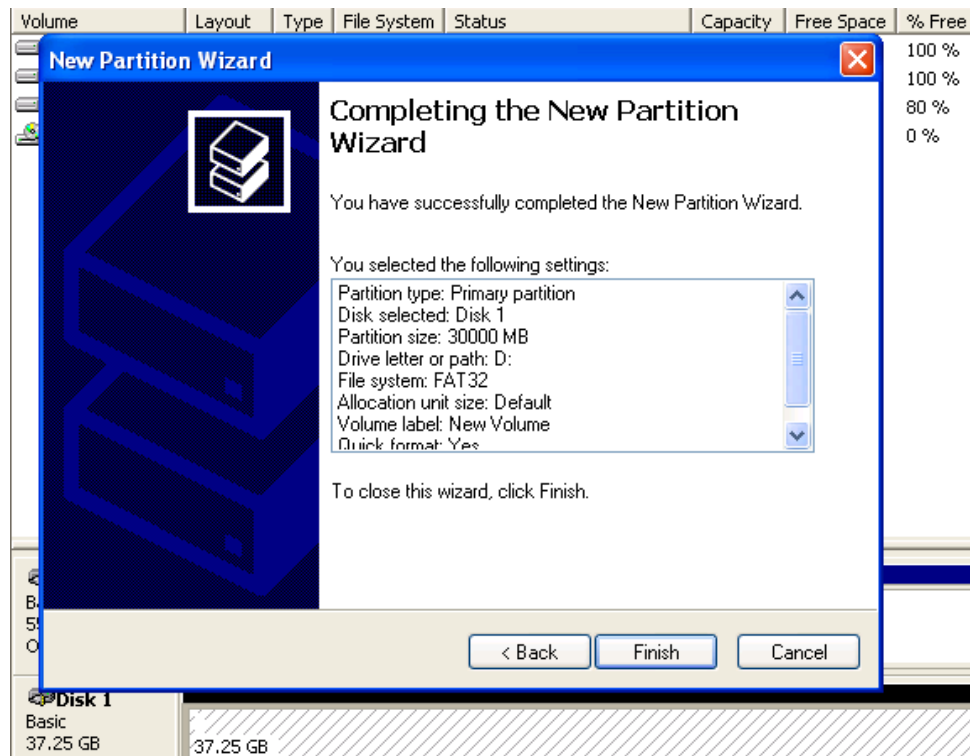
8.



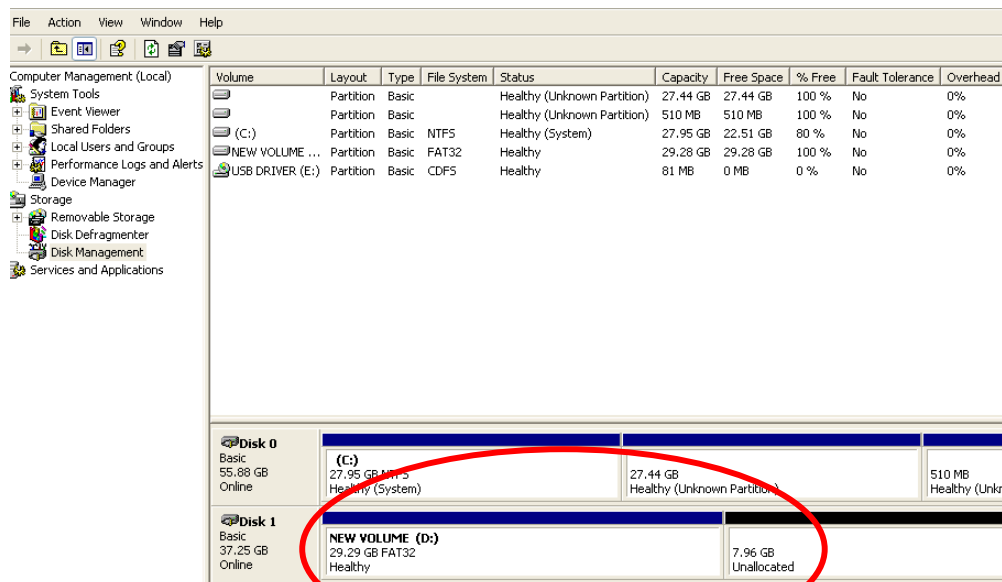
9.



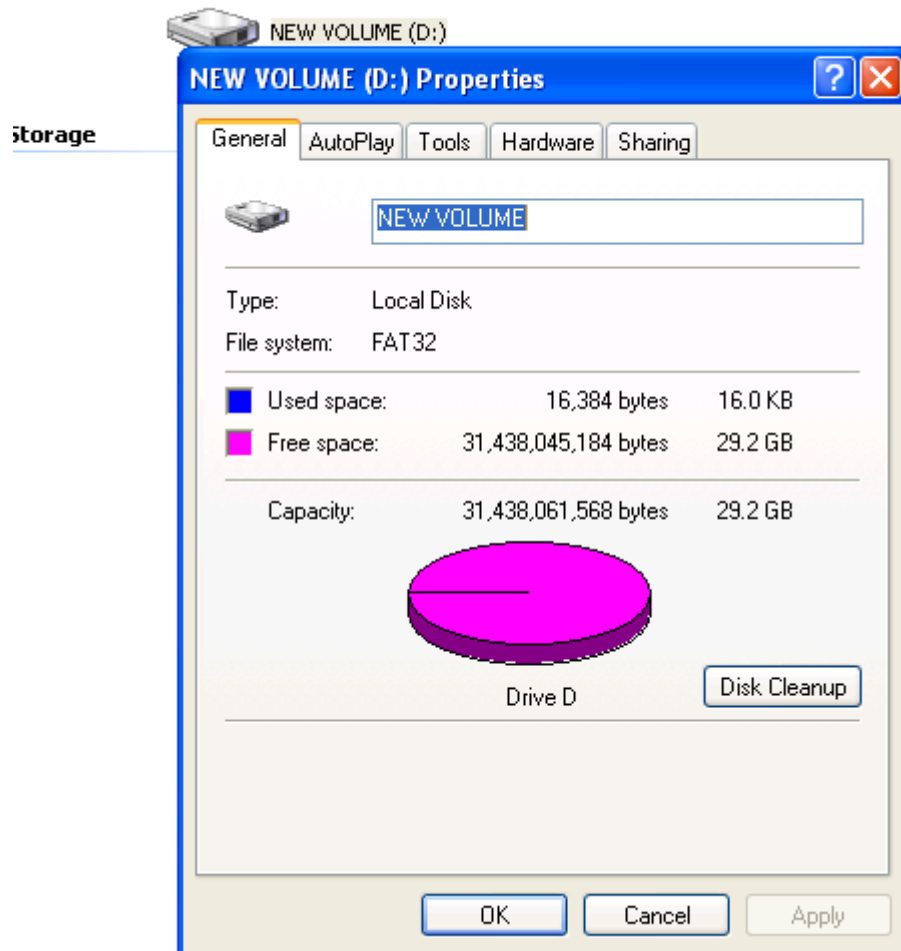
10. At this stage, New Partition has been made.



11. Check New partition was created correctly. (Format will be executed automatically)



12. Check New Partition was created correctly



Appendix 7

SPECIFICATION

Model				Quantum DVR Series			
Video	Camera input (NTSC / PAL)			Quantum4-DVD	Quantum8-DVD	Quantum16-DVD	
	Output			1 BNC, 1S-Video	1 BNC, 1S-Video, VGA		
Audio	Audio input			1RCA	4 RCA		
	Output			1 RCA			
Sensor in (N/C, N/O) /Alarm out				4 In / 1 Out			
Operating system				Embedded Linux			
Display	Speed			120fps	240fps	480fps	
	Resolution (pixel)			720*480, 260*20(NTSC)/ 720*288, 360*288(PAL)			
	Split screen			1,4 sequence	1,4,6,8 sequence	1,4,6,8,16 sequence	
Recording	Compression			MPEG4			
	Resolution (pixel)			720*480, 260*20(NTSC)/ 720*288, 360*288(PAL)			
	Picture quality			3 STEPS, (Low, Medium, High)			
	Mode			Normal. Motion. Alarm. Sequence			
	Priority			Alarm→ Motion→ Sequence→ Normal			
	Speed	Total	NTSC/PAL	60fps(720*240), 120fps(360*288) / 50fps(720*288), 100fps(360*288)			
		Each channel	NTSC	30fps(360*240)		15fps(360*240)	7.5fps(360*240)
				15fps(720*240)		7.5fps(720*240)	3.75fps(720*240)
			PAL	25fps(360*288)		12.5fps(360*288)	6.25fps(360*288)
	12.5fps(720*288)			6.25fps(720*288)	3.125fps(720*288)		
Water marking & scrambling			Propriety Algorithm				
Playback	Display			1, 4	1,4,8	1,4,8,16	
	Search mode			Date, Time, Calendar			
	Speed			Normal.Rew.FF. (Recorded speed *2, *4, *16) Frame to Frame, Pause			
	Device			Internal HDD			
	HDD Sizes (GB)			80,160 & 250	160,250 & 500		
	Still image capture & save			JPEG compression or AVI Format & USB (memory stick)			
Network	Network interface			Ethernet			
	Protocol			TCP/IP, SMTP, HTTP, DHCP, PPPOE (ADSL)			
	Serial communication			No	RS-232 1each, RS-485 1each		
	Application			Windows 2000 / XP (Client system)			
	Web browser			Internet Explorer ≥ 5.0. (DVR's control or viewing)			
	Event transport			When event occur, set to send E-mail			
Backup	Interface			USB 2.0			
	Back-up device			External USB HDD, internal DVD-RW, Network Backup, Memory stick			

Control	Motion detection	Each control/channel
		Sensitivity: 3step for each channel
		Area: Individually programmable motion detection area for each camera.
	Alarm hold time Event log Remote controller Pan/Tilt camera	5 ~ 240 seconds
		256 event (alarm, motion, video & power loss & record On/Off)
		IR remote controller (32)
		No RS-485 interface
Others	HDD Power source Power supply capability: Operating temperature Relative humidity Weight Net Gross (box) Dimension Net Gross (box)	Two HDD's max.
		100 ~ 240V AC. 50 ~ 60Hz.
		60W 250W (AC current ≤ 500mA)
		5 ~ 40°C (41 ~ 104°F)
		Maximum 80% Non-condensing
		4.0Kg 6.0Kg
		5.0Kg 7.0Kg
		350(w)*250(d)*70(h) 450(w)*370(d)*90(h) mm
		400(w)*340(d)*170(h) 500(w)*460(d)*190(h) mm

Design and product specifications subject to change without notice

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