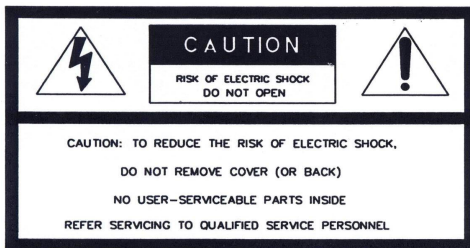


INSTALLATION/OPERATION

CREST CDR-2204N DIGITAL VIDEO RECORDER (MPEG4- 4CHANNEL)





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.2004

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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 that is directly or indirectly due to errors, incompleteness, or discrepancies the manual and the product described.

Trade marks

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1. FOR THE SAFETY OF CUSTOMERS

Caution before use

- ⇒ Please read this manual for proper use.
- ⇒ The cautions described in this manual contains very important information for the safe use, so, please follow the instruction.
- ⇒ Please keep it whether you could reach after reading.
- ⇒ Various symbols are used to mark safety and proper use. Please pay close attention to prevent personal or financial loss.

Tips for installation

- ⇒ Please avoid water, which could cause fire or electric shock.

Clean the plug and socket.

Please keep the socket and plug clean to avoid possible fire. The plug should be tightly connected to the wall socket.

Do not put the unit on an unstable place.

Do not put the unit on an unstable or sloped place to prevent damage to the unit.

Be careful for the installation position.

Don't put the device in humid, direct sunlight, dusty, hot, and/or greasy condition.

Caution for proper usage

During use

- In the following cases, please turn off the power and remove the plug then, please contact your dealer.
- If smoke comes out of the device or when you smell something burning.
- If a substance is spilled into the device.
- If the device is dropped or the case is damaged.
- If the power cable has been damaged (ex. slipped etc.)
- No picture being displayed.

Don't open the case or modify.

- There is the high voltage sector inside the unit so, if you open the case or modify it, it could cause fire or electric shock.

Don't put a cup containing water or juice and small material on the device

- If you spilt water or any substance into the device, it could cause the fire or electric shock.

Don't put any alien substance.

- Don't put alien substance through the fan. Make sure that fan outlet is clear of any obstacles and/or objects.

Don't touch during bad weather.

- During bad weather situations, don't touch the plug or cable. It could cause electric shock.

Don't touch the power plug with wet hand.

- Don't unplug with wet hands. It could cause electric shock.

Use the designated HDD

Please use the designated HDD. Otherwise, recording may not take place.

| TESTED UNITS | Maker | HDD Capacity |
|-------------------------|-----------------|-------------------------|
| | Western Digital | 80GB, 160GB, 250, 320GB |

Don't pull out the power cable by the wire, pull by power plug from the wall socket.

- It could damage the cable and cause the fire. Please pull out holding the plug.

Unplug unit when moving to a different location.**Don't block the ventilation window.**

- When the ventilation window is blocked, it could cause damage to the unit by the generation of internal heat.

Don't put heavy item (s) on the device.**Cleaning the unit.**

- Regarding the cleaning, please contact your Installer. If there is too much dust inside the device, it could cause malfunctions, overheating or shorting problems.

Clean the plug and socket

- Please keep the socket and plug clean to avoid fire. The plug should be tightly connected to the wall socket.

Caution when you don't use the device for a period of time.

- If you don't use the device for a period of time, please switch off and unplug.

2. DESCRIPTION OF PARTS AND FUNCTION

2-1 COMPOSITION OF UNIT

Standard



DVR



**CDR-2204N
Utilities Disc**



Power Cable

If you have received a product “without HDD (Hard Drive)”, the accessories should be provided from the store that the HDD was purchased.

- 1) Stand for HDD installing
- 2) Fixing screws

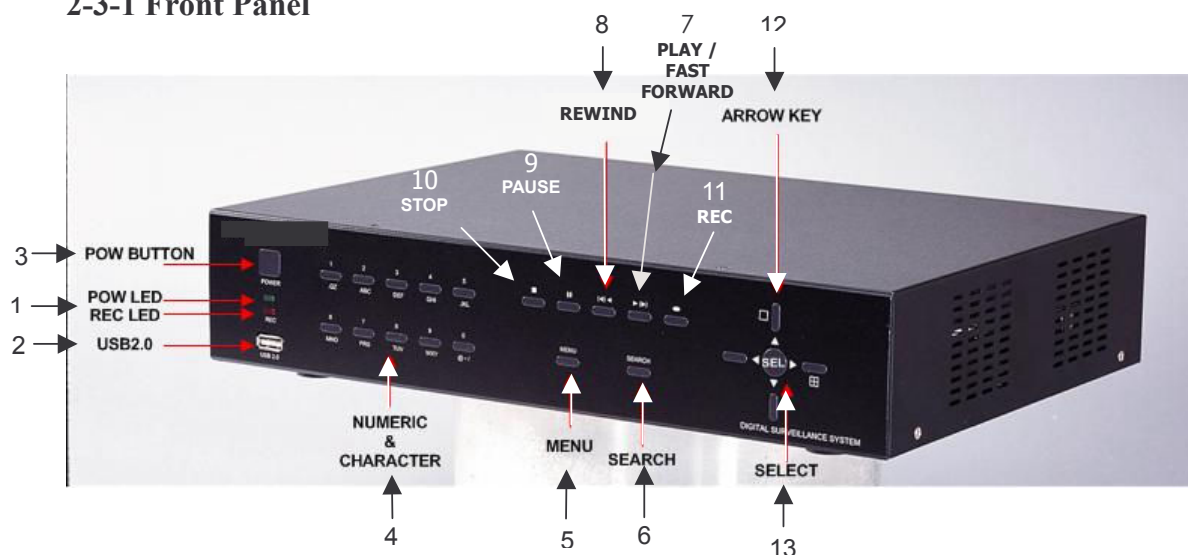
☐ Accessories are subject to change without notice.

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.
- **Technology**
 - Embedded LINUX OS
 - Total maximum recording rate 120 fps
 - High-resolution and high-quality MPEG-4 algorithm
 - Using Water marking and scrambling technologies
 - Strong protection recorded date
 - MPEG-4 : 1~2 Kbytes per image with resolution 360x240
- **Functionality**
 - Variable recording function per camera (normal, alarm, motion, schedule)
 - Full channel real-time monitoring
 - Live monitoring, recording, playback, backup, remote access at the same time.

2-3 DESCRIPTION OF PARTS AND FUNCTION

2-3-1 Front Panel



(1) LED (POW/REC LED)

- REC: Recording status (When recording is on, the
- PWR: System Power On/Off (When power is on, the green light will be 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 the menu on the screen

(6) SEARCH

- Enters search mode directly

(7) PLAY▶ / ▶▶ FAST FORWARD

- ▶ Playback the recorded data
- ▶▶ Fast forward playback

(8) REWIND (◀)◀

- Reverse the playback.

(9) PAUSE (||)

- To freeze picture on playback mode and live mode.

(10) STOP (■)

- To stop playback and go back to live mode.

(11) REC (●)

- It starts & stop manual recording of relevant camera in a full screen live mode.

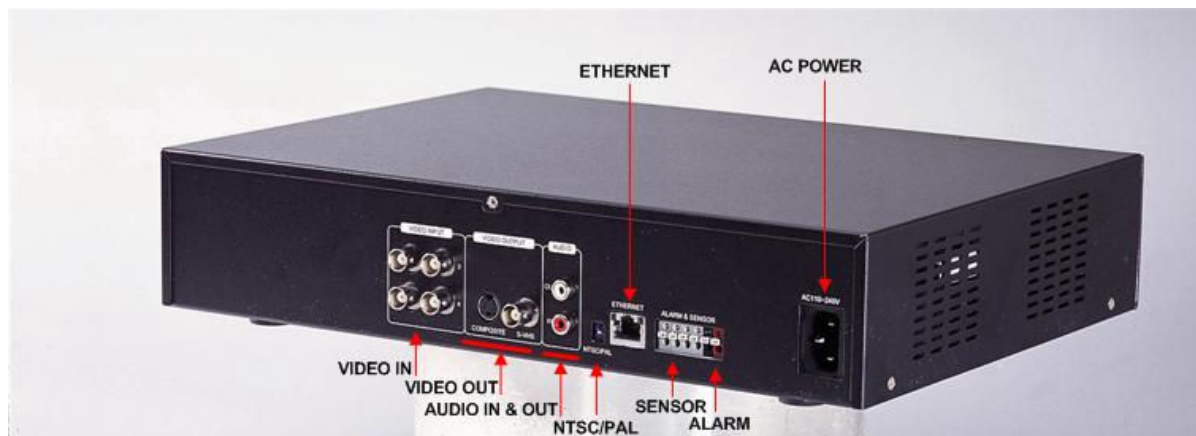
(12) ARROW KEY

- Curse shifting on the menu
- Shows the divided screen
- "Left, Down" arrow key is for audio volume (Left: Audio Volume Up, Down: Audio Volume Down)

(13) SELECT

- Menu selection

2-3-2 Rear Panel



ATTENTION

When the video format is changed, the system should be re-booted. The video format should be selected before booting

(1) Video Input (BNC)

- 4 Camera input (1.0 v p-p, 75Ω)

(2) Line Audio Input & (3) Audio Output

- Audio Input through line

(4) Video Out (BNC) & (5) Video Out (S-VHS)

- *Video Out (4)- Composite Output through BNC connector
- *Video Out (5)- Composite Output through S-VHS

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

- Selectable either NTSC or PAL

(7) Network Port (RJ-45)

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

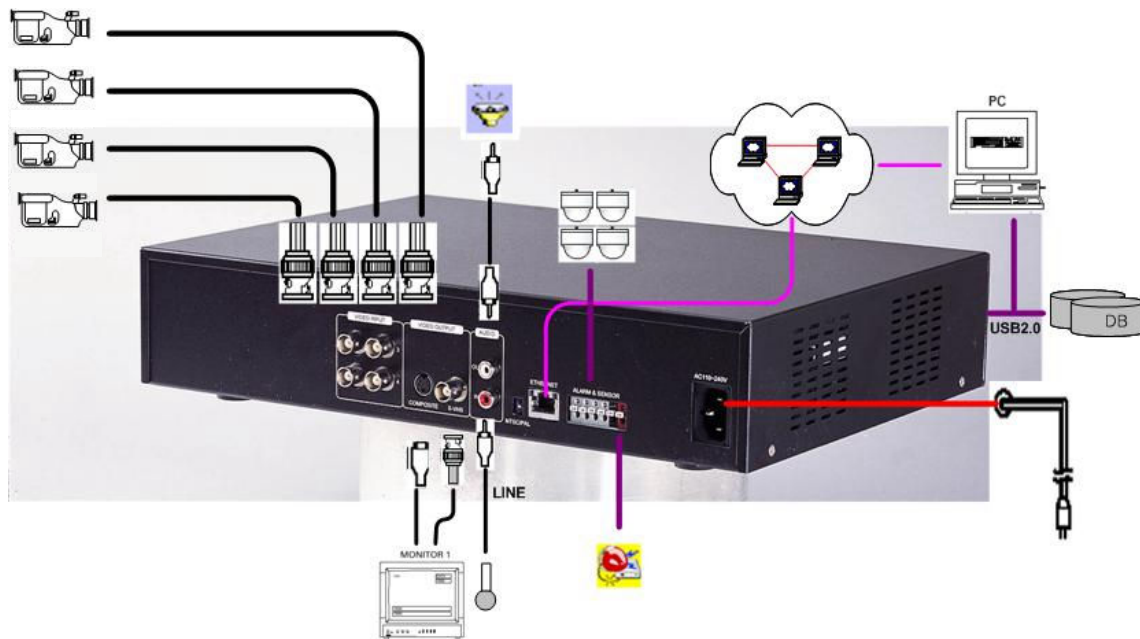
(8) Alarm/Sensor

- Alarm/Sensor input / output port

(9) AC Power

- AC 110~240 V (Free Voltage)

2-3-3 System Connection Diagram



2-3-4. OSD Description (OSD = On Screen Display)

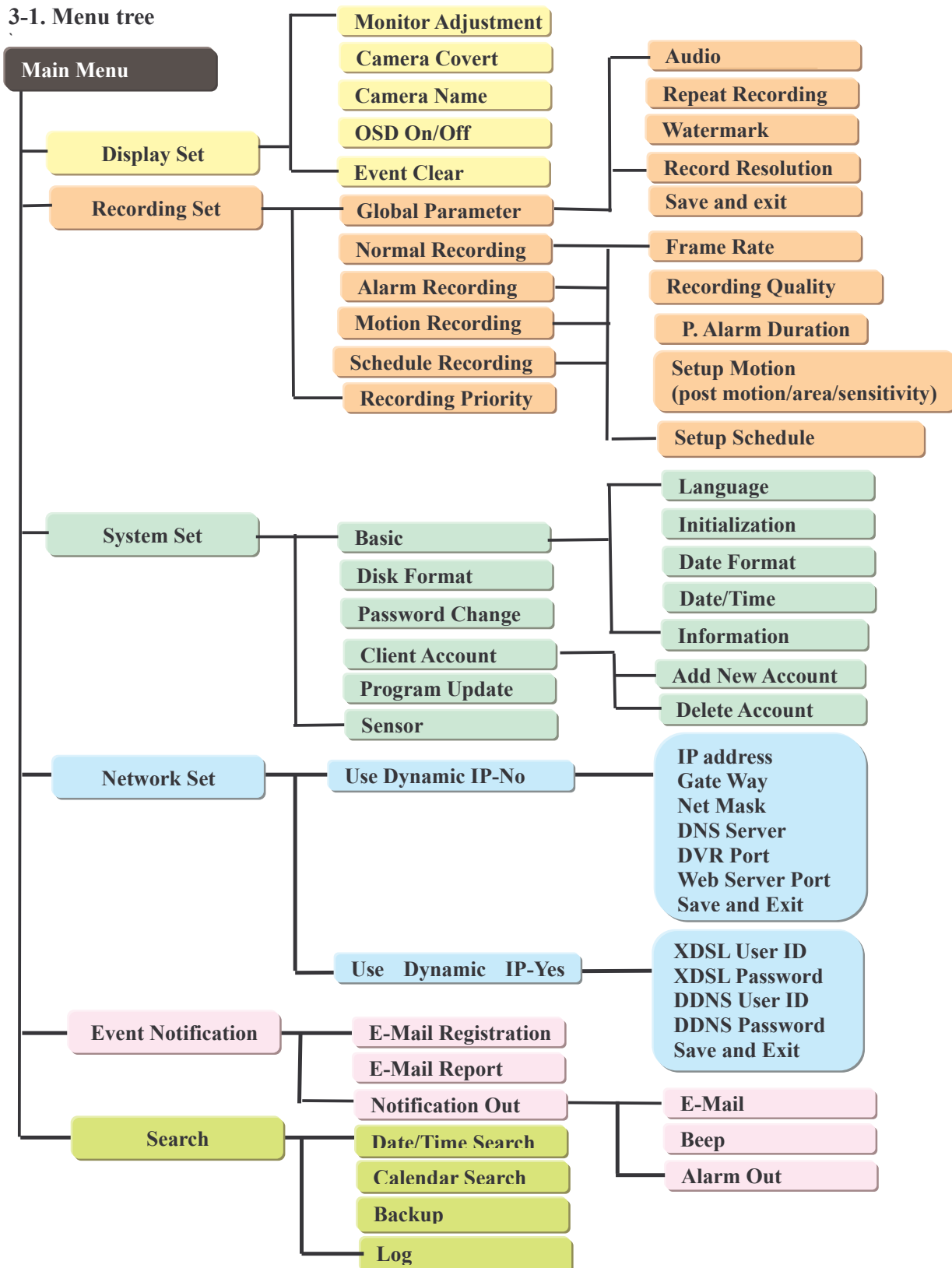


NORMAL: It shown the recording Mode.
 If the user programmed "schedule recording" and current time is out of range, "STANDBY" will be shown when the "Rec" button is pushed
 HD: 34%, This shows how much as a percentage is occupied on the Hard Disk Drive
 12-31-2004 12:00:00 : It shows the system date & time

It shows "Alarm recording mode / Motion recording mode/ Power loss"/ Video Loss" in left 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 while the system is on.

MAIN MENU

☐ DISPLAY SET
RECORDING SET
SYSTEM SET
NETWORK SET
EVENT NOTIFICATION

Please use UP (▲) or DOWN (▼) on the front panel to select/choose your desired submenu. To navigate to the submenu, use the “SELECT” button.

Display Set

DISPLAY SET

☐ MONITOR
ADJUSTMENT
CAMERA COVERT
CAMERA NAME
OSD ON/OFF

Monitor Adjustment

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

Camera Covert

This allows you to hide cameras, which mean, even live monitoring screen isn't shown on the screen (just a blue screen), while recording(if recording is “on” condition) is activating.

Camera Name

Allows you to name each camera position.

OSD On/Off

OSD on/ off: Selecting whether the OSD displaying is on/off

Event Clear

It is for erasing OSD characters related with events.

Recording Set

In our system, all recorded data can be saved in the format of watermark when user selects “watermark: On” So, After downloading the saved data you want to check, user can confirm it whether is changed by someone using our PC software we provided.

NOTE

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

RECORDING SET

GLOBAL PARAMETER
NORMAL RECORDING
ALARM RECORDING
MOTION RECORDING
SCHEDULE RECORDING
RECORDING PRIORITY

Global Parameter

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

Normal Recording

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

Alarm recording

It executes the recording when a sensor is activated.

Motion recording

It executes the recording when motion is captured.

Schedule recording

It executes the recording as per the programmed timetable.

Recording priority

It specifies the priority among 4 kinds of recording methods.

Recording Parameter

RECORDING PARAMETER

AUDIO OFF
REPEAT RECORDING OFF
WATERMARK OFF
RECORDING RESOLUTION
SAVE AND EXIT

Audio Recording

On/Off. When audio is “on”, the audio will be recorded globally.

Repeat recording

It sets the recording mode when the HDD capacity is exceeding its limit. It can be selected between “On” (overwrite) / “Off” (stop).

Watermark

Can select either Watermark ON or OFF. This menu is for protecting video data from forging when it exports to a digital media for backup.

Recording Resolution

It supports 360x240 / 720x240 mode. The default is 720x240 and “←, →” button is for changing the resolution.

NOTE

1. The resolution is applied to all channels. Individual camera set-up is impossible
2. When you are in the “recording” mode, the menu, “Global parameter” and 4 recording mode (normal, alarm, motion, schedule)” will not change. You must stop recording if you want to change them.

Normal Recording

| <i>NORMAL RECORDING</i> | |
|--------------------------------|---------|
| CH1 FRAME RATE | : 30FPS |
| CH2 FRAME RATE | : 30FPS |
| CH3 FRAME RATE | : 30FPS |
| CH4 FRAME RATE | : 30FPS |
| CH1 RECORDING QUALITY: | HIGH |
| CH2 RECORDING QUALITY : | HIGH |
| CH3 RECORDING QUALITY : | HIGH |
| CH4 RECORDING QUALITY : | HIGH |
| SAVE AND EXIT | |

Frame Rate (fps)

The following shows available frame rate each channel. In 360x240 mode, 1~30fps is available each channel (4channel totally 120fps) and 720x 240 is 1~15fps each (4channel totally 60fps, available max. frame rate each channel is 30 fps- for exam, Ch.1 30fps, Ch2. 30fps, Ch3. 0fps, Ch4 0fps.)

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

Recording Quality

It selects among High, Mid, Low .

Save and Exit

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

Alarm Recording

| ALARM RECORDING | |
|---|---------|
| <input type="checkbox"/> CH1 FRAME RATE | : 30FPS |
| CH2 FRAME RATE | : |
| 30FPS | |
| CH3 FRAME RATE | : |
| 30FPS | |
| CH4 FRAME RATE | : |
| 30FPS | |
| CH1 RECORDING QUALITY : | |
| HIGH | |
| CH2 RECORDING QUALITY : | |

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

Frame Rate (fps)

The following shows available frame rate each channel. In 360x240 mode, 1~30fps is available each channel (4channel totally 120fps) and 720x 240 is 1~15fps each (4channel totally 60fps, available max. frame rate each channel is 30 fps- for exam, Ch.1 30fps, Ch2. 30fps, Ch3. 0fps, Ch4 0fps.)

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

Recording Quality

It selects among High, Mid, Low.

Post Alarm Duration

After alarm activates, it sets how long the recording continues. The value is selectable among 5/30/60/120/180/240 sec.

Save and Exit

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

Motion Recording**MOTION RECORDING**

☐ CH1 FRAME RATE : 30FPS
CH2 FRAME RATE : 30FPS
CH3 FRAME RATE : 30FPS
CH4 FRAME RATE : 30FPS
CH1 RECORDING QUALITY: HIGH
CH2 RECORDING QUALITY : HIGH
CH3 RECORDING QUALITY : HIGH
CH4 RECORDING QUALITY : HIGH
SETUP MOTION
SAVE AND EXIT

Frame Rate (fps)

The following shows available frame rate each channel. In 360x240 mode, 1~30fps is available each channel (4channel totally 120fps) and 720x 240 is 1~15fps each (4channel totally 60fps, available max. frame rate each channel is 30 fps- for exam, Ch.1 30fps, Ch2. 30fps, Ch3. 0fps, Ch4 0fps.)

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

Recording Quality

It selects among High, Mid, Low.

Setup Motion**SETUP MOTION**

☐ POST MOTION (30-240SEC): 30 SEC
SET CH1 MOTION AREA
SET CH2 MOTIION 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

It sets the how long the recording lasts after motion is taken. The value is among 30, 60,120,180,240 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 selected. *EXAMPLE:* 1,2,3,4 cells (white color background) is disabled area. “SEL” button is required for selecting an 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.

Schedule Recording

| | |
|---|---------|
| SCHEDULE RECORDING | |
| <input type="checkbox"/> CH1 FRAME RATE | : 30FPS |
| CH2 FRAME RATE | : 30FPS |
| CH3 FRAME RATE | : 30FPS |
| CH4 FRAME RATE | : 30FPS |
| CH1 RECORDING QUALITY: | HIGH |
| CH2 RECORDING QUALITY : | HIGH |
| CH3 RECORDING QUALITY : | HIGH |
| CH4 RECORDING QUALITY : | |

Frame Rate (fps)

The following shows available frame rate each channel. In 360x240 mode, 1~30fps is available each channel (4channel totally 120fps) and 720x 240 is 1~15fps each (4channel totally 60fps, available max. frame rate each channel is 30 fps- for exam, Ch.1 30fps, Ch2. 30fps, Ch3. 0fps, Ch4 0fps.)

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

Recording Quality

It selects among High, Mid, Low.

Setup Schedule

SCHEDULE SETUP

☐SELETCT ALL

| | 0 | 4 | 8 | 12 | 16 | 20 | |
|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| MON | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| TUE | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| WED | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| THU | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| FRI | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SAT | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SUN | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SAVE AND EXIT

“SEL” button is used for selecting relevant time and day. Arrow Key will be used for movement.

NOTE

When you change the items regarding recording (resolution, mode, frame rate, etc), “Recording” should be “off” first and then change the values to be modified.

Recording Priority

RECORDING PRIORITY

☐1ST PRIORITY: NORMAL
☐2ND PRIORITY: MOTION
☐3RD PRIORITY: SCHED
☐4TH PRIORITY: ALARM
 SAVE AND EXIT

It sets the priority among 4 kinds of recording methods. If Normal is 1st priority, the recording is proceeded as per normal recording’ setup value.

System Set

SYSTEM SET

☐BASIC
 DISK FORMAT
 PASSWORD CHANGE
 PROGRAM UPDATE
 CLIENT ACCOUNT
 SENSOR

Basic

BASIC

☐LANGUAGE : ENGLISH
 INITIALIZATION
 DATE FORMAT : mm-dd- yyyy
 DATE/TIME : 11-18-2004 03:50:31
 INFORMATION
 SAVE AND EXIT

Language

The default is English

Initialization

All the menu value will be returned to the factory default. To initialize the system, “the recording off” will be required

Date Format

Can select among the formats, mm-dd-yyyy / dd-mm-yyyy, yyyy-mm-dd. If date format needs to be changed, “Recording off” is required.

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 improperly when you try to play back video. If you set the hour ahead, this is not a problem. But, if you set the hour back, there will be more than one recording at the same time.

Such as during the 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 the 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 : NOT FOUND
EXECUTE FORMAT

Password is required for Disk to be formatted (default password is “00000000”, which is same when you access at “recording off”). Also, Both “recording off” & ‘Playback off’ are required when you try to format the HDD.


Client Account

CLIENT ACCOUNT

☐ ADD NEW ACCOUNT
DELETE ACCOUNT
SAVE AND EXIT
CLIENT LIST

Client on the network will be registered at “Add New Account” option. User ID & Password has to be registered at the system first to connect with a ‘user level’. But, administrator can access without registering.

Program Update

The latest firmware version can be upgraded through USB 2.0 Port using 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 the system recognize “new program”, “New program found” will be displayed on the screen. Then, please buttons “Select” 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 off 1) recording 2) playback 3) network connection during upgrading.
4. After updating program, reboot is required.

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 among 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, the system will ask for a password (default is 00000000). When user is using a fixed IP, each address is required to be filled out as per network environment. In a fixed IP environment, no need to change DVR & Web Server Port. As per DVR & Web server port, please refer Appendix 4. If user is on the condition of "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 user in 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 in respect of ID and password.

DDNS Server is needed when clients connects to the DVR, which is on a Dynamic IP, since clients do not know the IP of the DVR. (Please register your ID & domain at www.dyndns.org, so you can use the DDNS server free of charge)

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 | |
| SAVE AND EXIT | |

At E-Mail registration menu, user register the e-mail address to receive several “Event Notification “. To register the e-mail address, 1) input the address 2) push “Save and Exit” 3) Try “ Send a test e-mail”.

NOTE:

1. Sender mail ID & domain should be entered first. If not, e-mail will not work.
EXAMPLE: You would input “your user ID” as mail ID & “domain name.triad.rr.com” as domain; sender’s information will have “user@domain name.triad.rr.com”.
2. IP & Gateway in the system should be set up first.
E-MAIL Report is available among Daily/Weekly/Immediately. Daily report will be done 00(H):00(M) each day and weekly report will be done 00(H):00(M) 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, 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

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

Calendar Search

Following screen shows when “Calendar search” is selected.

| CALENDAR SEARCH | | | | | | |
|-------------------------------------|-----|-----|-----|-----|-----|----|
| <input type="checkbox"/> YEAR :2004 | | | | | | |
| 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 |

It shows where the recorded data is located. Using “→, ←”buttons, to move to a specific time/date. To enter sub-menu(Time), please use “SEL” button. 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 that has data will be shown in white bar and 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 that has data will be shown in white and using “SEL”, user can start the playback.

Back Up

When Memory stick connects USB port, the icon  will be shown at the bottom of Monitor. Also, the following menu will be shown.

BACKUP

☐ BACKUP DEVICE: FLASH
DEVICE FORMAT
FILE FORMAT: AVI(EXCLUSIVE)
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

Back-up Device

USB memory stick (thumbs drive) is available, or you can back-up using the 'Remote Software'.

Device Format

To back up the data, please delete existing files on the stick first. Before backing up any data, please delete any existing data on the thumb drive first by using the format option in the back-up menu.

File Format

AVI or Exclusive file format is available. AVI file is played with window media player (note: using Divx codex – see utility disk to install or visit www.divx.com, to obtain or exclusive file will that be played using our own exclusive player. The exclusive player will be 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

You can select one channel among CH 1,2,3,4 in case of AVI file but, if you select exclusive, 4channel can be selected at the same time.

Transfer

Downloading the backup data to thumb drive. Percentage during downloading will be shown during this operation. -

*** USB compatibility has been tested successfully for these recommended USB flash drives.**

Lexar Jump Drive 128/256MB

SanDisk Mini Cruzer 128MB , SanDisk Cruzer Micro 256MB

NOTE

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

5. CLIENT PROGRAM

5-1. Network Connection

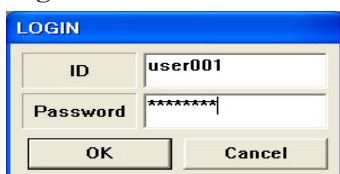
Minimum PC specification

CPU : Pentium III 750MHz or higher
Graphic Memory : 32M or higher
*windows operating system 2000 or XP.

IP Insertion

Connection will be done 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.

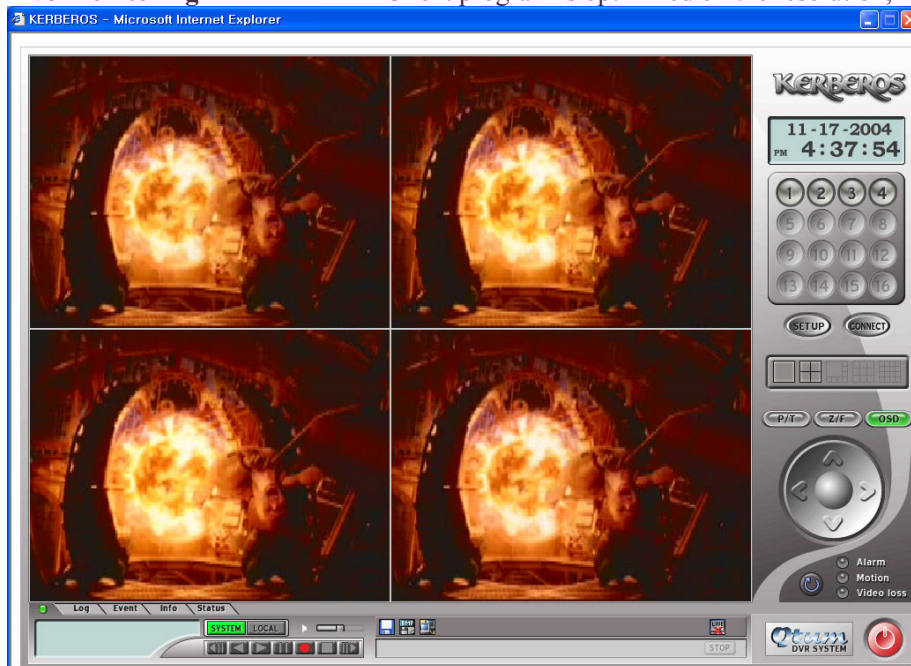
Log In

A screenshot of the LOGIN window. It has a blue title bar with the word "LOGIN" in white. Below the title bar, there are two input fields: "ID" with the text "user001" and "Password" with a masked password "*****". At the bottom, there 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 entered wrong or clicking “Cancel”, the program ends.

Live Monitoring

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



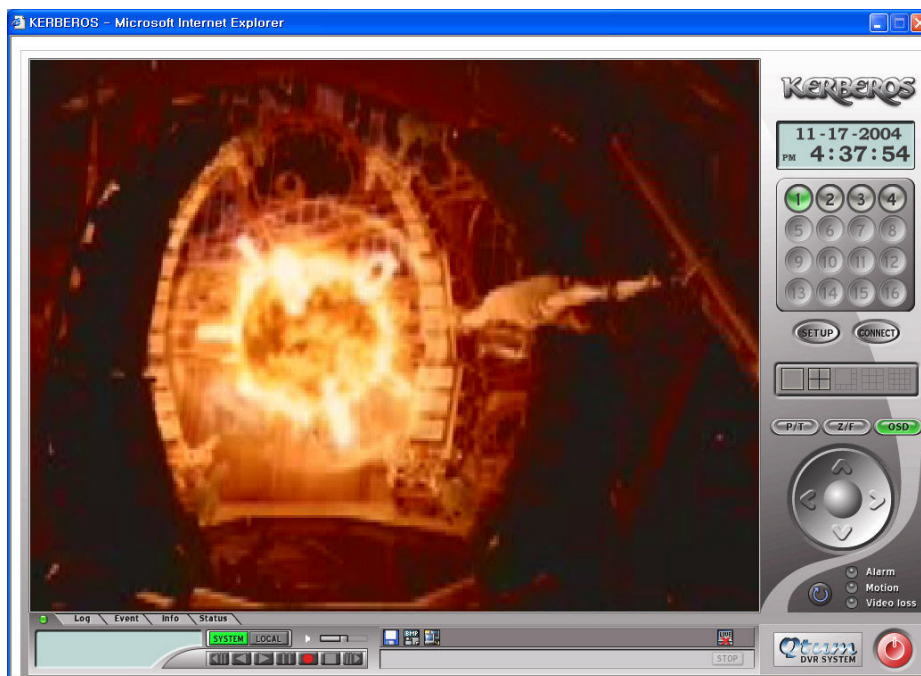
Channel Button



It shows how many channels are active on the live monitoring or playback. When selects the relevant channel, it will return a full, single image only and the button goes to a green color.



Channel Division Multi-channel division will be done during the monitoring or playback. As seen in picture, 1,4 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 green.

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



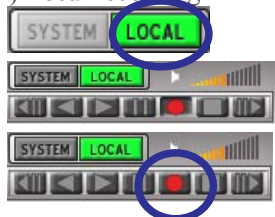
NOTE:

To turn off 'recording', push the red recording button again. You will be prompted for a password.

~~~ **IMPORTANT** ~~~

If recording has been turned off and the client program is closed, the DVR will not be recording. The user must restart recording on the DVR First.

### 2) Local recording



To save live video onto client PC HDD, press the recording button when the local icon is on green as shown in blue circle. Then, recording data is saved on the client HDD.

\* Both admin and user can do local recording.

To stop the recording, press recording button again.

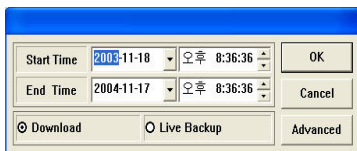
### Local playback



When "Local" button is activated (green one), it will be searching clients PC.

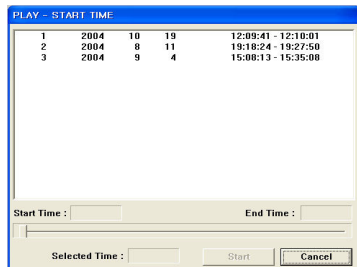


When you push the Play (□),



The window besides is shown. Set the starting & 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.



## Crest CDR-2204N 4 Channel - Installation/ Operation Manual

PLAY - START TIME

|   |      |   |   |                     |
|---|------|---|---|---------------------|
| 1 | 2005 | 2 | 1 | 16:52:34 - 16:59:09 |
| 2 | 2005 | 2 | 1 | 16:52:34 - 16:59:09 |
| 3 | 2005 | 2 | 7 | 13:13:32 - 13:13:32 |
| 4 | 2005 | 2 | 7 | 13:13:32 - 13:46:53 |
| 5 | 2005 | 2 | 7 | 13:46:53 - 13:46:53 |

Start Time : 13:13:32      End Time : 13:46:53

Selected Time : 13:13:33      Start      Cancel

Select the start time and push 'start' button.



Then, local playback will be done as shown.

## Remote playback



Select the system button (will turn green).



Push the Play button (▶),



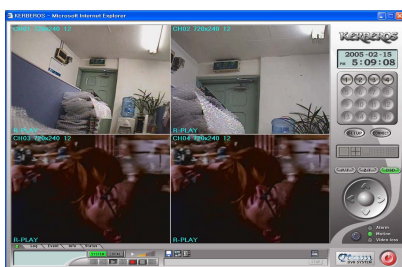
The next window is shows besides “start” and “end” time, push “OK” button after making your selection.



Then, list will be shown.



Select the time desired and push ‘start’ button.



Then, remote playback will be done as besides.



## Setup



Setup menu is composed of:

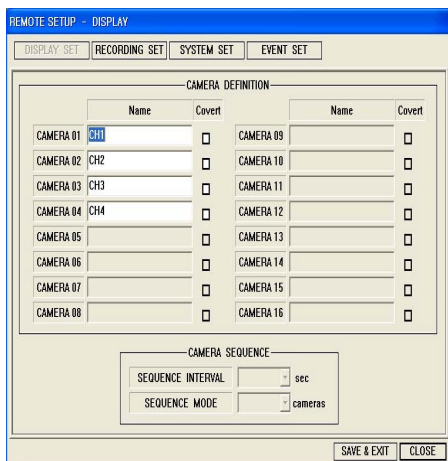
- 1) Remote Setup
- 2) Local Setup
- 3) Firmware Upgrade menu.

## Remote setup



### Note:

When the main system is entering “ menu OSD”, remote setup doesn’t work. “OSD updating failure” message will be displayed. The admin must stop DVR recordings to make system changes.



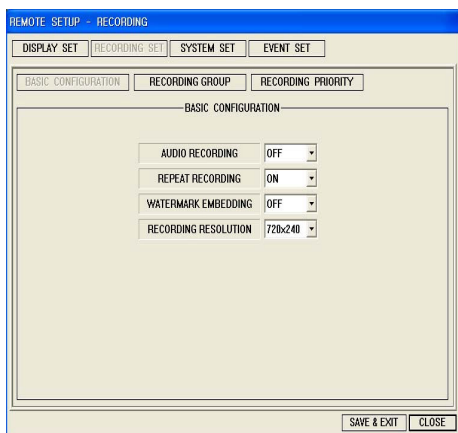
When you select ‘Remote Setup’ menu, User enters ‘Display Set’ menu, in which user can select ‘Camera name’ as do in local system. To save changed values, you should button ‘Save & Exit ‘.

When user select ‘Recording Set’ menu, it has 3 sub-menu.

- 1) Basic Configuration: you can configure
  - a. Audio Recording
  - b. Repeat Recording
  - c. Watermark Embedding
  - d. Recording Resolution

like local system.

- 2) Recording Group : It has 4 sub-menu ,
  - a. Normal
  - b. Alarm
  - c. Motion
  - d. Schedule like Local system
- 3) Recording Priority: User can select the recording priority.



## Crest CDR-2204N 4 Channel - Installation/ Operation Manual

REMOTE SETUP - SYSTEM

DISPLAY SET RECORDING SET SYSTEM SET EVENT SET

**BASIC**

LANGUAGE: **ENGLISH**

DVR ID: [ ]

BACKUP: [ ]

DATE: MM-DD-YYYY [ ]

**PTZ CAMERA MODEL**

DVR CH NO.: [ ]

MANUFACTURE: [ ]

PTZ MODEL: [ ]

ID: [ ]

**SCHEDULE BACKUP**

**STORED**

2005-02-15 [ ]

2005-02-15 [ ]

**CONDITION**

☐ Alarm

☐ Motion

**START**

2005-02-15 [ ]

00:00 4:38:57 [ ]

**END**

2005-02-15 [ ]

00:00 4:38:57 [ ]

**TARGET**

[ ]

**TABLE**

SET

**CAMERA**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☐ 12

☐ 13 ☐ 14 ☐ 15 ☐ 16

**USER ACCOUNT**

| ID     | PASS     | CONFIRM  | ADD | SET | DEL |
|--------|----------|----------|-----|-----|-----|
| USER 1 | 01234567 | 01234567 | ADD | SET | DEL |
| USER 2 | [ ]      | [ ]      | ADD | SET | DEL |
| USER 3 | [ ]      | [ ]      | ADD | SET | DEL |
| USER 4 | [ ]      | [ ]      | ADD | SET | DEL |
| USER 5 | [ ]      | [ ]      | ADD | SET | DEL |

**SENSOR IN**

SENSOR 1: NONE [ ] SENSOR 2: NONE [ ]

SENSOR 3: NONE [ ] SENSOR 4: NONE [ ]

**ALARM OUT**

BUZZER: [ ]

ALARM 1: OFF [ ] ALARM 2: [ ]

ALARM 3: [ ] ALARM 4: [ ]

SAVE & EXIT CLOSE

Among 'System Set' menu, PTZ Camera & Schedule Backup menu is NOT AVAILABLE for the 4-channel DVR.

REMOTE SETUP - EVENT

DISPLAY SET RECORDING SET SYSTEM SET EVENT SET

**E-MAIL REGISTRATION**

E-mail address: [ ]

Password: [ ]

**E-MAIL REPORT**

MONDAY [ ] TUESDAY [ ]

WEDNESDAY [ ] THURSDAY [ ]

FRIDAY [ ] SATURDAY [ ]

SUNDAY [ ] HOLIDAY [ ]

TIME: 00:00 4:41:27 [ ]

DAILY [ ]

**NOTIFICATION OUT**

|            | BEEP   | E-MAIL | ALARM  |
|------------|--------|--------|--------|
| ALARM      | NO [ ] | NO [ ] | NO [ ] |
| MOTION     | NO [ ] | NO [ ] | NO [ ] |
| SENSOR     | [ ]    | [ ]    | [ ]    |
| PARAMETER  | [ ]    | [ ]    | [ ]    |
| VIDEO LOSS | NO [ ] | NO [ ] | NO [ ] |
| POWER LOSS | NO [ ] | NO [ ] | NO [ ] |
| OPERATION  | [ ]    | [ ]    | [ ]    |

SAVE & EXIT CLOSE

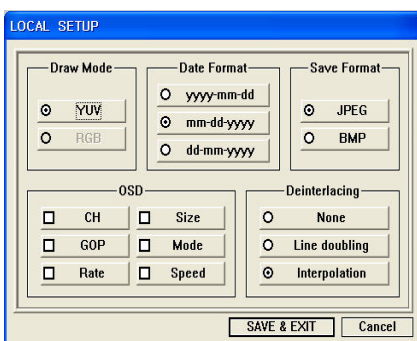
'Event Set' menu has

- 1) E-Mail registration
- 2) E-Mail report
- 3) Notification out.

The menu is same as local menu tree.



## Local setup



The detail (on the 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 among JPEG or BMP.

### 4) OSD

(1) CH1, CH2, ...

(2) Size:

Actual video size.

NTSC - 720x240, 360x240,

PAL - 720x288, 360x288

(3) GOP:

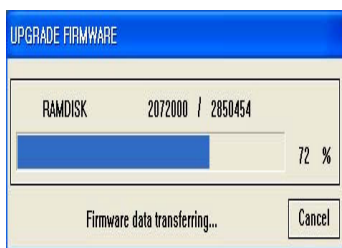
Total frame from I frame the next I frame.

(4) Mode:

Live (Live monitoring) /

Play (Remote play) /

## Firmware Upgrade

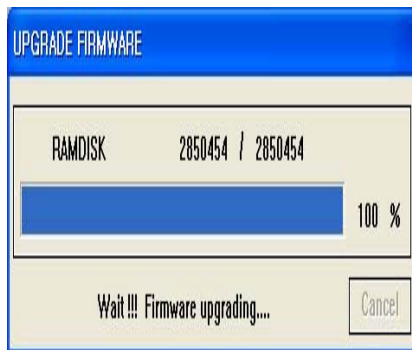


When user select 'Firmware Upgrade' menu, if higher version exists in C:\KWClient\Upgrade fold, 'New Program Found!' message will be shown.

If no higher version in C:\KWClient\Upgrade fold, 'New Program Not Found' message will be displayed.

When 'New Program found' message is displayed, please click 'Upgrade' button. If user clicks 'Cancel' button, 'Firmware Upgrade Fail' message is shown.

**Note:** For system stability, please "Turn off" the system Recording before upgrading DVR.



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



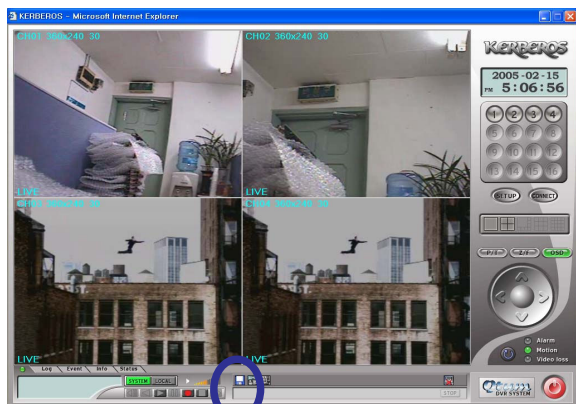
The local system should be re-booted.

## Crest CDR-2204N 4 Channel - Installation/ Operation Manual

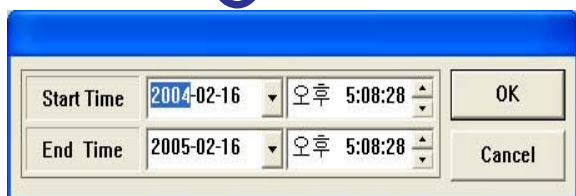
### Download, Image Save, Two-Way audio, Stop, Connect Download



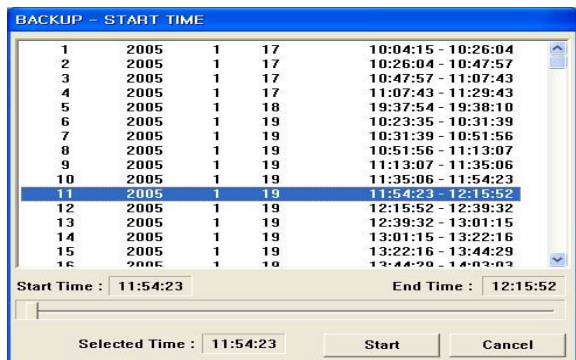
It is for transmitting the recorded data on HDD to client PC.



When 'download' button is pushed,



The user will select 'Start time' and 'End time' to download and click 'OK' button.

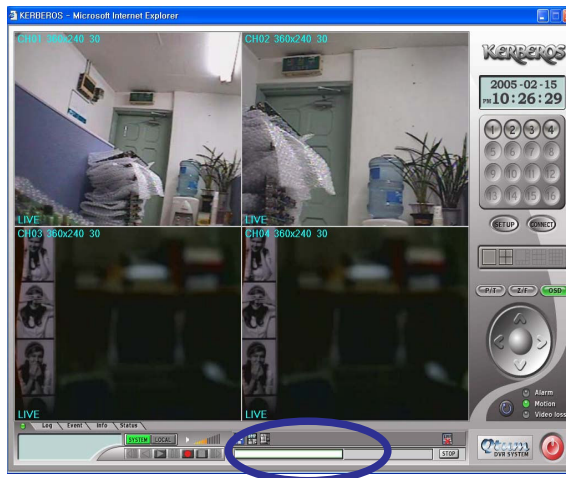


Select the start time among the list for 'Start Time'.



Select the end time among list for 'End Time'.

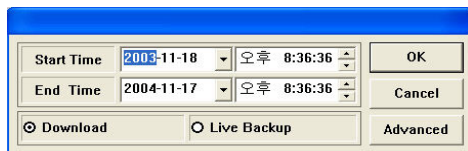
## Crest CDR-2204N 4 Channel - Installation/ Operation Manual



Processing bar will be shown besides and wait till downloading is finished.



When downloading is finished, push 'Local' button, which turns in green color. And, push play(□) button.

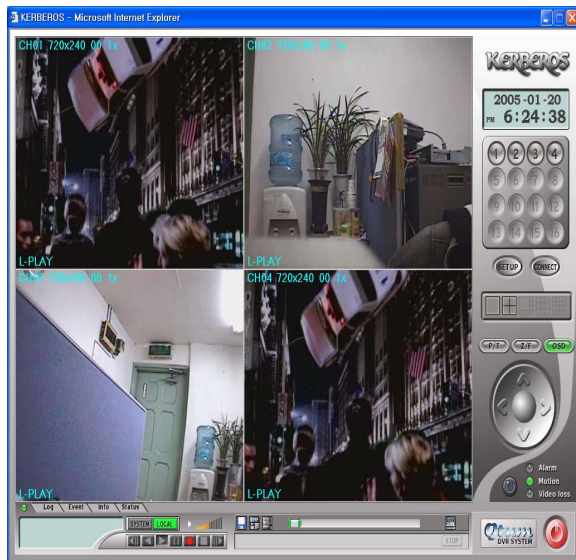


Select 'Start Time' & 'End Time' and check (□) 'Download'.

## Crest CDR-2204N 4 Channel - Installation/ Operation Manual



Then, the download list will be shown besides.  
Select the number that you want to play.



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

### Image Save



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

### Stop



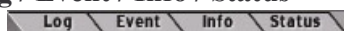
It is for stopping Downloading.

### Connect

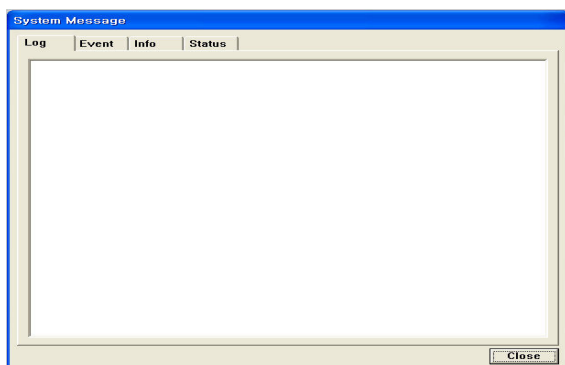
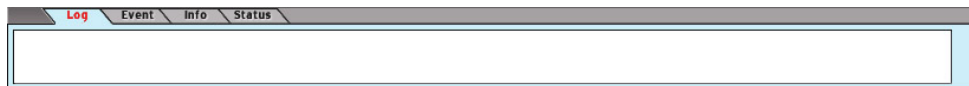


Re-connecting when access is failed

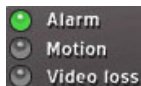
### Log / Event / Info / Status



The relevant information like Log, Event, Info, Status will be shown as below by clicking on the desired button.



### Event Clear

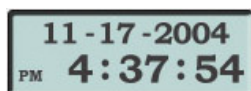


The relevant OSD turns to green color when DVR has an event like Alarm, Motion, Video loss.



Reset for event button (event clear)

### Timer



specified on

It 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 set according to date format the "local Setup".

### Exit



## **Q & A**

Q: The message " Can't display the page" is shown and failed to connect to DVR, though input the IP address or domain name on the Internet explorer window.

A: *DVR is out of work or 2) a problem on the network connection. Please check the DVR is working properly and, if it does, check the connection both DVR and PC.*

Q: Can't download the ActiveX Control.

A: *It does if "Windows XP Service Pack 2" is installed on the PC. Remove "service Pack 2" on the menu, "program add & removal" on the control panel or refer to Appendix 3.*

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

A: *The client program is working on the Window XP, 2000. Does not support Win.98, 98SE, ME.*

Q: Login box repeats appearing

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

Q: Can't change "Draw mode" on the menu, Local setup.

A: *It doesn't allow the change during the live monitoring and playback. If it required, please stop the live monitoring or playback. Then, you can change the "Draw mode".*

Q: Where is the saved file located?

A: *It locates at "C:|KWClient|Saved". The file can be played with Image viewer.*

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

A: *OSD is showing several status during playback. If the detail item is 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 .*

Q: Client program (internet explorer) was disappeared when I have entered new several web site.

A: *Since some web site is possible to remove the existing explorer , please disable " ☐ re-use the window in executing shortcut" under " Tools-> Internet Option-> advance( advance is located under "Search".*

## Appendix 1

### 1. HDD INSTALLATION

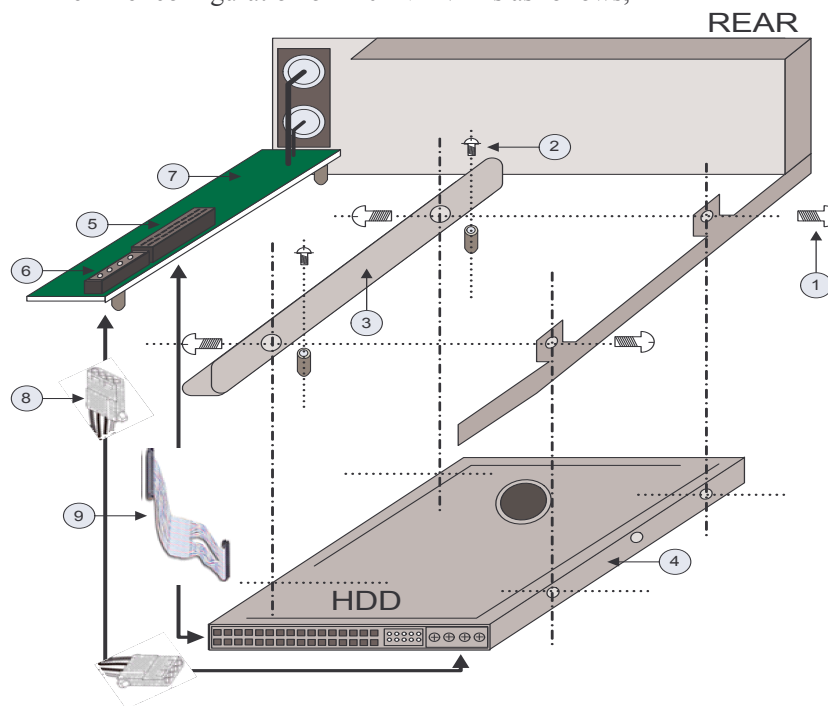
#### 1) Components

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 2204N 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
- ☐ 2204N 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

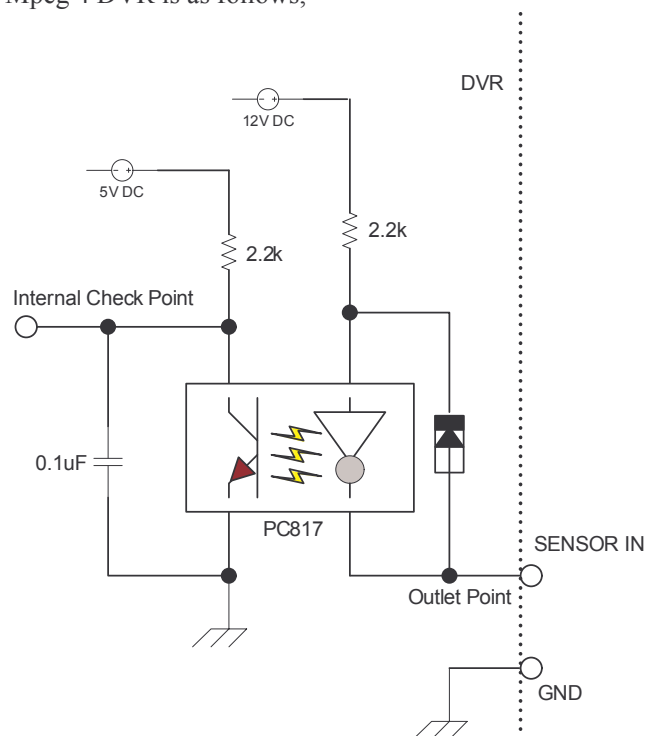
### SENSOR INSTALLATION

#### 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      | IFM    | 1           | A     |
|                         | Reverse voltage             | VR     | 6           | V     |
|                         | Power dissipation           | P      | 70          | mW    |
| Output                  | Collector-emitter voltage   | VCE    | 35          | V     |
|                         | Emitter-collector voltage   | VECO   | 6           | V     |
|                         | Collector current           | IC     | 50          | mA    |
|                         | Collector power dissipation | PC     | 150         | mW    |
| Total power dissipation |                             | Ptot   | 200         | mW    |
| *2Isolation voltage     |                             | Viso   | 5 000       | V rms |
| Operating temperature   |                             | Topr   | -30 to +100 | °C    |
| Storage temperature     |                             | Tstg   | -55 to +125 | °C    |
| *3Soldering temperature |                             | Tsol   | 260         | °C    |

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

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

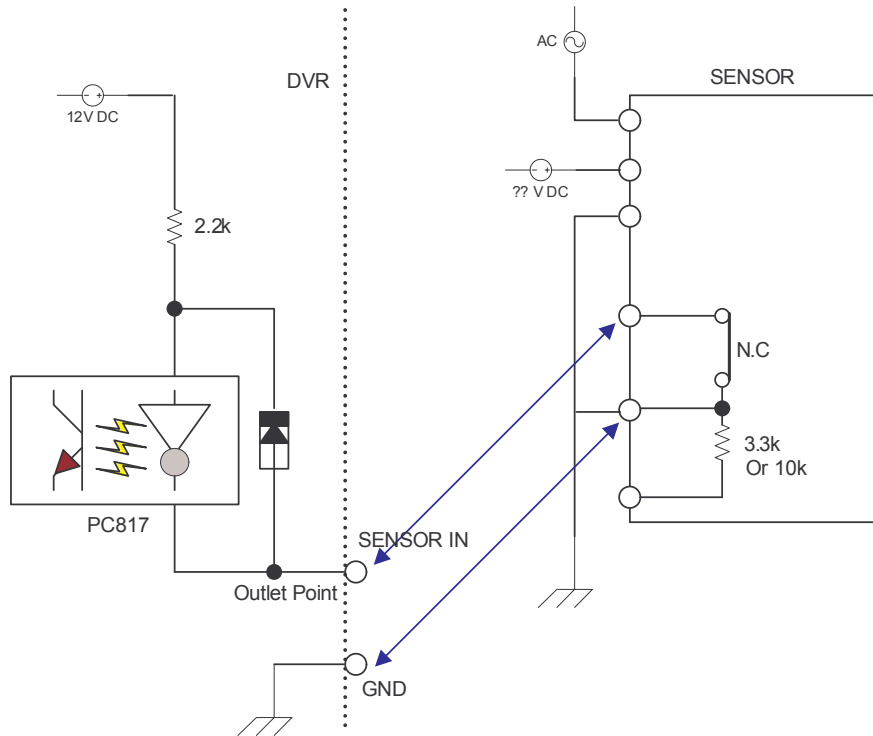
\*3 For 10 seconds

■ **Electro-optical Characteristics**

| Parameter                |                                      | Symbol          | Conditions                           | MIN.                 | TYP.             | MAX.             | Unit |
|--------------------------|--------------------------------------|-----------------|--------------------------------------|----------------------|------------------|------------------|------|
| Input                    | Forward voltage                      | VF              | IF = 20mA                            | -                    | 1.2              | 1.4              | V    |
|                          | Peak forward voltage                 | VF <sub>M</sub> | IFM = 0.5A                           | -                    | -                | 3.0              | V    |
|                          | Reverse current                      | IR              | VR = 4V                              | -                    | -                | 10               | μA   |
|                          | Terminal capacitance                 | Ct              | V = 0, f = 1kHz                      | -                    | 30               | 250              | pF   |
| Output                   | Collector dark current               | ICEO            | VCE = 20V                            | -                    | -                | 10 <sup>-7</sup> | A    |
| Transfer characteristics | *4Current transfer ratio             | CTR             | IF = 5mA, VCE = 5V                   | 50                   | -                | 600              | %    |
|                          | Collector-emitter saturation voltage | VCE(sat)        | IF = 20mA, IC = 1mA                  | -                    | 0.1              | 0.2              | V    |
|                          | Isolation resistance                 | RISO            | DC500V, 40 to 60% RH                 | 5 x 10 <sup>10</sup> | 10 <sup>11</sup> | -                | Ω    |
|                          | Floating capacitance                 | Cf              | V = 0, f = 1MHz                      | -                    | 0.6              | 1.0              | pF   |
|                          | Cut-off frequency                    | fc              | VCE = 5V, IC = 2mA, RL = 100 Ω, -3dB | -                    | 80               | -                | kHz  |
|                          | Response time                        | Rise time<br>tr | VCE = 2V, IC = 2mA, RL = 100 Ω       | -                    | 4                | 18               | μs   |
|                          |                                      | Fall time<br>tf |                                      | -                    | 3                | 18               | μs   |

### 3. SENSOR Install Processing

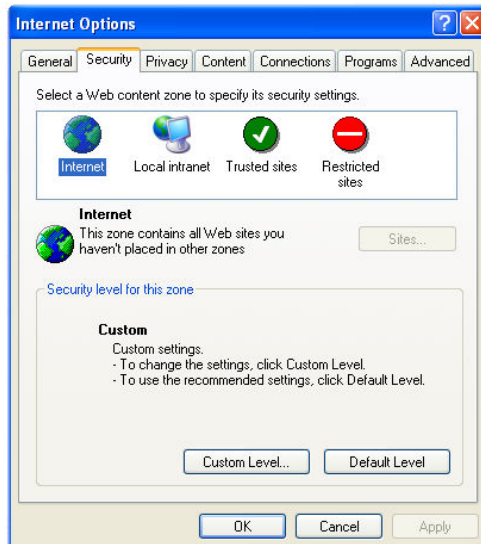
- Please refer the below block diagram.



## Appendix 3

### INSTALLING 2204N WEB CLIENT ON WINDOW XP SERVICE PACK 2.

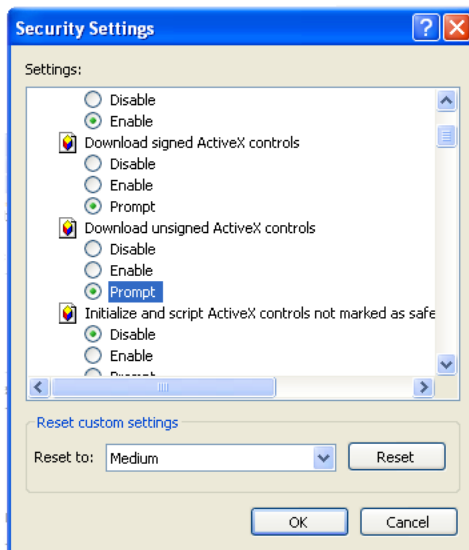
#### 1) Security Setup



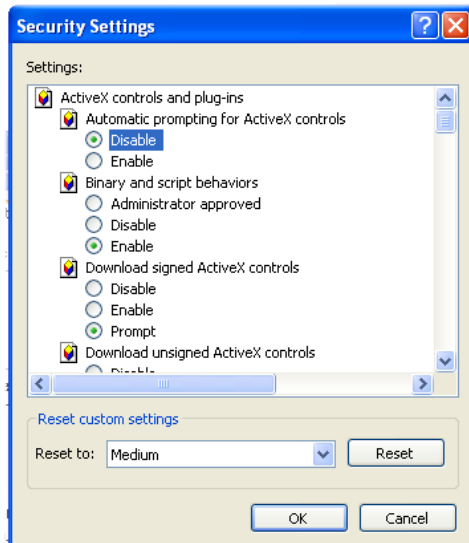
Tools-> Internet Options-> Security  
-> Select "Customer Level"



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

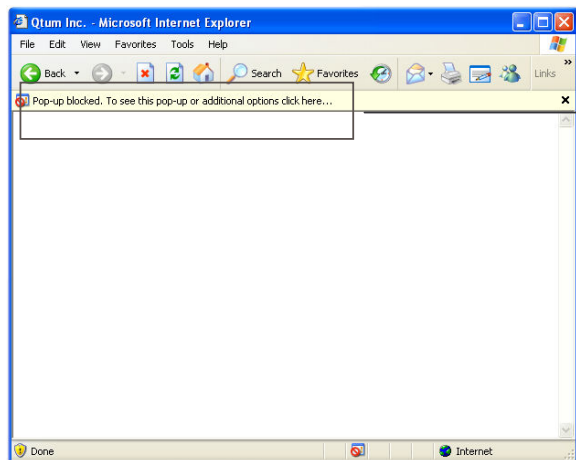


Select “ Download unsigned Active X controls”-> prompt

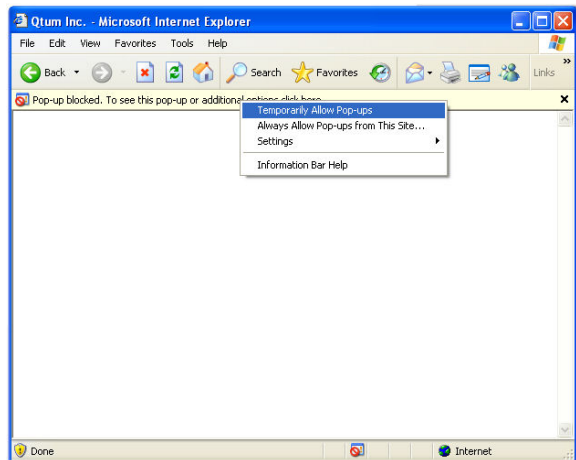


Select “ Automatic Prompting for Active X controls”-> disable

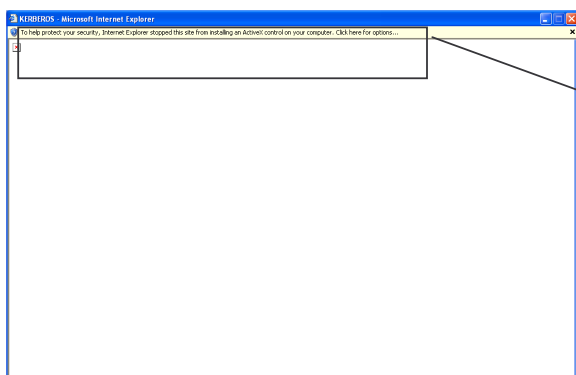
### 2) Connection



Click here as described

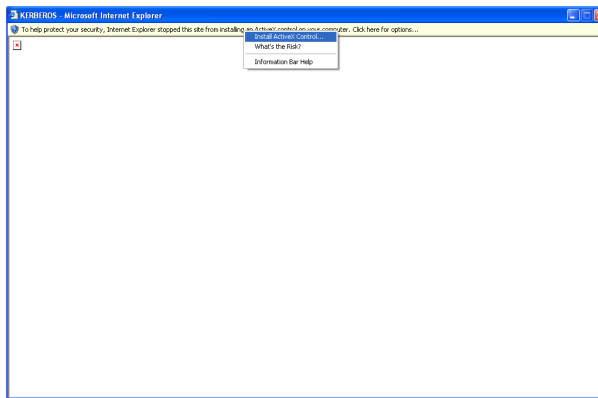


Select "Temporary Allow Pop-ups"

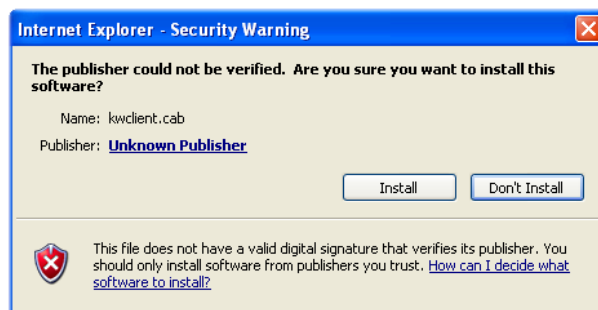


Click "To help protect security, Internet Explorer stopped this site from installing an Active X control on your computer. Click here for options..."

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Select "Install Active X Control "



Select "Install" and then 'Log-In' box will be shown.

## Appendix 4

### 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 “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 is 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](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 5

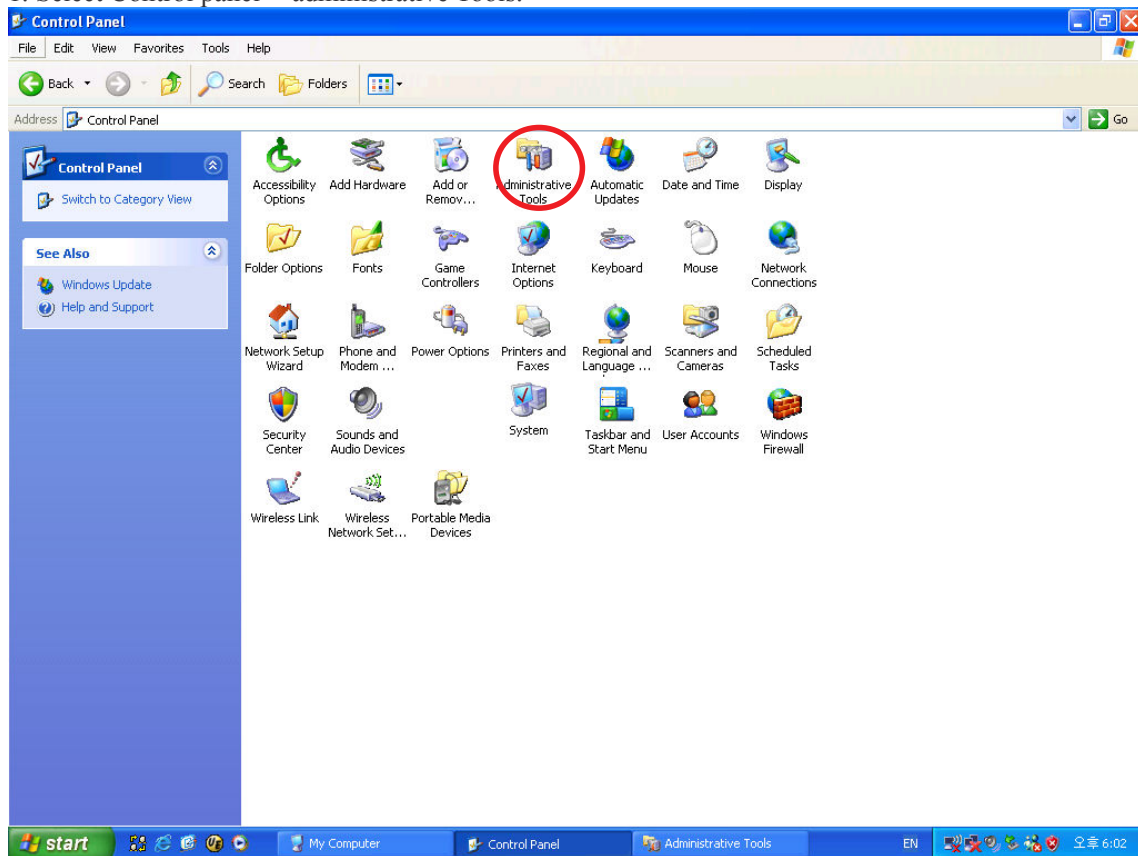
### MAKING PARTITION ON EXTERNAL USB HDD

**\*For HDD – must be done on ‘Windows’ based computer.**

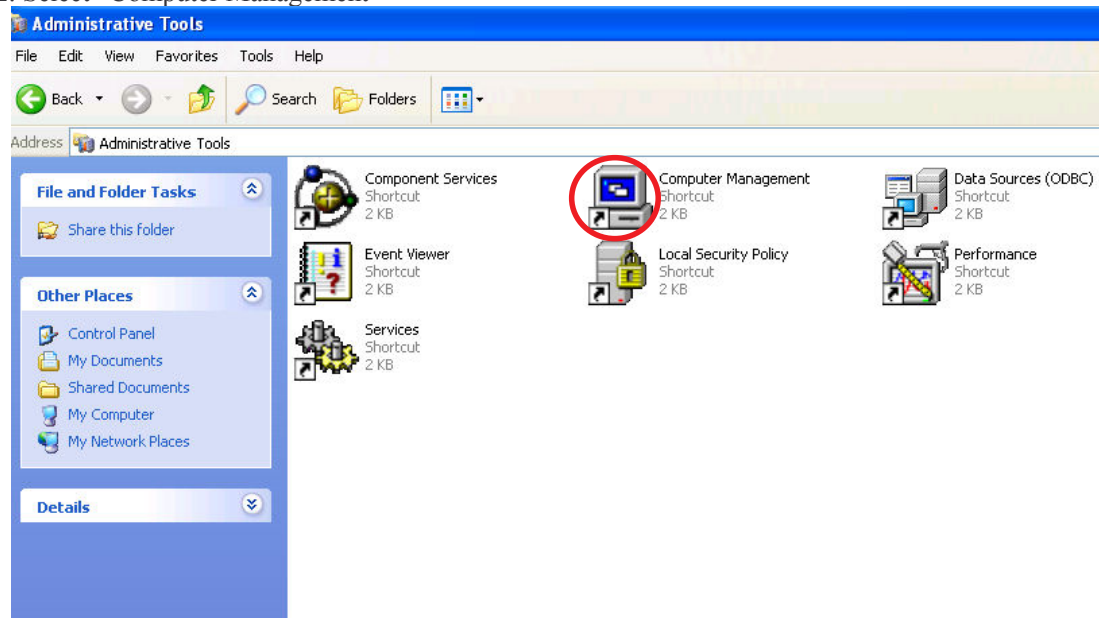
**\*Flash drive can be done on the unit.**

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.

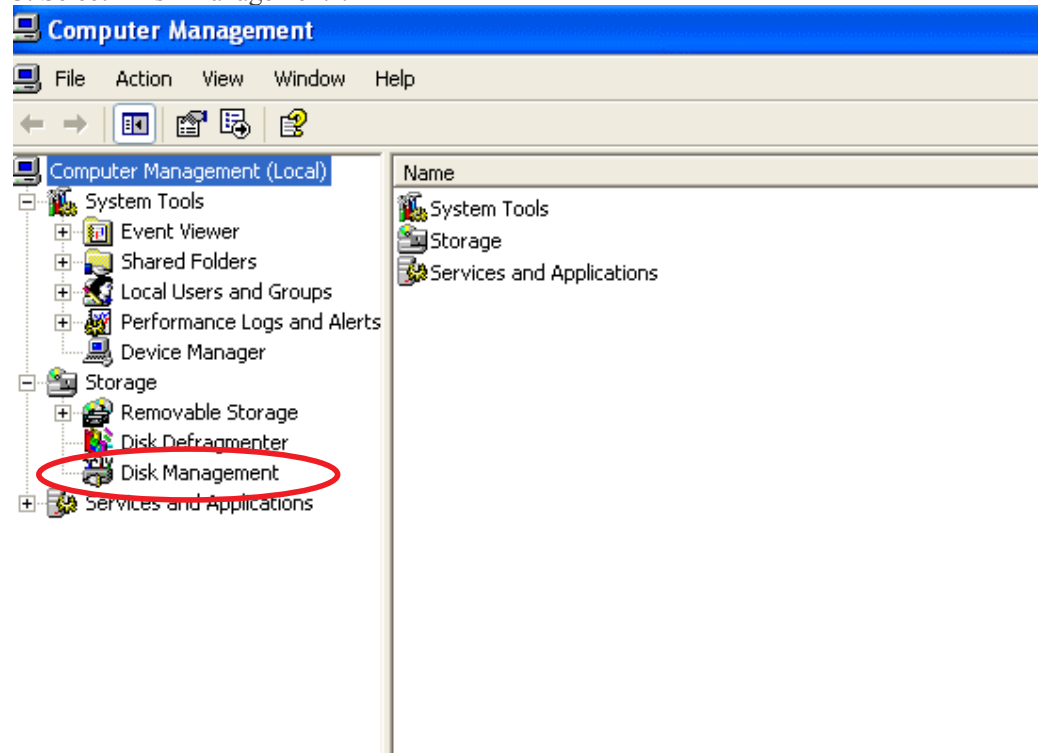
1. Select Control panel-> administrative Tools.



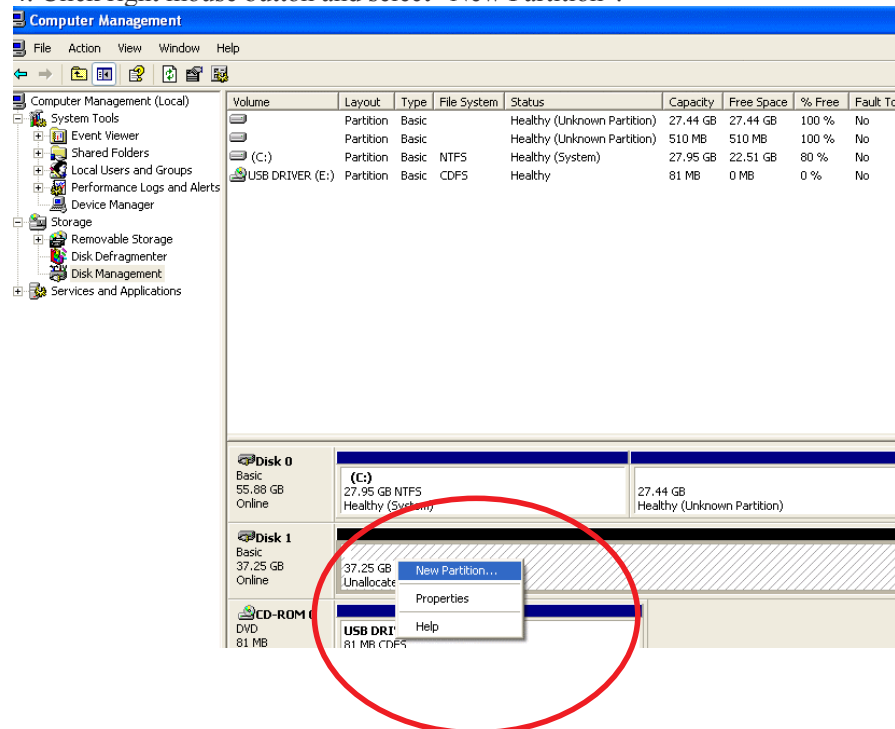
### 2. Select “Computer Management”



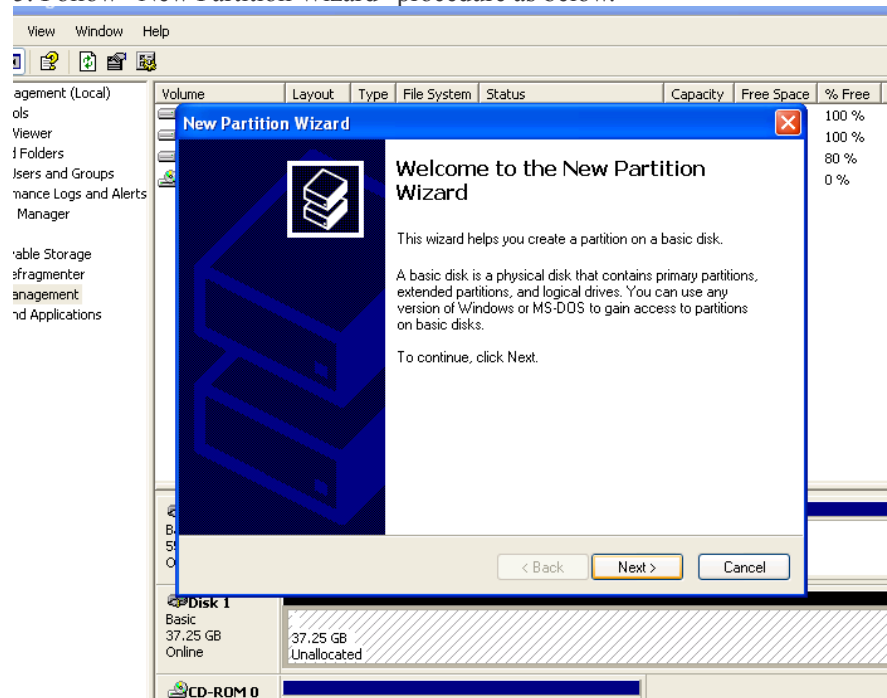
### 3. Select “Disk Management”.



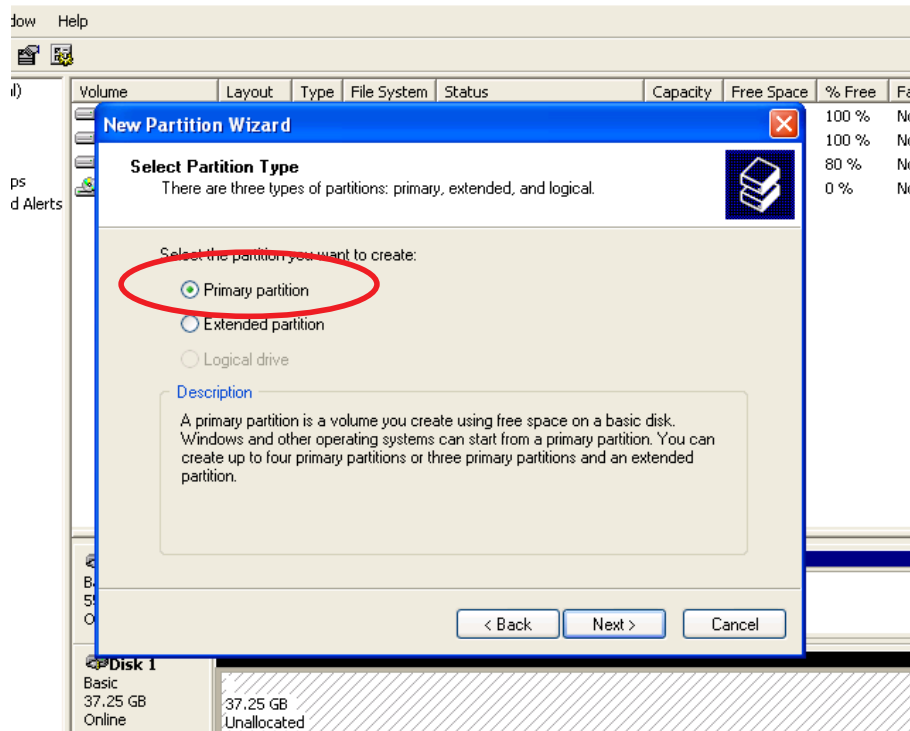
4. Click right mouse button and select “New Partition”.



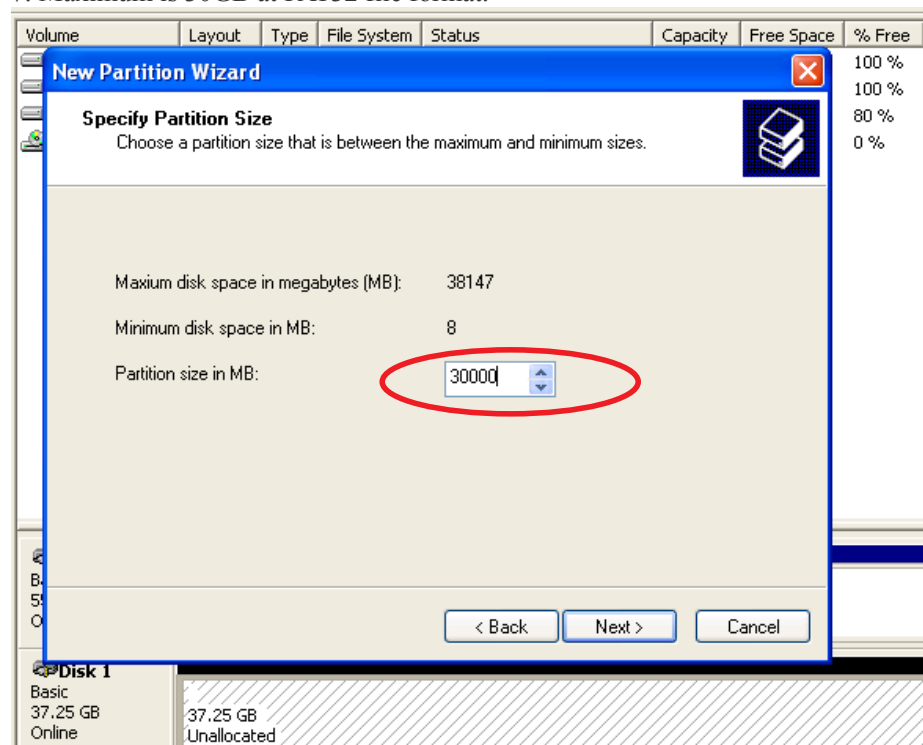
5. Follow “New Partition Wizard” procedure as below.



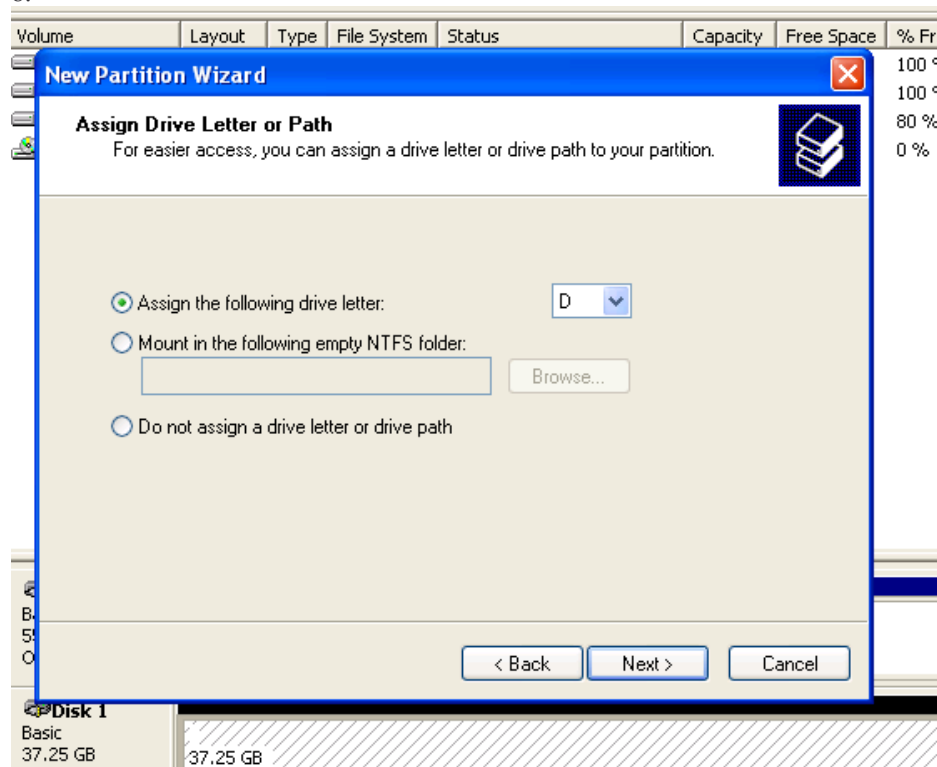
6.



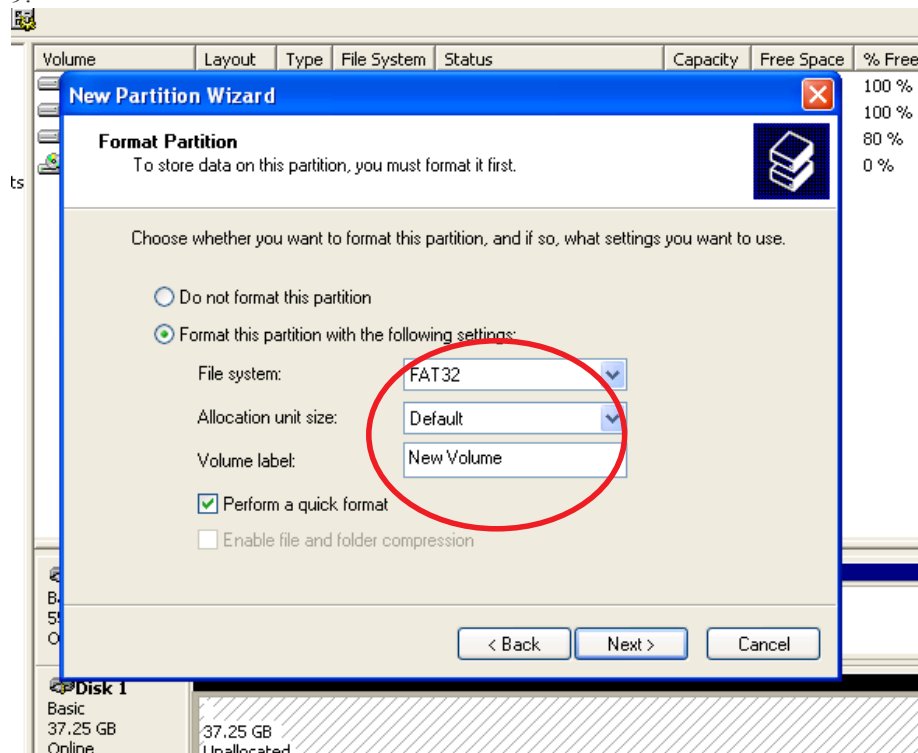
7. Maximum is 30GB at FAT32 file format.



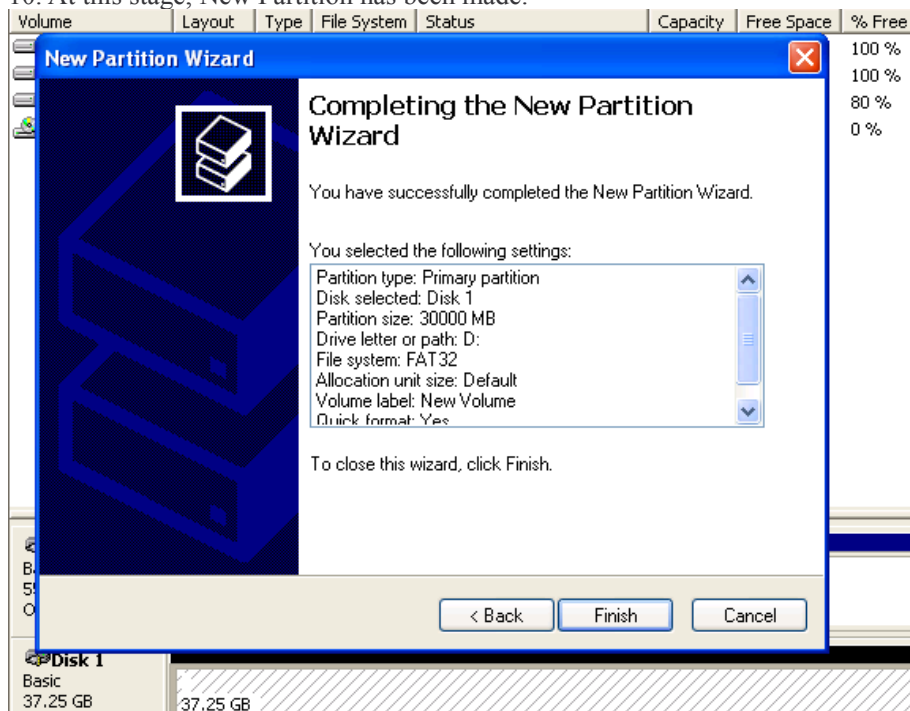
8.



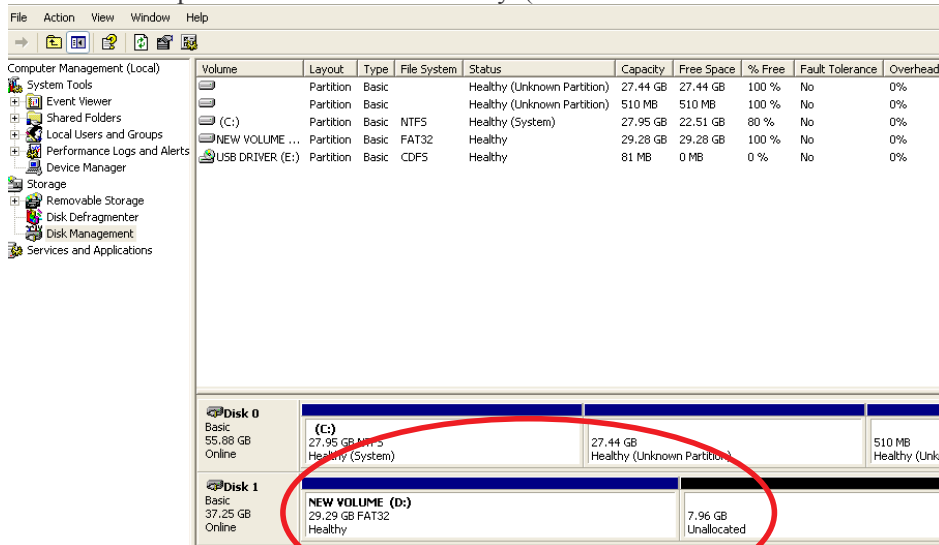
9.



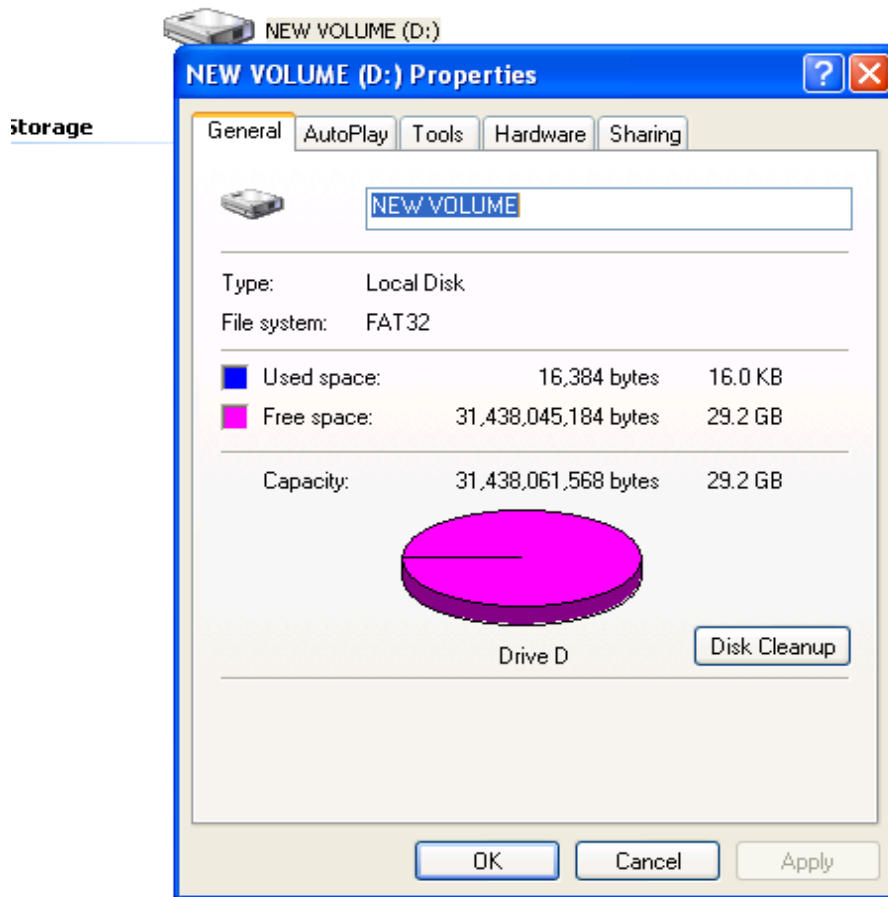
10. At this stage, New Partition has been made.



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



### 12. Check New Partition was created correctly



## **Appendix 6**

### SPECIFICATION

|                       |                                               |
|-----------------------|-----------------------------------------------|
| Video Inputs          | 4 BNC                                         |
| Video Outputs         | 1 BNC, 1 S-Video                              |
| Audio Inputs          | 1 RCA                                         |
| Audio Outputs         | 1 RCA                                         |
| Sensor Inputs         | 4 pairs, push-in                              |
| Alarm Output          | 1 push-in, TTL Level                          |
| Operating System      | Embedded Linux                                |
| Video Compression     | Mpeg 4                                        |
| Audio Compression     | ADPCM                                         |
| Recording Speed       | Max.120ips (NTSC), Max.100ips (PAL)           |
| Recording Resolution  | 360x240/720x240(NTSC)<br>360X288/720X288(PAL) |
| Network Interface     | Ethernet                                      |
| Network Protocol      | TCP/IP, HTTP, DHCP, PPPOE                     |
| Back Up               | USB 2.0(USB Memory stick)                     |
| HDD                   | Western Digital 80, 120, 250GB(Caviar Series) |
| Input Voltage         | 100~240V, 50/60Hz                             |
| Power Consumption     | 36 Watts                                      |
| Operating Temperature | 5~40℃(41~104F)                                |
| Relative Humidity     | Maximum 80% non-considering                   |
| Weight                | 5Kg                                           |
| Dimensions            | 350(W)x250(D)x70(H)mm                         |

Design and product specifications subject to change without notice