MPEG4 DIGITAL VIDEO RECORDER

User's Manual

MPEG COMPRESSION | 4 CHANNEL | 8/16 CHANNEL | USB | REMOTE CONTROL | HDD HARD DISK DRIVE | AUDIO REC | VGA VGA OUTPUT | DVD R/RW | COMPACT disc ReWritable

Thank you for using our product.

1. This is user's manual for High-end 4CH, 8CH and 16CH DVR (Digital Video Recorder).

2. This manual contains product specification and introduction, installation guide, operating guide and other necessary matters for easy understanding. Users should read this user's manual carefully for proper use.

3. Contents in this manual may be changed according to the specification change and feature improvement without any notification.

4. This user's manual shall never be copied without prior agreement and violating this may be a reason for legal punishment on piracy.

5. If there is any incorrect or insufficient content in this user's manual, notify it to Customer Support Center.

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Contents

CH1. Product Introduction

1-1. Product Contents

After removing packing materials of this product, check whether all following contents are included.

Main Body (DVR):
This converts the analog video and audio signal to the digital signal and saves on HDD.

Adapter:
This 12V adapter supplies power to the product.

Power Cable:
This connect the adapter and the power source.

Program CD:
This contains the User's manual and Client Program for DVR.

User's Manual:
This is a manual book.

Remote Controller:
This is an IR remote controller for convenience.

Battery:
These are 2(two) AA size battery for the remote controller.

1-2. Specifications

<4CH>

Image Input/Output : NTSC / PAL

Recording Speed :

      NTSC - 1~123fps(based on 360X240)

      PAL   - 1~103fps(based on 360X288)

Compression Method : MPEG4 Technology

Recording Time : 48~17,780 hours (160G)

Power : DC12V, 4.5A (DC adapter)

Power Consumption : 34W

External Terminal : Video Input - BNC 4CH

                     Video Output - BNC 1CH, S-Video 1CH, VGA 1CH(optional)

                     Spot Out- BNC 1CH

                     Loop Out - Loop Through 4CH

                     Audio Input - RCA 4CH

                     Audio Output - RCA 1CH

                     Sensor Input - Terminal Block 4CH (Contact, TTL)

                     Sensor Output - Terminal Block 4CH (Dry Contact)

                     LAN Communication - RJ45 Port

                     Serial Communication - DSUB9(RS-232C)

                                       Terminal Block(RS485)

                                       USB 1.1 Type A

Temperature : 5~40℃(30~110 F)

Humidity : 20%~80%(Non-condensing)

Size : 277 (W) × 315 (D) × 80 (H) mm

Weight : Lighter than 4.5Kg(Supplements and Packing Materials Excluded)

Supplements : Adapter 1

               Power Cable 1

               Program CD 1

               Remote Controller 1

               Battery 2

<8CH / 16CH>

Image Input/Output : NTSC / PAL

Recording Speed :

      NTSC -1~127(8ch), 1~135fps(16ch) : based on 360X240

      PAL - 1~107(8ch), 1~115fps(16ch) : based on 360X288

Compression Method : MPEG4 Technology

Recording Time : 44~17,780 hours (160G, 16ch)

              47~17,780 hours (160G, 8ch)

Power : DC12V, 8A (DC adapter)

Power Consumption : 96W

External Terminal : Video Input - BNC 8CH / 16CH

                 Video Output - BNC 1CH, S-Video 1CH, VGA 1CH

                 Spot Out- BNC 1CH

                 Loop Out - Loop Through 8CH / 16CH

                 Audio Input - RCA 4CH

                 Audio Output - RCA 1CH

                 Sensor Input - Terminal Block 8CH (Contact, TTL) / 16CH

                        (Contact, TTL)

                 Sensor Output - Terminal Block 8CH (Dry Contact 4CH) /

                        12CH (Dry Contact 4CH)

                 LAN Communication - RJ45 Port

                 Serial Communication - DSUB9(RS-232C)

                                   Terminal Block(RS485)

                                     USB 1.1 Type A

Temperature : 5~40℃(30~110 F)

Humidity : 20%~80%(Non-condensing)

Size : 430 (W) × 420 (D) × 88 (H) mm

Weight : Lighter than 5.5Kg(Supplements and Packing Materials Excluded)

Supplements : Adapter 1

             Power Cable 1

             Program CD 1

             Remote Controller 1

             Battery 2

1-3. Product Characteristics

1) High quality picture
This enables recording and playing high quality digital image based on MPEG4 compression method.

2) High reliability
With Embedded hardware and software design, this maintains higher product reliability compared to common PC type products.

3) Simple usage
This allows users to use it conveniently by placing control buttons similar to existing ones on VCR, and users can easily learn the usage.

4) Triplex System
Triplex System allows recording, backup, networking and playback simultaneously.

5) Selectable recording setup
For recording methods, users can select the frame rate, resolution and video quality individually in order to be appropriate for user's environment.

6) Remote monitoring
With using exclusive line or Internet network, you can search or monitor recorded images remotely by installing exclusive client program on PC.

7) Backup
You can backup with USB, CD-RW and DVD-RW.

8) Audio recording
You can record four sound inputs simultaneously. Moreover, you can listen to the sound in search and live monitoring and play mode.

9) Various recording methods
This provides convenient use with manual recording, recording by dates and days, hourly schedule recording, sensor and motion detection event recording and others to enable unmanned monitoring.

10) Various total monitoring features
You can use overall and economical security system through various sensor inputs and contact output control.

11) Display information in easy-to-understand information method
This enhanced convenience of user by displaying information (date, time, recording method, recording frame number, HDD capacity and others) in monitoring, recording and playing mode in easy-to-understand way.

12) Spot monitoring
Spot out can be enable to monitor sequentially in other place.

13) P/T/Z control
By built in RS485, various P/T/Z cameras can be used.

14) Individual resolution setting
You can record in each channel by choosing 360X240, 720X240 and 720X480 individually.

15) Separate video transmission engine
DVR can send 60 fps (based on CIF) regardless of the local recording and viewing setup regardless with recording setup.

16) Web browser support
You can monitor and playback the video and control the PTZ camera by internet explorer.

17) Built in S.M.A.R.T.
You can automatically check the health of the hard disk drives.

18) Text inserter
You can operate with the POS and ATM.
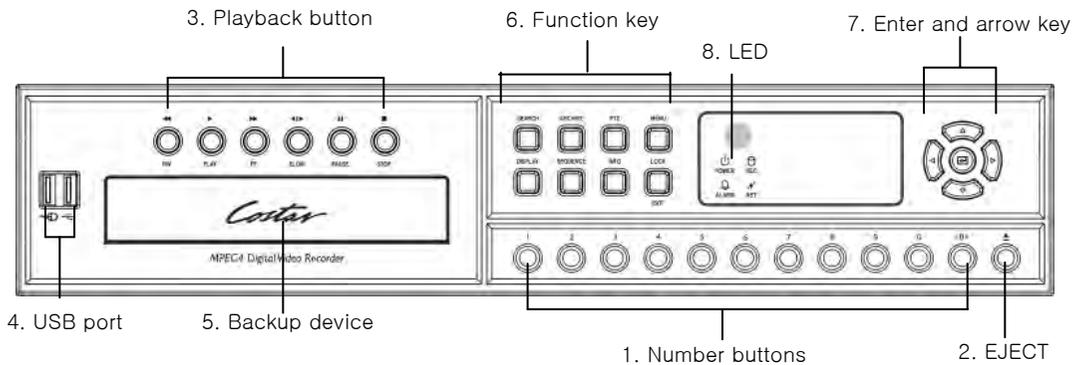
19) Mirroring
If you install more than two HDDs, you can use the second HDD for backup for maximum fault tolerance.

20) Language pack
Basically DVR has 5 language set, furthermore you can choose the language set if you want.

1-4. Name of Each Part

[Front Panel]

3. Playback button   6. Function key   8. LED   7. Enter and arrow key

4. USB port   5. Backup device   1. Number buttons   2. EJECT

1. Number buttons : If you push this button, it will be changed to full screen in live
    viewing or playback
  (※ In menu and password setting, it is automatically converted to number buttons)
2. EJECT : It will open or close the backup drive such as CD-RW or DVD.
3. Playback buttons : It will be used on playback. If you push these buttons in live
    mode, it will be automatically changed to the Instant Play mode. 'Stop' button
    changes from the play mode to the live mode.
4. USB ports : This 1 USB port is for mouse and USB devices. You should
    connect correctly the USB devices and mouse as picture directed.
5. Backup device : You can use the versatile backup devices such as CD-RW and
    DVD-RW.
6. Function keys
 1) SEARCH : It will change to the playback mode from the live mode.
 2) ARCHIVE : It will move to the backup screen from the live or play mode.
 3) PTZ : It will change to the pan, tilt and zoom control mode from the live mode.
 4) MENU : It will move to the setup screen from the live mode.
 5) DISPLAY : It will change the screen splitting sequentially from 1, 4, 6, 9, 13 and
    16. It can be adapted both live and play mode.
 6) SEQUENCE : It will change to switching mode except 16 splitting.
 7) INFO : It will turn it on and off the GUI and OSD sequentially.
 8) EXIT(LOCK) : If you want move to the upper menu or exit without saving, push
    this button. On playback, it will disappear the search list for the better
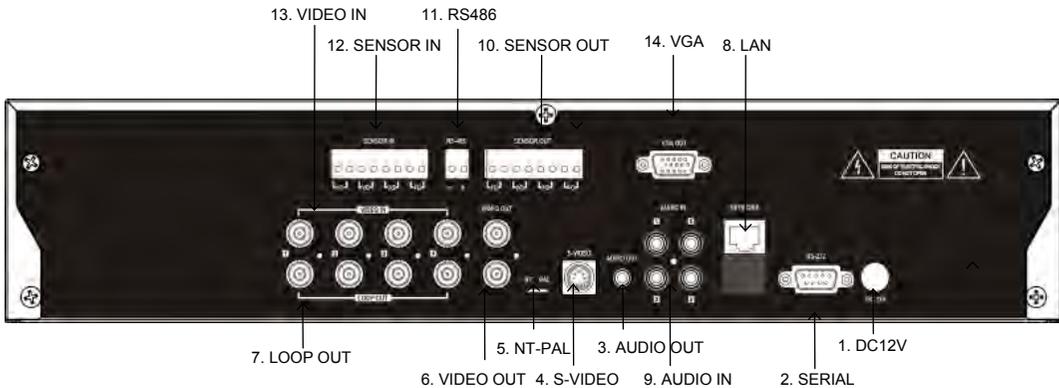   viewing. On live viewing, it performs the system lock.
7. ARROW, ENTER : This button is used to change settings for the product in
    MENU Mode or used in Search Mode.
8. Status LED
    POWER : Blue. Power indicator.
    RECORD : Red. It will be lit on while recording.
    NETWORK : Green. It will be lit on while connecting the network.
    ALARM : Red. It will be lit on when the events happen.
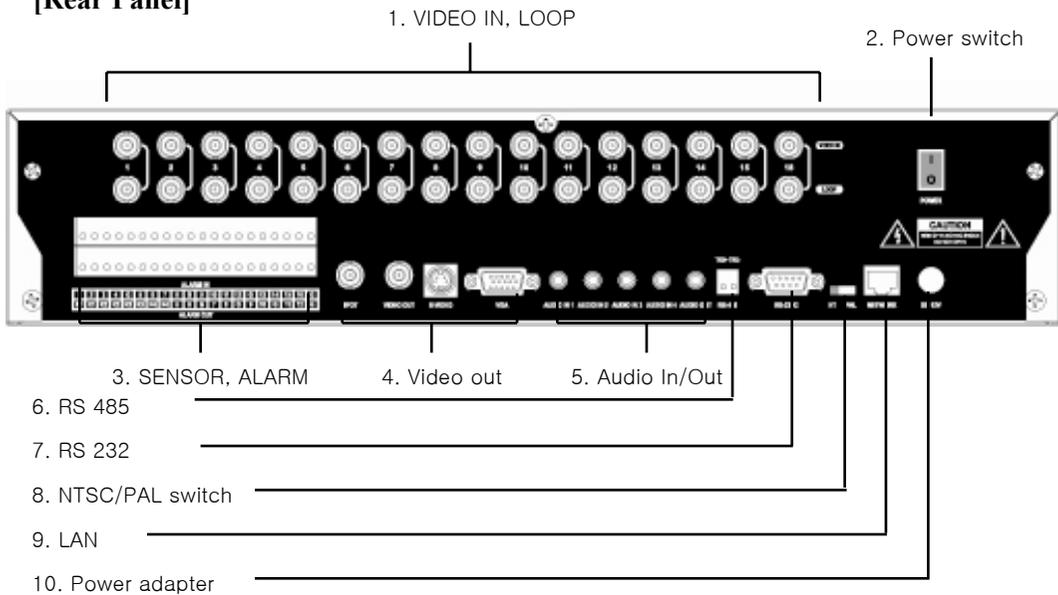
※ *For more details, refer to [CH 3. How to Use]*

[Rear Panel] 4CH

13. VIDEO IN   11. RS486
12. SENSOR IN   10. SENSOR OUT   14. VGA   8. LAN

7. LOOP OUT   5. NT-PAL   3. AUDIO OUT   1. DC12V
6. VIDEO OUT 4. S-VIDEO 9. AUDIO IN   2. SERIAL

1. DC Power : DC12V 8A

2. Serial Port: This is Serial communication(RS-232C) cable connection terminal.

3. Audio Out: RCA audio out terminal.

4. S-Video Out : Output for S-Video monitor. Normally you can get clearer image than BNC.

5. NTSC/PAL select switch : Choose the proper position.

6. Video Out : For main monitor.

7. Loop Out   : This sends the images from the cameras the other devices.

8. LAN Port: This is LAN cable connection terminal.

9. Audio In: RCA audio in terminals. You can record four channels at the same time.

10. Sensor out : This terminal blocks connect external electric devices to the product (Warning Lamp and others). (4 dry contacts)

11. RS485 port : For control the pan and tile cameras. Make sure that the polarity.

12. Sensor In : This terminal connects external sensor to the product.

13. Video In: This receives images from cameras and sends them to monitors.

14. VGA port: video output for VGA display

※ *For more details, refer to [CH 2. Installation Method and Cautions].*

[Rear Panel]

1. VIDEO IN, LOOP

2. Power switch

3. SENSOR, ALARM   4. Video out   5. Audio In/Out

6. RS 485

7. RS 232

8. NTSC/PAL switch

9. LAN

10. Power adapter

1. VIDEO IN : This receives images from cameras and sends them to monitors.
   LOOP : This sends the images from the cameras to the other devices.

2. POWER : This turn it on and off the main power.

3. SENSOR IN : This terminal connects external sensor to the product.
   ALARM OUT : This terminal blocks connect external electric devices to the
        product (Warning Lamp and others). The first 8 terminals are related with dry
        contacts (4 relays).

4. VIDEO OUT : There are four kinds of video out such as composite, spot, S-
        VIDEO, and analog RGB(VGA).
5. AUDIO IN : RCA audio in terminals.
                You can record four channels at the same time.
   AUDIO OUT : RCA audio out terminal.

6. RS485 port : For control the pan and tile cameras. Make sure that the polarity.
7. SERIAL : This is Serial communication(RS232C) cable connection terminal.
8. NTSC/PAL select switch : Choose the proper position along your video format.
9. LAN Port: This is LAN cable connection terminal.
10. DC Power : DC12V 8A.
※ *For more details, refer to [CH 2. Installation Method and Cautions].*

CH2. Installation Method and Cautions

2-1. Cautions

- Avoid installing the product where there are direct rays or it is hot by locating near from heat generator. (May cause fire)

- Do not put vase, flowerpot, cup, cosmetics, drug, and anything the contain water on product. (May cause fire or electric shock, and it may injure people by falling)

- Do not insert or drop any metal object (coin, hair pin) or flammable object (match, paper) into air hole. (May cause fire or electric shock)

- Do not put any heavy object on it. (May injure people by being fell or destroyed.)

- Put power plug surely not to be moved. (If not, this may cause fire.)

- Unplug power plug and antenna when there are thunders and lightening. (May cause fire.)

- For cleaning the product, wipe surface with dry towel. Using chemical agent or cleaner may change the color and unpeel paint. Do not put several plugs at same time. (May cause electric shock.) If there is smoke or strange smell, stop operation. In this case, turn the power off and unplug it, and then contact our service center. (If you keep using it, this may cause fire or electric shock.)

- Do not unplug by pulling cord. (If cord is damaged, it may cause fire or electric shock.)

- Do not plug or unplug with wet hands. (May cause electric shock.)

- Keep the power cord untwisted. (May cause fire or electric shock.)

- Use proper adapter. (Using too much electric power may cause fire or electric shock.)

- Do not install it at where exposed to rain and wind and water drop. (May cause   fire, electric shock and transformation.)

- Keep away from fire. (May cause fire.)

-Do not disassemble or remodel on your own. (May cause malfunction or electric shock.)

- Do not put next to flammable materials like flammable spray. (May cause fire.)

- Do not install it at a place with too much dirt. (May cause fire.)

- Do not install it on unstable places like shaking table and inclined place or shaking place. (May injure users by falling down or being upside down.)

- Do not put an heavy object on power cord or avoid it from being pressed by the device. (May cause fire or electric shock.)

- In case of using extension cord, do not use several devices at same time. (May cause fire with abnormal heating of extension.)

- When there are dirt on power plug pin or power outlet, clean it nicely. (May cause fire.)

-Do not damage on power cord or plug, and bend or twist or pull too much, and   put it between other objects or heat. If power outlet insertion part is not tight, do not use it. (May cause fire or electric shock.)

-Do not drop or give a shock to the product. (May injure people or cause   malfunction.)

- Do not touch power adaptor or signal controller. (May cause electric shock.)

- Do not put any object too close to block cooling fan. (May cause fire.)

- In case of exchanging batteries with improper type, there might be danger of explosion.

- For used batteries, throw away separately from other garbage.

- When you take out batteries, avoid children from eating them by mistake. Keep them away from children. (If a child ate them, contact a doctor right away.)

Note :
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

This device complies with the part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operations.

FCC Warning :
This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

CE Warning : This is a Class A product. In a domestic environment this may cause radio interference in which case the user may be required to take adequate measures.

This product has obtained EMI registration.

2-2 Product Installation

This product may be composed of camera and monitor in default, and additionally the sensor, microphone, speaker and PC for network can be connected if necessary.

2-2-1. Power Connection
1) Connect adapter cable to power connection terminal at rear side.
2) Input AC power to the adapter. (free voltage from 100V to 240V, 50/60Hz)

※ You must operate it at the rated voltage instructed on the user's manual. In case power higher than the rated voltage is supplied, it may cause damages on product.

2-2-2. Connecting External Device (4CH)
※ Connect it when power of the product is off.
※ Read through user's manual for the device you are connecting carefully.

1) How to Connect External Video/Audio Device
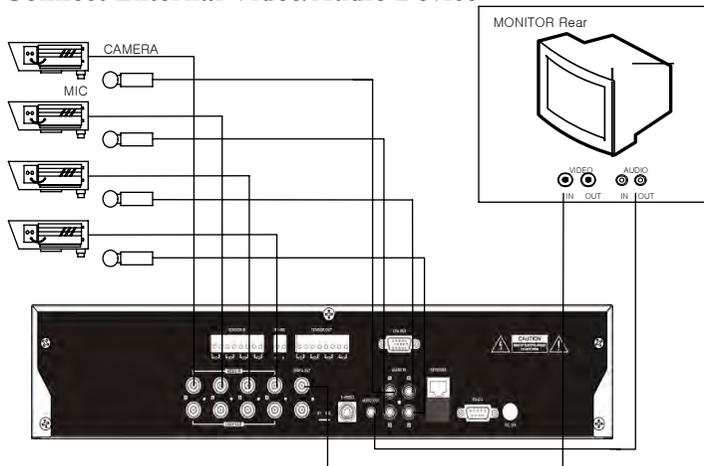
Connect cameras to VIDEO IN by channels.
Connect microphone (AMP) to AUDIO IN by channels.
Connect VIDEO OUT to VIDEO IN of monitor.
Connect AUDIO OUT to AUDIO IN of monitor.

For Loop Out terminal at rear side, you can use it by connecting to the other external device such as matrix which needs the camera input.

2) How to connect external sensor
Sensor terminal is composed of 4 input channels and 4 output channels. As shown at below, if sensor output is TTL signal, connect SIGNAL line to left and GND line to right by input channels.

*What are N/O (Normal Open), N/C (Normal Close)?

   This is a terminology explaining operation method of Sensor. N/O Sensor is that contact maintains Open status in normal condition and contact is converted to Close status with beginning operation. Oppositely, N/C Sensor operates while contact maintaining Close status converts to Open status.
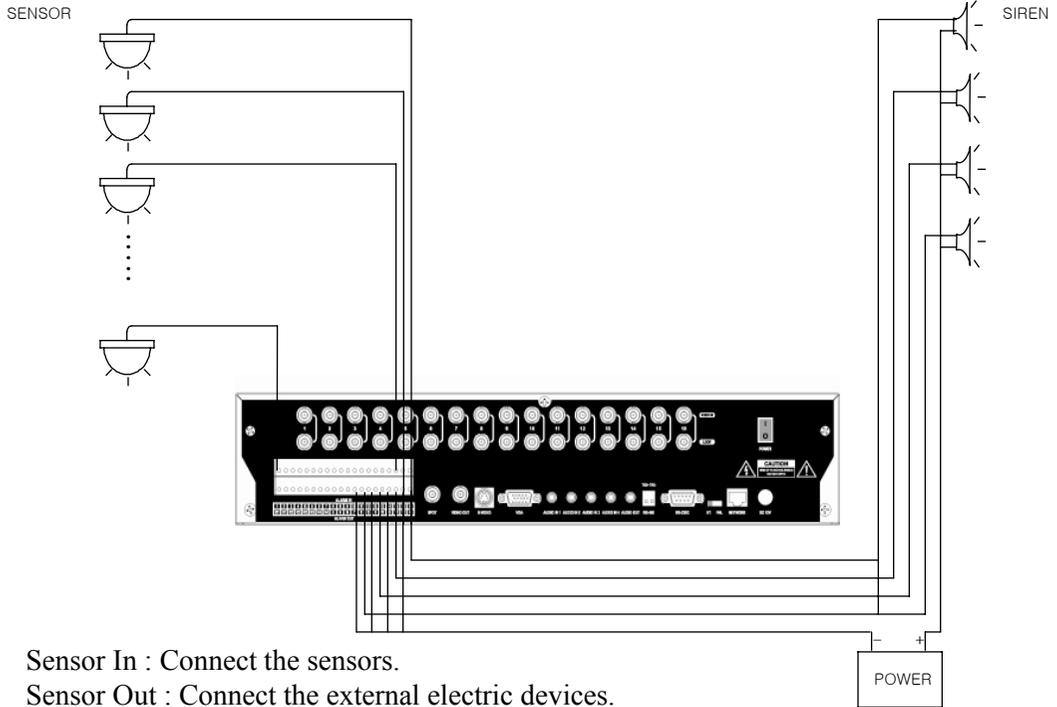
SENSOR   SIREN

POWER

Sensor In : Connect the sensors.
Sensor Out : Connect the external electric devices.

3) Connecting with PC using LAN cable

If you want to connect DVR to PC directly, use Cross Cable(1), and if you want to use HUB, use Direct Cable(2).

*Hub : This is a device connecting one office to devices located near with using
          cable when you organize LAN
*Direct Cable : This is standard UTP cable used for communication among
                 devices through Hub and others when you organize LAN
*Cross Cable : This is a cable that has changed internal array of standard UTP
               Cable for direct communication among devices not using connection
               devices like Hub when you organize LAN

PC

① Cross Cable

HUB

② Direct Cable

4) Connection Using PTZ camera

In case of using pan and tilt cameras, connect PAN/TILT DRIVE to product as shown at following figure.

5) Connection with POS or ATM

In case of operating with POS or ATM , connect POS or ATM to product using the expanded serial cable as shown at following figure. Refer to appendix A in detail.

※ *For more details, refer to [Appendix A How to Connect POS].*

• **Attention**
This DVR has one RS232 port. So you cannot use the POS and DVR controller simultaneously.

6) Installing Hard disk drive

In case of installing the hard disk drive, open the upper case and install the hard disk drive on the hard bracket. If you use the one hard disk drive, it should be set the IDE1 with master setting. If you use the 2 hard disk drives, it also should be set the IDE1 with 1 master and 1 slave setting. Remember that the main power should be off to install the hard disk drive. If you have any trouble, please contact the technical support.

7) Installing backup drive
You can use the DVD-RW or CD-RW for backup. In this case you can install just one hard disk drive. To install the backup drive, open the top cover and install the backup drive on the bracket. It should be connected to IDE 2 with slave setting.

8) Installing DVR Controller
You can use the DVR controller with serial communication. If you install the DVR controller, you can directly control the DVR using control keyboard.

※ *For more details, refer to [Appendix B How to Connect DVR Controller].*

• **Attention**
This DVR has one RS232 port. So you cannot use the POS and DVR controller simultaneously.

2-2-3. Connecting External Device(8 and 16 CH)
※ Connect it when power of the product is off.
※ Read through user's manual for the device you are connecting carefully.

1) How to Connect External Video/Audio Device
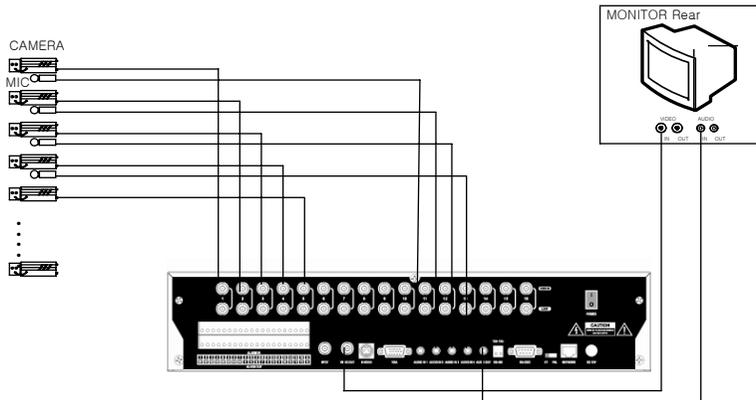
Connect cameras to VIDEO IN by channels.
Connect microphone (AMP) to AUDIO IN by channels.
Connect VIDEO OUT to VIDEO IN of monitor.
Connect AUDIO OUT to AUDIO IN of monitor.

For Loop Out terminal at rear side, you can use it by connecting to the other external device such as matrix which needs the camera input.

2) How to connect external sensor
Sensor terminal is composed of 16 input channels and 12 output (4 relays, 8 TTLs) channels. As it shown as it below, if sensor output is TTL signal, connect SIGNAL line to left and GND line to right by input channels.

*What are N/O (Normal Open), N/C (Normal Close)?
    This is a terminology explaining operation method of Sensor. N/O Sensor is that contact maintains Open status in normal condition and contact is converted to Close status with beginning operation. Oppositely, N/C Sensor operates while contact maintaining Close status converts to Open status.

Sensor In : Connect the sensors.
Sensor Out : Connect the external electric devices.

3) Connecting with PC using LAN cable

If you want to connect DVR to PC directly, use Cross Cable(1), and if you want to use HUB, use Direct Cable(2).

*Hub : This is a device connecting one office to devices located near with using
         cable when you organize LAN
*Direct Cable : This is standard UTP cable used for communication among
               devices through Hub and others when you organize LAN
*Cross Cable : This is a cable that has changed internal array of standard UTP
             Cable for direct communication among devices not using connection
             devices like Hub when you organize LAN

4) Connection Using PTZ camera

In case of using pan and tilt cameras, connect PAN/TILT DRIVE to product as shown at following figure.
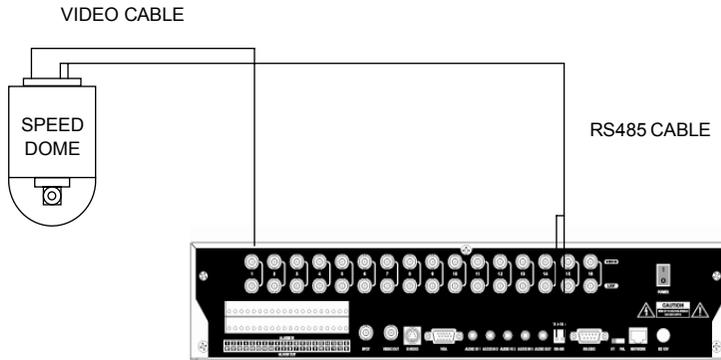
5) Connection with POS or ATM

In case of operating with POS or ATM , connect POS or ATM to product using the expanded serial cable as shown at following figure.

※ *For more details, refer to [Appendix A How to Connect POS].*

• **Attention**
***This DVR has one RS232 port. So you cannot use the POS and DVR controller simultaneously.***

6) Installing Hard disk drive

In case of installing the hard disk drive, open the upper case and install the hard disk drive on the hard bracket. If you use the one hard disk drive, it should be set the IDE1 with master setting. If you use the 2 hard disk drives, it also should be set the IDE1 with 1 master and 1 slave setting. Remember that the main power should be off to install the hard disk drive. If you have any trouble, please contact the technical support.

7) Installing backup drive

You can use the DVD-RW or CD-RW for backup. In this case you can install just one hard disk drive. To install the backup drive, open the top cover and install the backup drive on the bracket. It should be connected to IDE 2 with slave setting.

8) Installing DVR Controller

You can use the DVR controller with serial communication. If you install the DVR controller, you can directly control the DVR using control keyboard.

※ *For more details, refer to [Appendix B How to Connect DVR Controller].*

• **Attention**
This DVR has one RS232 port. So you cannot use the POS and DVR controller simultaneously.

CH3. How to Use

3-1. LIVE Screen

If you turn on power after completing installation, 16 splitting screen is shown on the monitor in real time as following.

※ When the system is locked, the Select ID window appears. If you log in with User mode, you can only operate with live and playback. So if you want to operate with whole function, you should log in with Admin mode. On logging, the Password check window appears. Type the right password to unlock the system. The factory default password is just blank. So press the 'enter' button at first DVR using to go to the menu.
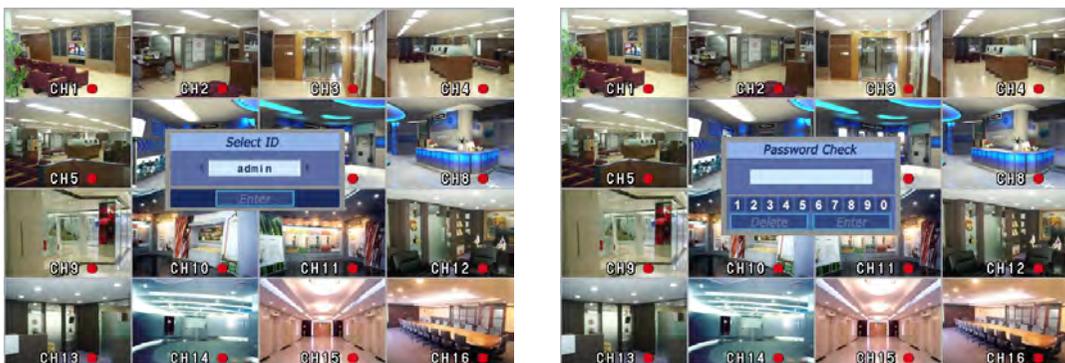
※ You can operate the DVR with buttons, remote controller and mouse. This chapter is written based on the buttons and remote controller. Refer to [CH4 Operation with Mouse] if you install the mouse.

3-1-1. INFORMATION Feature

This feature shows current settings of product through GUI (Graphic User Interface) and INFO button at front side is used for this feature. When you turn on power, this will show current date and time, System Lock Setting, HDD usage, Video Loss Check, Sensor ON/OFF, Motion Detection Check, Recording Status and Schedule Feature Usage. As you press INFO button once more, GUI disappear->OSD disappear->GUI appear->OSD appear will happen sequentially.

※ GUI (Graphic User Interface): displaying current status on monitor as images
※ OSD (On Screen Display): displaying current status on monitor as character
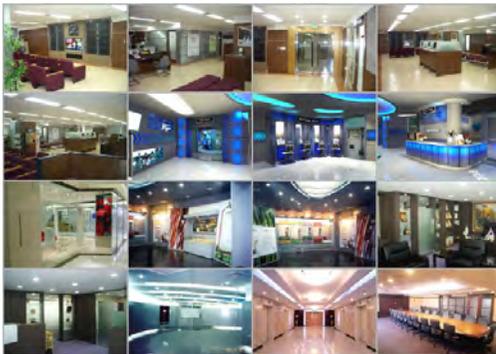
▶ Live Screen GUI
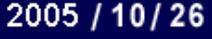
2005 / 10 / 26	Date (e.g.: yyyy/ mm/dd)
23 : 19 : 05	time
100%	HDD usage
🔒 / 🔑 / 📇	Lock up/ Administrator Log in/ User Log in
🕐 / 🕐	Scheduler OFF/ON
✕	Video Loss
ⓛ	Sensor On/Off
🏃	Motion detection
📠	Text In
●	Recording ON
🔄 / 🔄	Channel switching OFF/ON
🔊3 / 🔇	Sound On and selected channel / Mute

3-1-2. Power off

When you turn it off, press the 'Menu' button and go to the 'System' and then choose the 'Power Off' . After confirming power off, DVR will shut down.
Please should follow the procedure on turning it off. It is possible to make a trouble not to follow the instruction.

• WARNING!

This 'Power off' is only turning off the system power. It means there is a still electric current after power off. If you try to change the HDD from the DVR, you SHOULD Turn it off the main power switch behind the product before changing HDD.

3-1-3. Display mode change

You can change the display mode using the 'Display' button in front of the DVR. If you simply enlarge certain channel to the full screen, use the 1~10+ buttons. From 1 to 10, press the related button and over 10, use the 10+ and 1~6 buttons sequentially. As you press the 'Display' button, the screen changes sequentially from 1, 4, 6, 8, 9, 13 and 16 splitting mode.
Use the up , down key to change to the different channel set in the splitting mode.
If you press the 'SEQUENCE' button, it will be changed to automatic switching mode.
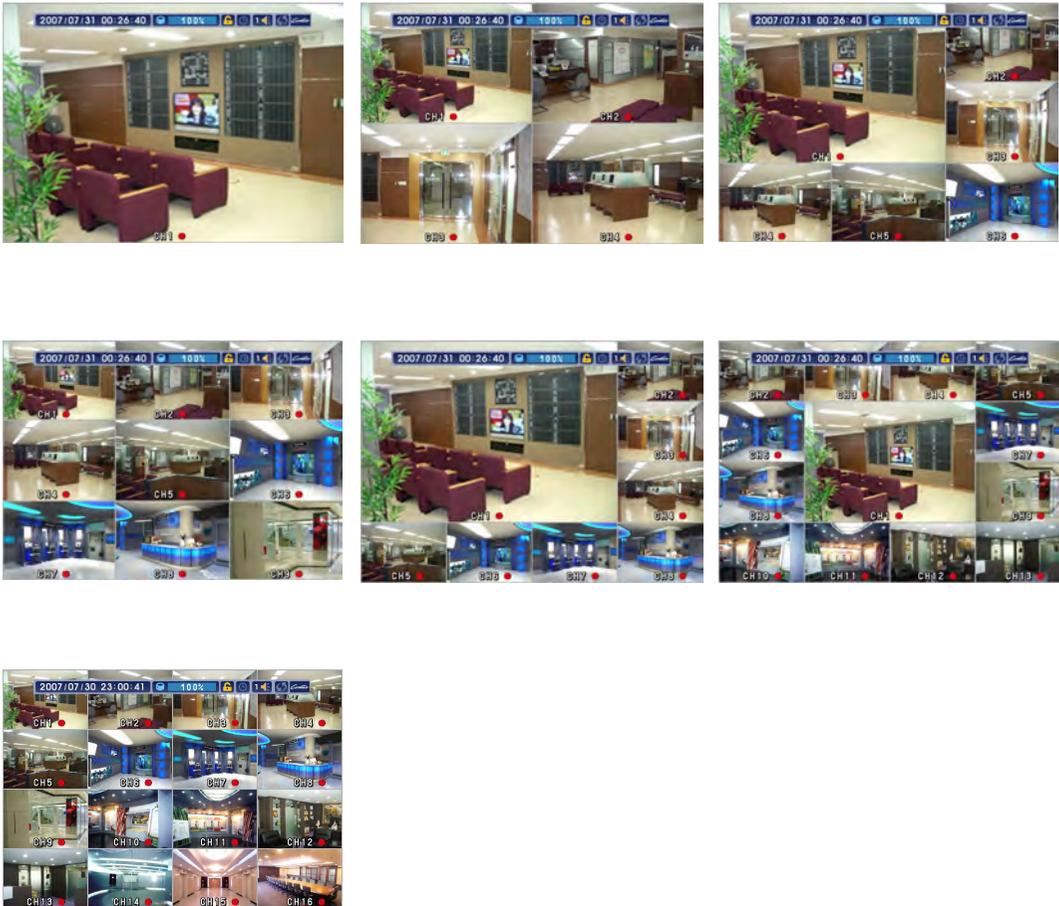
3-1-4. PTZ (Pan, Tilt and Zoom)

It is possible to control the pan and tilt camera by itself. Press the 'PTZ' button to enter the PTZ mode. For Menu setting, you can set it by pressing button as displayed at bottom of window.

1) You can set the direction of camera by using the arrow buttons.
2) Setup : If you press Menu button in PTZ Menu, camera setup window will appear.
3) Zoom In/Out : You can zoom in with #1 button and zoom out with #2 button.
4) Focus In/Out : You can adjust the focus with #3 and #4 buttons.
5) Iris In/Out : You can adjust the iris with #5 and #6 buttons.
6) Pattern : This DVR can support the pattern if the camera has this function.

         - Start(#7) : This sets the pattern start.
         - Stop(#8) : This sets the pattern stop.
         - Run(#9) : This starts to run pattern.

7) Preset : You can toggle between the PTZ window and Preset window using 'Enter' button.

  - Direct Call(#1~6) : You can go directly to the position 1 to 6.
  - Call(#7) : You can go the other position using this button.
  - Set(#8) : You can set the preset position up to 32.
  - Clear(#9) : This will clear the preset position information.
  - Clear All(#0) : This will clear the preset position information.
  - Tour(Menu button) : If you press this button, the camera moves to the position sequentially. To stop the tour, press the tour button once again.

8) Setup : If you press the 'MENU' button on PTZ window, the camera setup window will appear.

Driver: Choose Driver to be suitable for PAN/TILT Camera manufacturer.
    You have to set Comport value according to the connected camera. There are
    more kinds of camera which can be supported. Please contact the tech support
    to want to know the other cameras.

	BitRate	Parity	DataBit	Stop
PELCO D type	9600~2400	NONE	8	1
PELCO P type	2400	NONE	8	1
PANASONIC	2400~19200	NONE	8	1
ORIENTAL	2400(Fixed)	NONE	8	1
LPT-A100L	9600(Fixed)	NONE	8	1
LG-SD110	2400~19200	NONE	8	1

Function: This is a value setting camera moving speed. You can select
    within 1~7. As this value gets higher, speed gets faster. You may
    not be able to change camera speed according to camera kinds.
  - PAN Speed: This is Left/Right Camera moving speed.
  - Tilt Speed: This is Up/Down Camera moving speed.

* Operational Feature by Cameras

	PELCO-D	PELCO P	Panasonic	Oriental	LPT-A100L	LG-SD110
Focus-ctrl	O	O	O	O	O	O
Zoom-ctrl	O	O	O	O	O	O
Iris-ctrl	O	O	O	O	O	O
Pattern-ctrl	O	O	O	O	X	X
Pan-speed ctrl	O	O	O	X	X	O
Tilt-speed ctrl	O	O	O	X	X	O

* For connection of PAN/TILT Camera Receiver part, refer to user's manual of the
related PAN/TILT Camera.

3) Selecting channel: #1 button is used to change the current channel.

4) Focus In/Out : This controls focus of camera.
Use #2 button (Focus In) and #3(Focus Out).

5) Zoom In/Out : You can enlarge(#4 button) or reduce (#5 button).

6) Iris In/Out : Control brightness of camera.
Use #6 button (Iris In) and #7 button (Iris Out).

7) Patrol : This feature allows you to operate camera automatically in order that
you have set camera motion. Patrol allows you to set all directions like
Up/Down/Left/Right.
  - Start(#8 button) : Operates Patrol feature.
  - Learn(#0 button) : Move direction of camera as you wish with
using direction buttons after pressing this button.
  - Stop(#9 button) : Remember areas moved with Learn button.

   If you press Patrol Start button, it is automatically operated according to path
setting.

8) Auto PAN : Allow you to move cameras by setting left and right two points.
  - On('REW')/Off('PLAY') : Select operation status of AutoPAN feature.
  - P1('FF') : Press P1 button after moving camera direction to first point.
  - P2('SLOW') : Press P2 button after moving camera direction to two points.

   If you press On ('REW') button, it moves while repeating P1 and P2 automatically,
and you can stop operation by pressing Off ('PLAY') button.

* For connection of PAN/TILT Camera Receiver part, refer to user's manual of the
related PAN/TILT Camera.

3-2. Search Screen

▶ **Play Screen GUI (4ch)**
Play : Forward normal speed
Playback : Backward normal speed
FF (Fast Forward): FF×2, 4, 8, 16, 32, 64 times faster
FB (Fast Backward): FB×2, 4, 8, 16, 32, 64 times faster
SF (Slow Forward):SFx1/2, SFx1/4
SB (Slow Bacward):SBx1/2, SBx1/4
STILL (Pause)
Frame advance : use the right and left key OR 'STILL(#7)'

▶ **Various Search Features (4ch)**
For search feature, you can perform searching easier and faster with using those buttons
located at front side of the product.
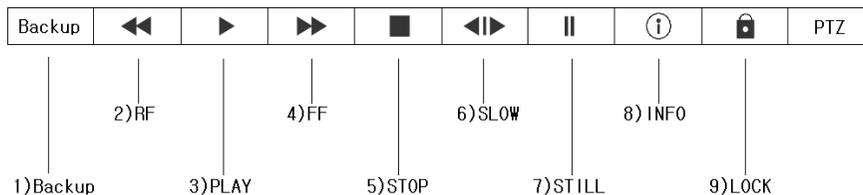
1) Go to the 'Backup' directly.

2) Play images backward fast (Every time you press, it is changed to 2, 4, 8, 16,64
times faster) If you press PLAY Button, it returns to real time playing.

3) Play recorded images in real time. If you press PLAY Button again while playing,
playing screen stops and List window is appeared.

4) Play images faster. (Every time you press, it is changed to 2,4,8,16,64 times faster)
If you press PLAY Button, it returns to real time playing.

5) Stops playing and returns to LIVE Screen.

6) Play images slowly. (Every time you press, it is changed to 1/2,1/4 times faster) If
you are in forward direction, it changes the speed to slow forward and vice versa.

7) This pause images being played and it returns to real time playing if you press Play
Button again.

8) This displays image information on screen and turn it on the GUI and OSD.

9) If you press this button on the chosen file on the Log List, it prevents from
removing while HDD overwrite.

▶ **Play Screen GUI (8 and 16 ch)**
Play : Forward normal speed
Playback : Backward normal speed
FF (Fast Forward): FF×2, 4, 8, 16, 32, 64 times faster
FB (Fast Backward): FB×2, 4, 8, 16, 32, 64 times faster
SF (Slow Forward):SFx1/2, SFx1/4
SB (Slow Bacward):SBx1/2, SBx1/4
STILL (Pause)
Frame advance : use the right and left key OR 'STILL'

▶ **Various Search Features (8 and 16 ch)**
For search feature, you can perform searching easier and faster with using those
buttons located at front side of the product.
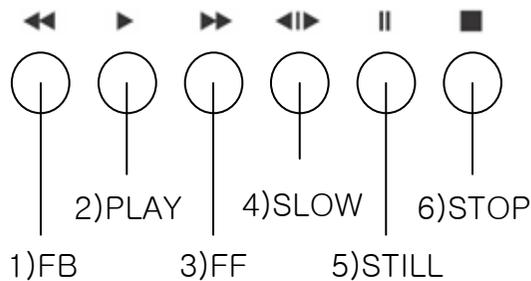
1) Play images backward fast (Every time you press, it is changed to 2, 4, 8, 16,64
times faster) If you press PLAY Button, it returns to normal playback.

2) Play recorded images. If you press PLAY Button again while playing, playing
screen stops and List window is appeared.

3) Play images faster. (Every time you press, it is changed to 2,4,8,16,64 times faster)
If you press PLAY Button, it returns to real time playing.

4) Play images slowly. (Every time you press, it is changed to 1/2,1/4 times faster) If
you are in forward direction, it changes the speed to slow forward and vice versa.

5) This pause images being played and if you press Play Button again it returns to
normal playback.

6) Stops playing and returns to LIVE Screen.

For searching the recorded files, press 'Search' button in front of DVR. You will see following search window.

1) Graphic Search
You can search the recorded files graphically using calendar.

2) Log List
This shows a list of files and events (Sensor, Motion Detection, System and Text in) log.

3) Text-in Search
You can search the transaction data and corresponding video recorded through Serial port.

4) Time Search
Input time you want to search directly for searching.

5) Backup
You can backup to the CD, DVD and USB memory by time criteria.

3-2-1. Graphic Search
This displays all recorded images graphically.

figure1

figure2

figure3

After choosing the 'Graphic Search', you can see the calendar at first.

Use the arrow keys, go to the wanted date which are lit in white.(figure1) Then pressing the 'Enter' button, you can see the bar graph from 0 to 24 hour below the date list.(figure2)
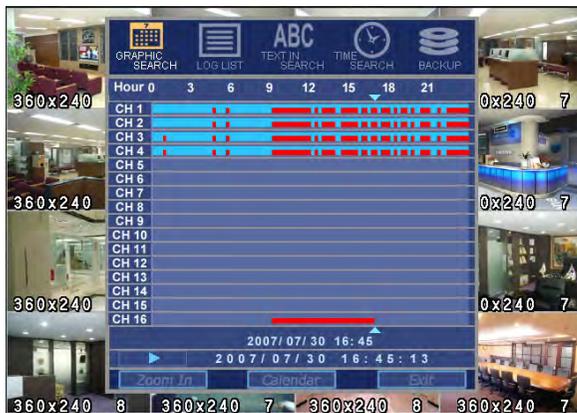
Sky blue bar means that there is a recorded file at that time. Use the arrow key to go to the wanted time.

If you press the 'Zoom In' button, you can zoom in the time bar for the fine searching. After that, press Enter button and it starts playback (figure3).

On playback, If you press the 'Exit' button on playback, you can move to the search screen. If you press the 'Stop' button, the screen goes to the live screen.

You can also change the display mode using 'Display' button.

3-2-2. Log List

figure1

figure2

After choosing the 'Log List', you can see the date at first.

Use the arrow keys, go to the wanted date, which are lit in sky blue (figure1).

In this search mode, you can search the File and Event List which include event, record, and system log. And also you can choose the specific log such as file, sensor, motion detection, video loss and system by using the arrow key (figure2).

Moreover Event regarding to video, you can play directly.

3-2-3. Text In Search
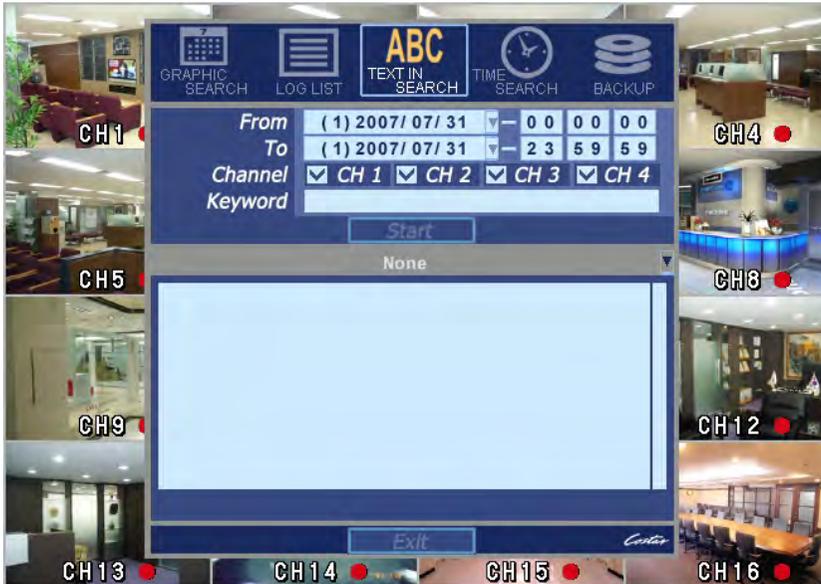
After choosing the 'Text In Search', you can see the search criterion at first. Use the arrow keys, enter the wanted date, time, channel and keyword using the number keys on the front.

And you can use the virtual keyboard to enter the keyword. To appear the virtual keyboard, use the 'Enter' key. After entering the keyword, press 'Menu' button to exit the virtual keyboard and press 'Start' button to search.

You can see the date list including the keyword and time range. Using the up, down arrow key, choose the wanted date and press 'Enter'. If you want to search again with different conditions, press the '#1' button.

* Text in playback will be supported only in the 1 CH full screen mode

* To set the device such as cash register or ATM, refer to 3-3-3 Event

* Text in file length is determined by event duration. So if you want the longer file, change the event duration longer.

3-2-4. Time Search
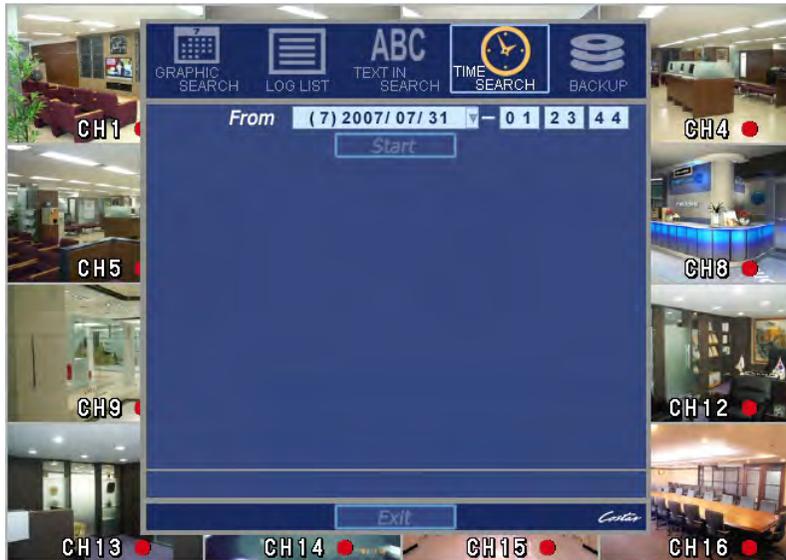
This is very useful function to type the time directly you want to search. If you choose the Time Search, you will see following window.

If you input searching time with using number button, relative file or the closest file is directly played. If you press the Exit button on playing, it goes to the Time search again if you press the 'Stop' button, it goes back to the live screen.

3-2-5. BACKUP

You can backup the recorded files on CD,DVD,USB and playback from those directly.

figure1   figure2

1) How to backup

There are two ways to back up. You can go to the backup menu in search. After inserting the empty media on the drive or USB, go to 'Backup' . Press the 'Enter' button then you can see the backup screen.(figure1) Input the desired time and channel to backup using the number keys on the front. After confirming, it starts. If chosen time is bigger than the media, time will be adjust automatically.

Or you can press the 'Backup' button upon playing. Next procedure is the same and the time sets for 10 minutes automatically.

There are two format on backup file, AVI and DB. The AVI format is adapted 1ch backup. You can play with Windows Media Player if you backup with AVI format. If you want multiple channel backup, choose the DB format. You can play with our client software with this format.

• Attention
Upon the 'AVI' format, in the case of event recording, just one event file may be saved although you choose the longer backup time.

• WARNING!
Do not remove the USB thumb drive while backup. The system may reboot.

2) How to play

Insert the recorded media to the drive and execute 'Backup'. You can see the screen like figure2. Choose the date by the arrow key and press the 'Enter'. Sometimes FF or FB have some difficulties for the reason that CD, DVD is not enough to fast.

3-2-6. File Search in Play Mode

If you press PLAY Button while playing a file, Date/Time window will appear and you can select and view time you want by using direction buttons.

3-2-7. INFORMATION Feature in Play Mode

When you play a recorded file, file information for currently playing file is displayed. If you press INFO(#8) button again and again, GUI disappear->OSD disappear->GUI appear->OSD appear will happen sequentially.

* This will not be activated when recording is being done.
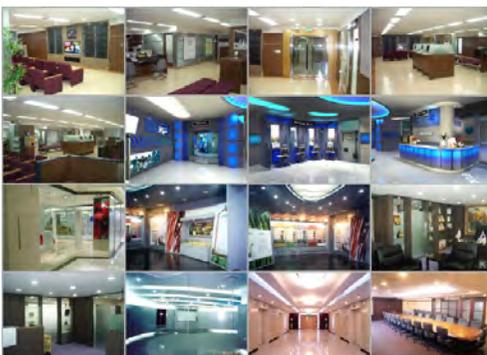
3-2-8. Instant Replay

This is very convenient function to catch the abrupt accident. During live viewing, you can go directly to the playback screen.

If you press the 'PLAY' button or any other buttons related playback upon live viewing, the DVR goes to the 'PLAY' with the present time screen. So it can be possible to use the functions of 'playback'.

Press PLAY

3-3. SETUP MENU Screen

If you press MENU Button in LIVE Mode, following window appears and you can change various product settings.

※ For moving the menu, use Up/Down Button. For changing the setting, use Left/Right Button.

※ In order to save the change of setting, you have to move to upper menu by pressing ENTER Button after setting all menus. If you close by pressing EXIT Button without pressing ENTER, changed setting is not saved.

※ If you have 4 or 8 ch, you can see some buttons are disable. Thai is, on the case of 8 ch, the button 9 to 16 will be disable.

3-3-1. A/V(Audio/Video)

In this menu, you can change setting for Audio and Video.

1) Signal Type: You can change NTSC/PAL using the slide switch in rear panel. It causes not to display the right images, so be careful to change the signal type.

2) Channel Name: You can set the camera name.
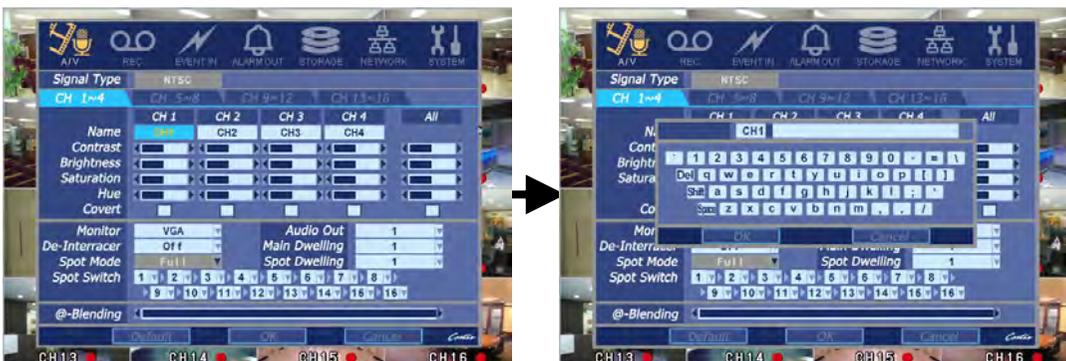
If you select the Camera Name using 'Menu' button, it appears the virtual keyboard in screen. Use the arrow key to go to the wanted letter and press the 'Enter' key to input the character. You can also use the hot key for shift, space and delete. After inputting the name press the 'Menu' button to save and exit.

It will go to the A/V menu when pressing ENTER Button after setting all menus. If you close by pressing EXIT Button without pressing ENTER, changed setting is not saved.

3) You can adjust images of camera by channels.
- Contrast: Adjust contrast of camera.
- Brightness: Adjust brightness of camera.
- Saturation: Adjust saturation of camera.
- Hue: Adjust color of camera.

You can see changing status of Contrast, Brightness, Saturation, Hue with a progress bar. Adjust them with using Left/Right arrow button while viewing screen. If you want all the camera simultaneously, use the 'ALL' button. It will effects on every channel.

4) Monitor : You can choose the monitor between VGA and composite. The screen size will be optimized with the selected monitor.

5) Deinterlacer: activates interlacing in playback.
This would solve the bad screen when pause or Slow playback in playback in full screen of 720*480(720*576) if you click "ON".

6) Spot mode : You can choose the spot output between full screen and quad.

7) Audio Output : You can hear the live sound on live quad viewing according to set this menu. In full screen you can hear the chosen channel regardless of setting, If you choose mute, there is no sound but still recording.

8) Main Dwelling : It defines the switching time of main output.

9) Spot Dwelling : It defines the switching time of spot output.

10)Spot Switch : You can set channel orders being switched. You remove the video loss channel in here upon spot switching.

11) a-Blending : This adjusts the transparency of GUI. This operates with Left/Right buttons and the transparency is adjusted while a bar is moving.

3-3-2. Rec (Recording)
With this menu, you can set the recording variables of DVR and the Scheduler.

[When Select Scheduler Off]
If you select Scheduler Off, Scheduler Recording setting window disappears and a window to set normal recording mode appears. Since you can set normal recording and event recording differently, you can use it conveniently as you want.
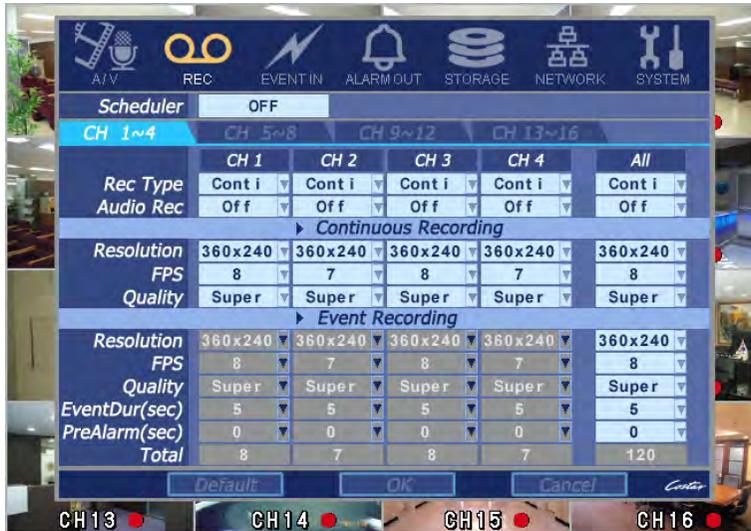
1) Rec type: to set conti, event, C/E(conti and event) and none(not recording).

2) Audio Rec: to select audio recording or not.

3) Conti Recording: continuous recording mode setting.

① Resolution: There are three kinds of resolutions. Among 360X240(CIF), 720X240(2CIF), 720X480(D1)(OR 360X288, 720X288, 720X576 in PAL), you can set individually.

② FPS: Set recording frame rate. 1,2,3,7,10,15,30 are possible within 135fps based on CIF. 2CIF is equivalent 2XCIF and D1 is equivalent 4 times CIF. So there are many combinations under this rule. For example, if in case that ch1 is 2fps/D1, ch2 is 5fps/2CIF and the others is 3fps/CIF , total frame number is 2x4 + 5X2 + 3X14 = 74. So it is valid. Another useful function is that one channel sets to 30fps/D1 and the others set to 1fps/CIF, total frame rate is 135. So it is also valid. You can check the total number of frames in 'Total' .

③ Quality: Set picture quality. As quality gets higher, screen quality gets better but saving period gets shorter because file size gets bigger. There are 4 steps quality such as Super, High, Medium and Low

To save the setting, choose 'Yes' after pressing 'Enter'.

4) Event Recording

This is a window setting Event Record Mode. Setting method is same as Conti Recording method. Conti Recording and Event Recording can be operated simultaneously.

So during no event input, DVR records by Conti recording settings. However if there is an event , it starts recording by Event Recording settings during Time(sec). This function is very useful when you want to operate with the mixture mode.

- Event Dur(sec): to set post event recording time. You can choose between 1~60 seconds.
- Pre alarm(sec): to set pre event recording time. You can choose 1~5 seconds.

* Event recording has priority in recording. In C/E recording, the recording will follow conti recording setup in normal condition while it would follow event recording setup in event generation.

* For convenience, you can use the 'ALL' menu to change with the same preference. You don't have to setup each channel if you using the 'ALL' function.

[When You Select Scheduler On]
If you select Scheduler On, following [Schedule Recording] setting window appears. Since you can set recording weekly, you can reduce recording of unnecessary time period. In Scheduler window, days and channels are displayed, and recording information for each channel is displayed at bottom of window.

<How to set the weekly scheduler>
1. Choose 'Scheduler' to 'On'.
2. Move the cursor to wanted time press '#1' button to select the start time.
3. Use the arrow key to enlarge the area.
4. Press 'Enter' button to change the group of the selected area.

<How to set the group>
1. Choose 'Scheduler' to 'On'.
2. Move to 'Group Setup' and press the 'Enter' button, then Group Setup Screen appears.
3. Choose the group which you want to change setting.
4. Go to the setting area using keys.
5. Change the value like normal recording setup.
6. You SHOULD press the 'OK' to preserve all the settings.

*In recording, Schedule recording setting is most preferred. So if you activate the weekly scheduler, you cannot record manually.

3-3-3. Event In

With this menu, you can set sensor input/output, motion detection feature and text in setup. If you set this feature, it is converted to record mode automatically if there is an Event generation although you don't use Record Button at front side. You can also set each channel individually.

1) Motion Detection
If you choose 'Motion Detection', a window allowing you to change motion detection will appear.

① Channel: Select a channel you want to set for motion detection record.
② Sensitivity.: Users can set this as default value for detection motion and
        input range is within 1~10. Using #2 button to change the
        sensitivity. 1 is the lowest sensitive value and 10 is the most
        sensitive value.
③ Sel/Unsel : Move the cursor to wanted area press '#3' button to select
      the start area. Use the arrow key to enlarge the area.

④ On/Off : This will activate or deactivate the motion detection of the
        selected area.
⑤ All On/Off : This will activate or deactivate the motion detection of the
        whole area.

2) Text Insert
In case of using the POS or ATM, you should choose the right device. Using the
arrow key, go to the 'Text Insert' button and press the 'Enter'. You can see the
device choosing menu.

Go to the wanted channel , use the left and right arrow key to select the device. If you
cannot find your device, please contact our technical support. The advanced setup of
the device will be performed by client software.

3) Sensor type: to set type (N/O, N/C) for each Sensor.

The type of sensor should be set the same as with DVR. Otherwise, DVR may keep recording on while sensor is not activated.

4) Event Input: You can choose event input for each channel.

　　　① Sensor & Motion Detection

　　　　☐ (blank) : No use the event.

　　　　S : Sensor input.

　　　　M : Motion detection.

　　　　V : Sensor or motion detection.

　　　　P : Sensor or motion detection with popup.

　　　②Text in

　　　　☐ (blank) : No use text in.

　　　　V : Enabling the Text in.

　　　　P : Enabling the text in with popup.

5) Summary regarding as Event Recording

	Event Input	Motion Detection	Sensor Setting
MD recording	MD	ON	OFF
Sensor detection and recording	Sensor	OFF	ON
MD,Sensor detection and Recording	MD/Sensor	ON	ON
MD,Sensor Detection and non-recording	None	ON	ON

*In REC Menu, MD recording, Sensor detection recording, MD, Sensor detection recording and no recording are determined according to Event Input.

*Although you set Motion Detection and Sensor Setting to On in Event menu, if Event Input in Rec Menu is set to None, it only detects and does not record.

3-3-4. Alarm Out
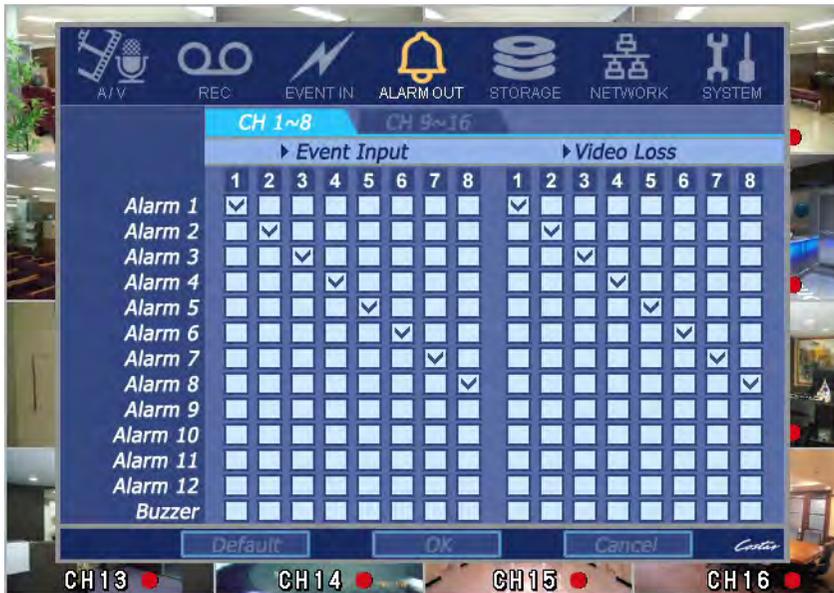
1) Alarm 1~12 : It sends the alarm output to checked ports. From 1 to 4, the output is dry contact. So you can connect directly the other electronic devices using this ports. From 5 to 12, the output is TTL. So you can use this signal to control the other devices.

2) Buzzer : This will be enable to turn it on and off the internal buzzer sound upon events.

3-3-5. Storage
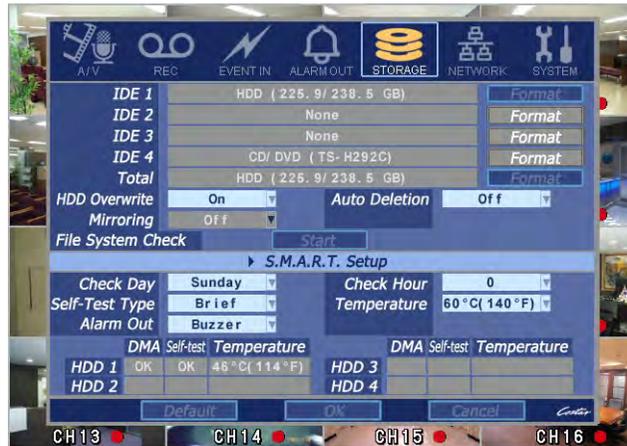
1)   IDE1~IDE4
        Display the information and usage of the hard disk drives. If you press the
        'Format' button on each IDE, only that HDD will be formatted.
       If you install the backup drive such as CD-RW, DVD, that information will be
         shown on IDE4.

2)   Total
        Display all the HDD usage being used for the product. If you press the 'Enter'
        button on here, all the hard disk drives will be formatted.

3)   HDD Overwrite
        Determine whether you want to continue recording if there is no spare saving
        space at hard disk drives.

4)   Auto Deletion
       You can select the holding period of the data. If you choose 'OFF', the DVR
       keep the maximum data regarding the HDD capacity.

5)   Mirroring
        If you install two hard disk drives, you can set the second drive as a backup
       drive by mirroring. If you choose 'On', you will be asked to format the second
       drive. After conforming, the mirroring starts. This is the best way to avoid the
       data loss. If you encounter any hard disk problem, you can perfectly restore the
       data from the mirror hard disk drive.
        If you install C and D hard disk drive, C will be mirrored to D. If you install
       the 4(four) hard disk drive, that is C, D, E and F, C will be mirrored to D and E
       will be mirrored to F. But in this case you can not use the backup IDE device.
        In any case, the mirrored disk size will be the same or greater than master HDD.

6) File System Check
   You can check the file system whether it is correct or not. If there is a problem, it will be automatically fixed.

7) S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology) Setup

   This function lets you probe the hard disk drives and investigate the status of the drivers automatically. If you press the menu button upon this position, the setup window will appear.

   Check day : Determine the date to perform the SMART.

   Check Hour : Determine the hour to perform the SMART.

   Self-Test Type : You can choose between brief and detail.

   Temperature : The upper tolerance of the hard disk drive

   Alarm Out : You can choose where to send the S.M.A.R.T. error. You can select between Buzzer and Alarm 1~12.

8) HDD Check

   File System Check : You can check the file system whether it is correct or not. If there is a problem, it will be automatically fixed.

   Status : This shows the latest result of the DMA(Direct Memory Access), self-test and temperature of hard disk drive. If it displays 'Fail', it is recommended to change the hard disk drive(s).

3-3-6. NETWORK
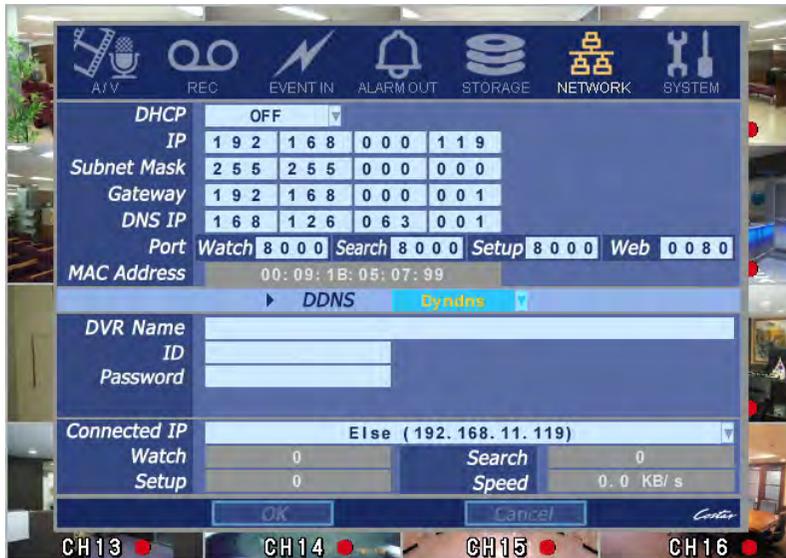
This is IP address setting when DVR is connected to LAN.
Input IP Address, Subnet Mask and Gateway you want to input and then save them
by pressing ENTER Button. (If you connected PC and DVR on 1:1, Subnet Mask
and Gateway value of PC and DVR should be set to be same.)

1) DHCP (Dynamic Host Configuration Protocol)
Set whether you want to use DHCP or not (On/Off)
 If you connect LAN after setting it to On, IP is allocated automatically. If you set it
to Off, you have to input IP. DHCP is a protocol that allows managers to manage and
allocate IP address centrally.

2) Port
There are 4 kinds of ports for the case such as watch, search, setup and web. You can
individually set the port number of the DVR. The default is 8000. You can choose
from 8000 to 9999.

3) DDNS (Dynamic Domain Name Server)
This is the function to automatically change the IP of DVR to URL. This product
supports the DDNS service both of Costar DNS and Dyndns. You can choose one of
them. If you want to choose the Dyndns, you join www.dyndns.com at first and get
the URL.

① DVR Name

Type the URL of DVR. Press 'Enter' button first, using the virtual keyboard, type the address except http:// .

② ID, Password

Type the ID and password that is registered in www.dyndns.com.

4) Status

This shows the information how many connections and what is the action of each connection.

① Connected IP : This displays all the connected IP.

② Watch : This displays how many connection for live viewing.

③ Search : This displays how many connection for playback.

④ Setup : This displays how many connection for DVR setting.

⑤ Speed : This displays the practical bandwidth of network.

3-3-7. SYSTEM

In this menu, you can set product's system (time, HDD information) , change
Password and power off.

1) NTP (Network Time Protocol) Server
     This function is to change the time of DVR automatically via network.
     Press the 'Enter' button and using the virtual keyboard, type the address of NTP
  server.

2) Time Setting
  This sets product time. Input time by pressing number buttons after moving cursor
  with direction buttons. Be careful to move to backward. The overlapped data will
  be deleted with warning message.

3) Time Zone
  Choose the time zone of your site. If you using the NTP function, it must
  be set correctly to your zone.

4) Daylight Saving Time
  It enables to adapt the day light saving time automatically.

5) Language
  You can choose a different language. Basically 5 languages can be loaded. Factory
  default is that English.
6) Key Buzzer
Turn it on/off the buzzer sound when press the button.

7) Auto Lock
Lock Time allows you to set system lock setting that makes system to go into lock
  mode for certain period of time. You can select within 1~10 min. When Lock Time
  is Off, you have to have Admin authority to change this setting.

8) DVR ID, Remote Control ID

This sets the ID of remote control. If you have many DVRs in the same place, you can control separately the DVR by different remote control ID.

Use the ID setup and number key to set the ID of remote control on the remote controller. You may check the ID by pressing the remote control key. The ID should be the same between the DVR and remote control.

9) Password

This sets the password.

Move cursor over Admin Password Setting, then press 'Enter' button. If you input correctly Old Password/New Password/Confirm, the password will be changed.
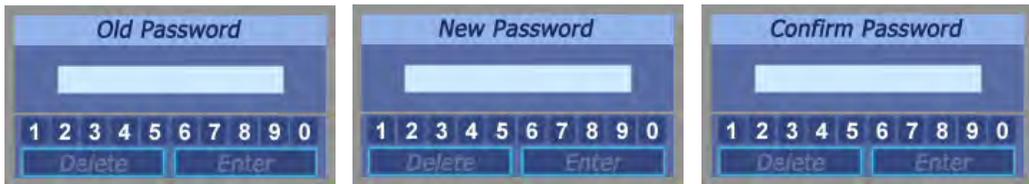
10) Multi User Authority

 This sets User authority individually. You can give to each users the authorities such as setup, search, backup, PTZ, network and camera control.
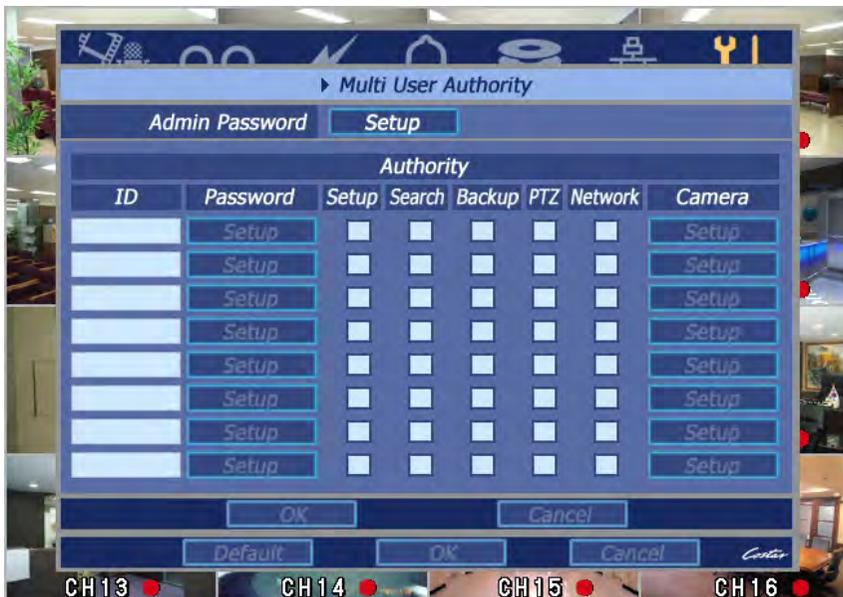
11) Power Off
Power off the system. This menu will make the DVR go to the standby mode. If you want to completely turn it off, use the main power switch on the rear panel.

12) Version
 The firmware version is displayed in here.

13) Configuration
    You can save the DVR setting to the USB thumb drive.
                Export : To save the current DVR setting to the USB thumb drive
                Import : To load the saved DVR setting from the USB thumb drive

14) DVR Controller
 You can use the DVR controller. Please refer to Appendix B.

CH4. Mouse Operation

4. Mouse Operation

You can operate the DVR with the mouse. You **should** use the USB/PS2 compatible mouse only if you use the 8 or 16ch DVR. If you use the 4ch DVR, you may use the USB mouse. The mouse must install before booting. If you install the mouse after booting, you can initialize the mouse using the pressing the Exit button twice on the live mode.

On the live screen, click the right button. The menu screen will appear.
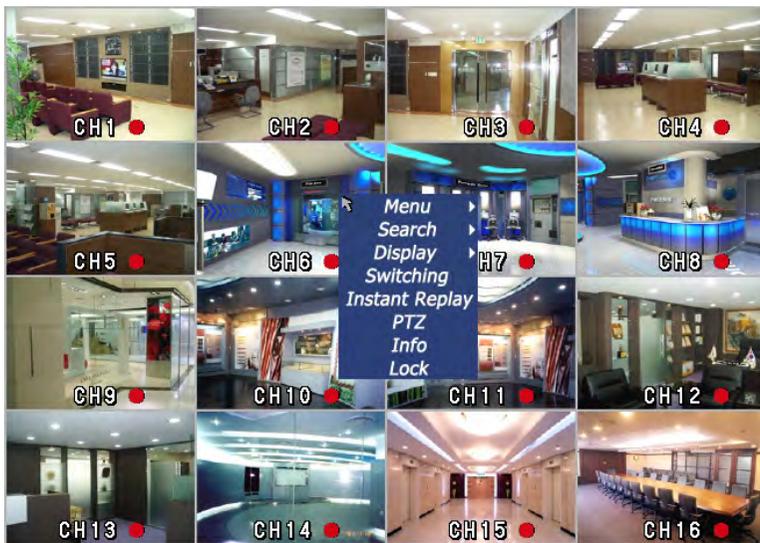
If you move the cursor to wanted menu, the sub menu will appear. Use the left button to choose the menu.

Refer to Ch.3 to use the detailed menu.

1) Sub menu of 'Menu'
 - AV
 - REC
 - Event In
 - Alarm Out
 - Storage
 - Net
 - System

2) Sub menu of 'Search'

- Graphic Search
- Log List
- Textin Search
- Time Search
- Backup

3) Display

- full screen
- quad screen
- 6 splitting screen
- 9 splitting screen
- 8 splitting screen
- 13 splitting screen
- 16 splitting screen

4) Operation upon Play with the mouse

If you move the cursor below upon play mode, the play menu will appear lower position. You can choose the all functions of playback.

• Attention
Upon 8 or 16ch DVR, you insert the PS2 mouse before booting. If you insert the PS2 mouse after booting, you can also activate the mouse using 'Exit' button. This activation is in effect only live mode.

CH5. Client Program

5-1. Installing Client Program

This program supports Windows 98, 2000, ME, XP and Vista.

This program installation is for communication between DVR and PC.
Execute SETUP.EXE on CD provided with the product.
When you followed installation procedure properly and Active DVR 104V folder is created on program menu, program installation process is completed.

You can play Live image of DVR and search files recorded on DVR by connecting DVR and PC with LAN through Client Program. Moreover, you can upgrade S/W of DVR with Firmware provided with the product and save still image on PC in Search Mode of DVR.

CPU and VGA are absolutely effective for playing recorded file and recording performance. Since VGA is effective for several areas including errors and performances in regard to operation characteristics, you have to use verified products. If not you may experience not being able to see images or low screen quality while playing.

※ This client S/W sends and receives the huge amount of data. So it will be recommended not to execute with the other application program. Failure may be happen at that case. Especially vaccine program may make a trouble on live and playback.

▶ Recommended Client PC Specification
- CPU : Pentium Ⅳ 3.0GHz or higher
- RAM : 1GB or higher
- VGA : Memory 256MB or higher
- LAN : In 10/100 network environment, 100Mbps or higher environment
- DirectX9.0 or higher,

▶ Minimum Client PC Specification
- CPU : Pentium Ⅳ 2.0GHz or higher
- RAM : 512MB or higher
- VGA : Memory 64MB or higher
- LAN : In 10/100 network environment, 100Mbps or higher environment
- DirectX9.0 or higher,

In the case of the ' Favorite mode', more the number of connected channel will increase the CPU occupancy. So the maximum number of connected channel is dependent on your PC computing power.

▶ Available VGA

- Chipset from nVIDIA: GeForce 4- Higher than 64MB
- Chipset form ATI: Radeon - Higher than 64MB
- Chipset from MATROX: G450 - Higher than 64MB
- Chipset from Intel: Higher than 64MB

If you use a chipsets with lower specifications compared to the above benders, there might be program errors or low screen quality like black&white screen or you will even be unable to play.
You can only play with high color(16 bit) or higher, and you will not be able to play properly with 256 colors.

① Open CD-ROM Drive and Run Setup.exe and then Appear Setup Menu.

② Click 'Next'.

③ Ask designate Folder to Install the program
Recommend Basic setup c:\program files\Digital Video Recorder \DVR client
Click Next.

④ Showing Progress of Copy of Files.
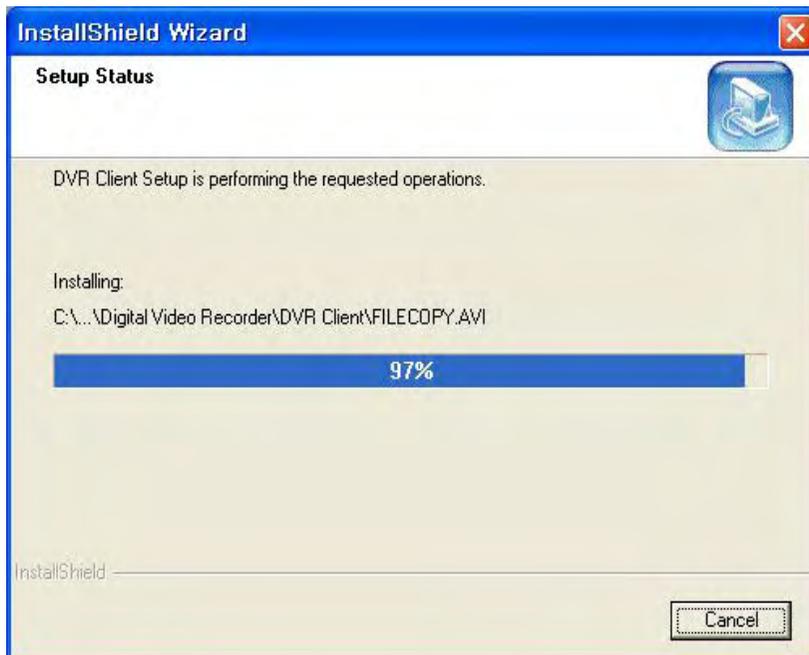
⑤ Click 'Next'

⑥ When Finishing Installation, click 'Finish'.

⑦ Finish Program Installation

5-2. How to Use Client Program

If you execute Client Program, you will see following password screen.
After entering the right password (**default is none**), you can do remotely seeing
Live Image on DVR through Client Program, and you can do searching, playback
and setup the DVR.
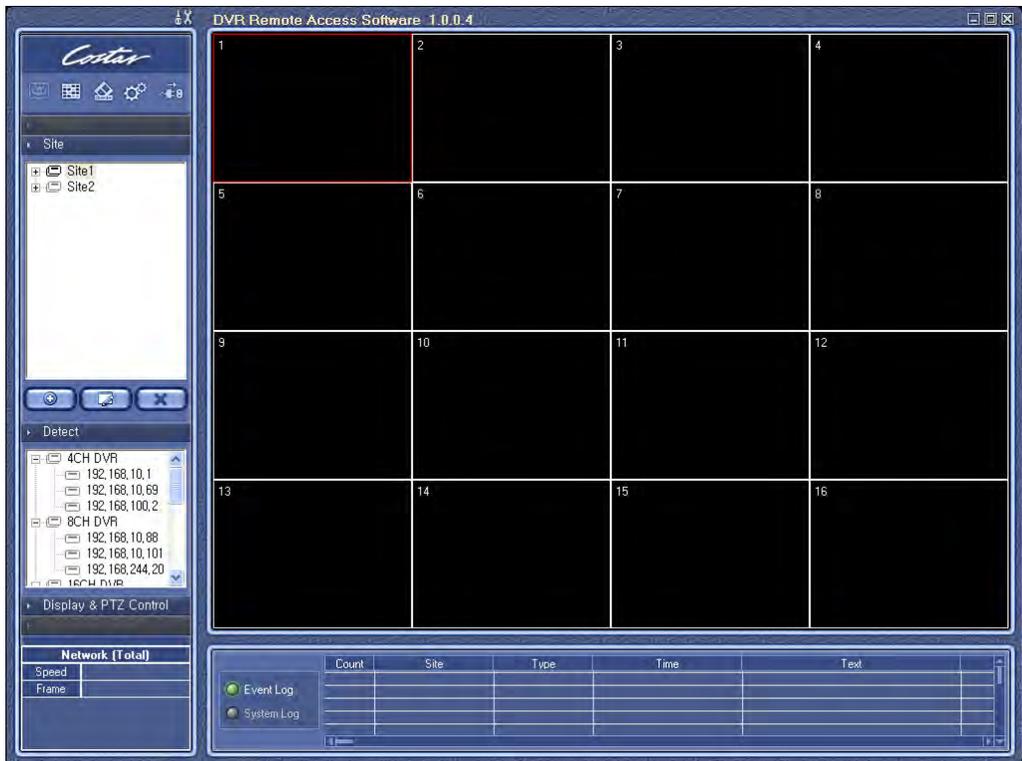
5-2-1. Initial Screen
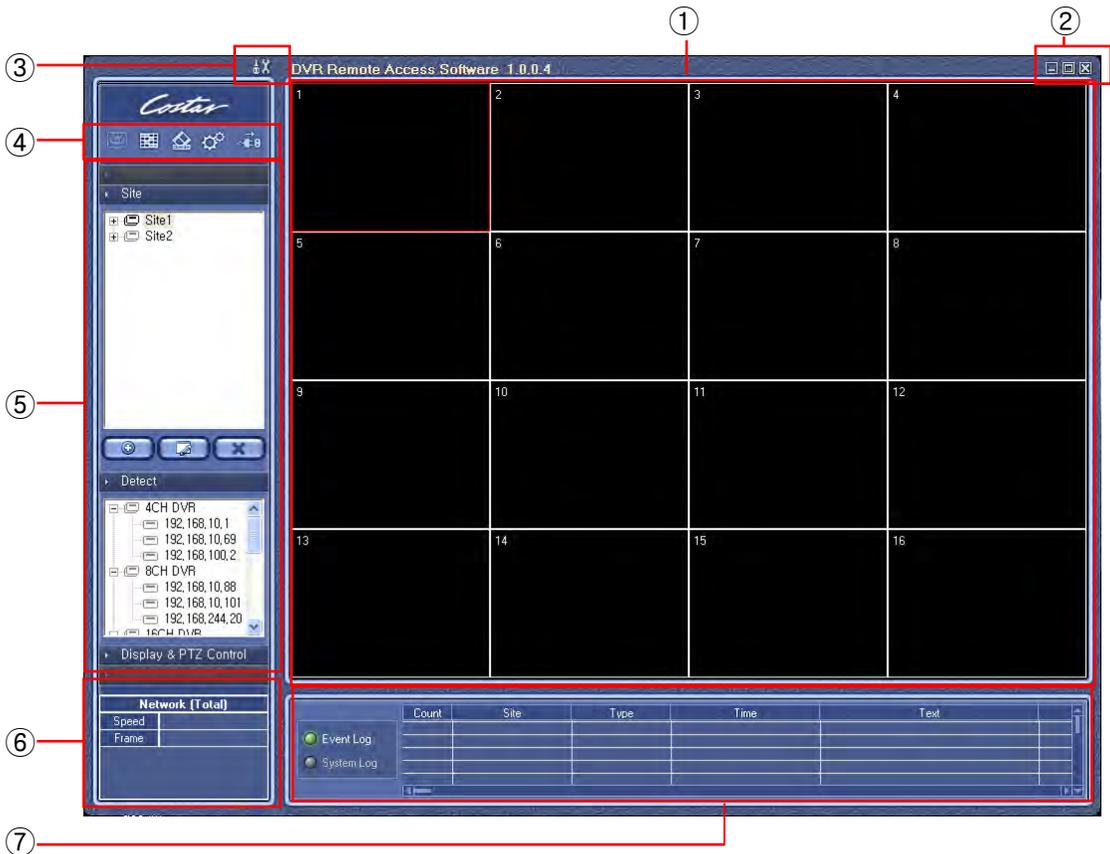
① Display screen shows the live and playback images.

② 🔲　　Minimize : To minimize the client software window

　🔲　　Maximize : To maximize the picture. You can use the full monitor screen to see the picture. If you want to back to main screen, use the 'ESC' or mouse right button.

　🗙　　Exit : To quit the client software

③ 🔧　　Setting : To go to the setup screen

If you press the 'Setting(⚙)' button, the below screen appears.
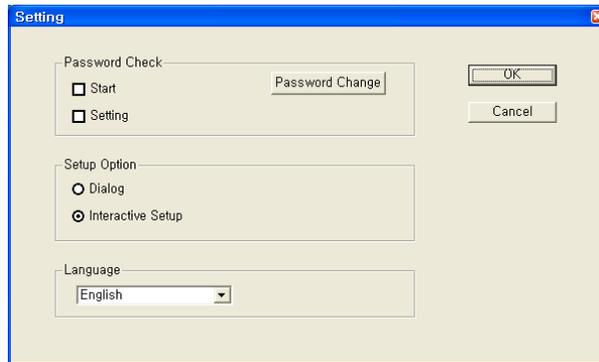
Client software password setup : the setting about password

Start – If choosing, it will ask the password on starting.

Setting – If choosing, it will ask the password in order to enter the setting

Password Change – Changing the password

Setup Option : Choosing the remote setup method

Dialog – If you choose the 'Dialog', You can set the DVR using dialog
windows. If you don't want to show the changing the setup on
local DVR, use this feature.

Interactive Setup – If you choose the 'Interactive', you can set directly the
DVR as you are in front of DVR

Language – Choosing the language of remote software

④   WATCH MODE : Live screen.

        FAVORITE MODE : To connect the multiple DVR and to show the multiple channel up to 64

        SEARCH MODE : Playback Screen

        SETUP MODE : Setup of connected DVR

        CONNECT : To connect or disconnect the selected DVR.

⑤

| ▸ Favorite |
| ▸ Site |
| ▸ Detect |
| ▸ Display & PTZ Control |
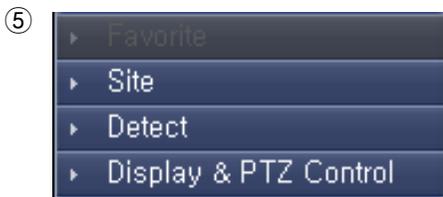
Favorite : You can connect multi-DVR using this. You can also make a list of IP Addresses you frequently use for your convenient use.

Site : This shows the DVR list which you want connect.

     ⊕   Add : You can add new IP Address.

     ✎   Edit : You can edit IP Addresses and other connection information on the list.

     ✕   Delete : You can remove saved list.

Detect : Upon selecting this, all the DVR which connect to your LAN display on the box.

Display & PTZ Control : This changes to control window after connecting.

⑥

Network (Total)	
Speed	
Frame	

This shows the network speed and frame rates per channel.

Site mode – It is possible to send up to 7.5 frames per second on 16 channel
screen in Watch mode and 30 frames per second on 1channel screen.
Favorite mode – It is possible to send 30 frames per second in each channel.
However it is dependent on the network speed and PC computing
power.

⑥ If you choose 'EVENT', all event will be displayed. If you choose 'SYSTEM',
only the event regarding system will be displayed.

EVENT Log : motion detection, sensor, text in etc.

SYSTEM Log : DVR time change, DVR Power Off etc.

5-2-2. Connecting the DVR

If you click 'Add' button at lower right corner of initial screen , you will see 'Site Add' window. You can add the wanted DVR in this window.

Group – You can set the group of DVR. You can choose the existing group
or make the new DVR Group with 'New' button.

Name – You can set the name of the DVR.

IP Address - You can set the IP address of DVR.

Port – You can set the port number of DVR.

Num Channel – You should choose the number of exact DVR channels what you
want to register.

ID – Please type the admin or user.

Password – Type the password of DVR.

After entering all the field, click the 'OK'. The DVR list will be added on 'Site'.

Another way to add the DVR is to use the 'Detect' function. In 'Detect' window, it shows all the DVR which is connecting in the same network. Choose any IP and click the 'add' button to add the DVR to your 'Site' list.
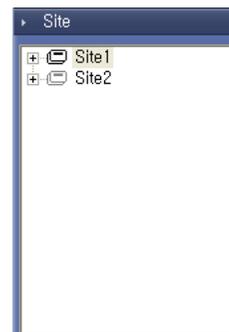
5-2-3. Initial Screen after connection
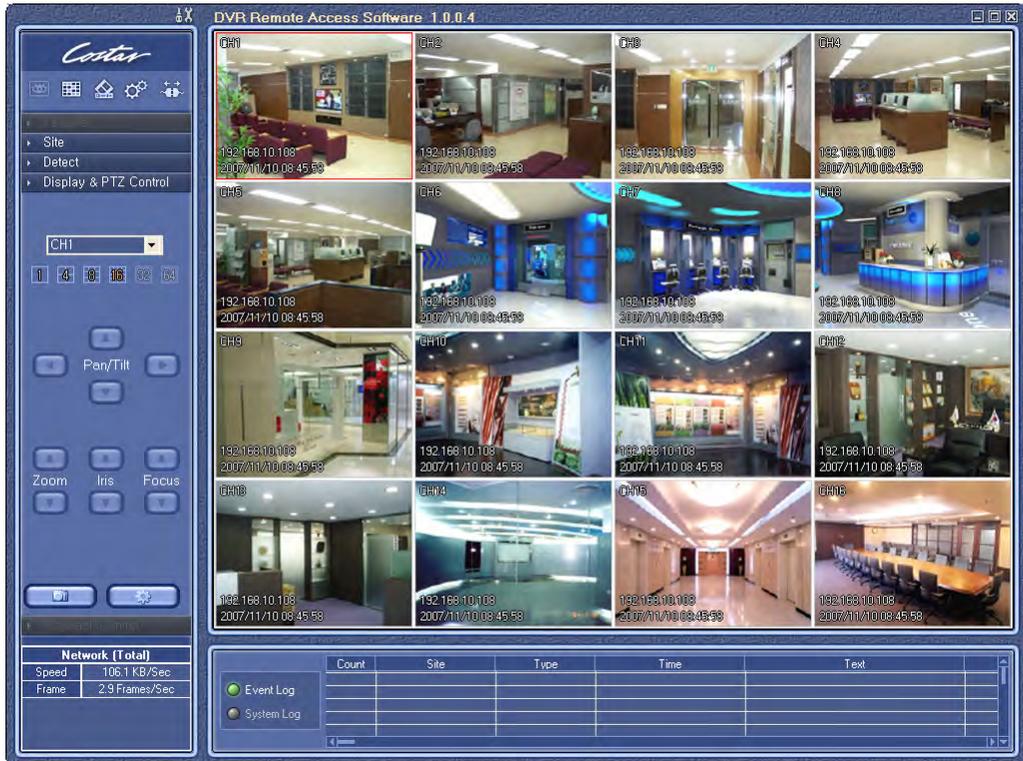
 Choose the DVR on the 'Site' list and click the 'Connect' button. You can see the live screen of the selected DVR.

If you choose 'Favorite' button, you can connect many DVR at the same time and also you can make your own favorite DVR group.

5-2-4. WATCH – Live viewing

If you choose 'Control' button after connection, you can see the control screen.

① Channel selection

② Display mode selection

③ PTZ control : You can control the PTZ camera .

④ Snap Shot : Used for getting snap shot. You can save with JPG or BMP. Refer to 5-2-6.

⑤ Option : Changing the related setting. You can see the dialog box below.

OSD Option : This turns the OSD On/Off on live viewing.

Favorite Mode Max Fps : You can adjust the maximum frame rate individually upon 'Favorite' connection. If you choose 'AUTO', the program chooses the optimum rates based on the PC and network speed.

Search Option : Changing the search option
　Deinterlacer : It will remove the tail when you play with the D1(720X480 or 720X576) resolution and low frame rate (below 5 frames per second).
　Skip P Frame : If you check this box on the case of using the narrow bandwidth network such as PSTN, it makes it possible to real time playback by skipping the P frame.

Audio : This turns the sound on/off.
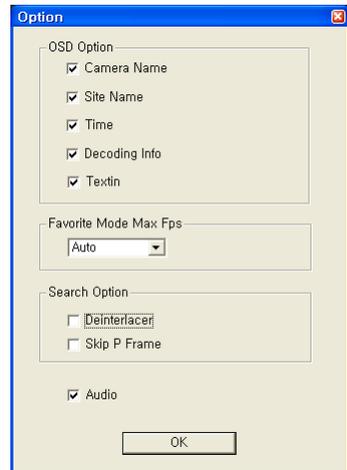
5-2-5. Favorite – multiple DVR connection

In Favorite Mode, you can make your favorite multiple connection lists by pressing the 'Add' button or dragging from the 'Site' lists.
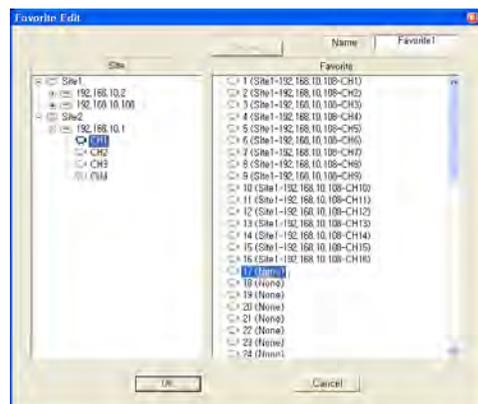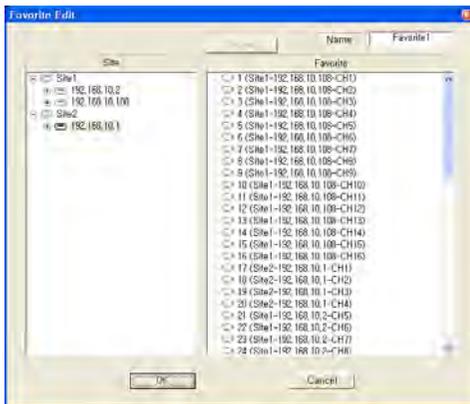
If you press the 'Add' button in Favorite Mode, the upper window will appear. The left side of the window shows the DVR list what you registered in site menu and the right side of the window shows the Favorite list which you want to edit.
If you want to make the Favorite list, drag and drop the wanted DVR from the left list to the right channel number and the selected DVR will be registered to the Favorite list. And also you can register the individual channel not the whole DVR.
After making the Favorite list, set the list name and press the 'OK' button to save the list.

If you press the connect button after selecting the Favorite list, the below window appears and you can watch simultaneously up to 64 channels.
This favorite mode only can be adapted to the 'Watch' mode not a 'Search' mode and 'Setup' mode.
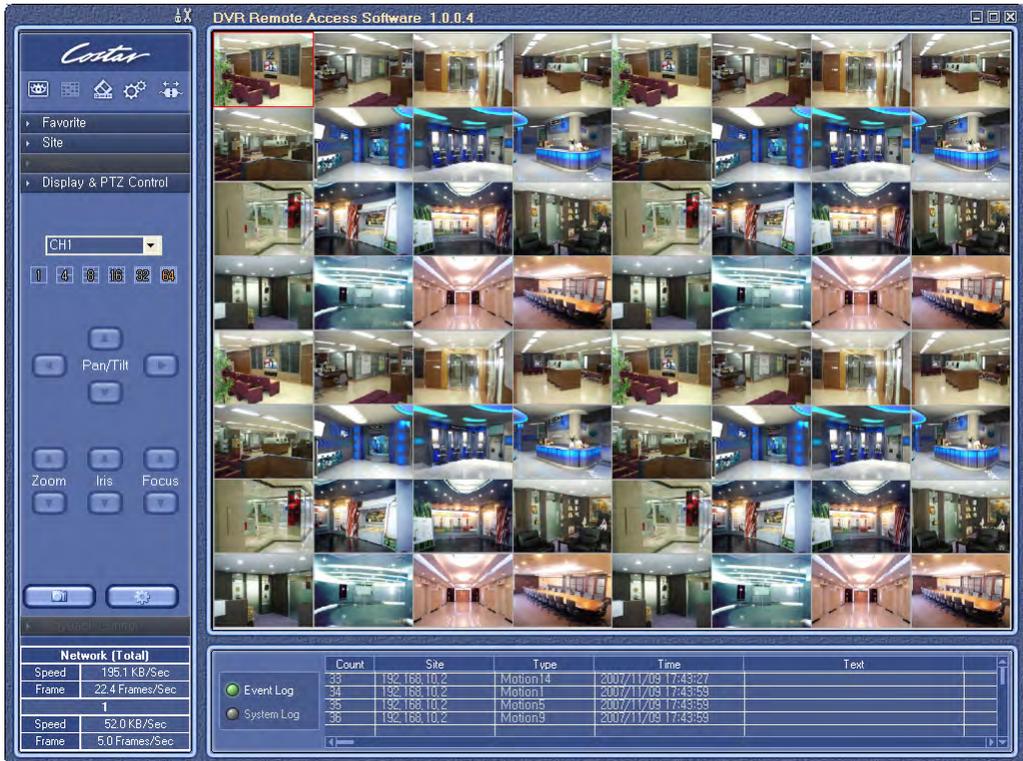
You can register the DVR or individual channel to the Favorite list directly not to make the list. You can just drag and drop the wanted DVR or channel from the right window to the wanted left channel. It will automatically connect to the selected DVR or channel.
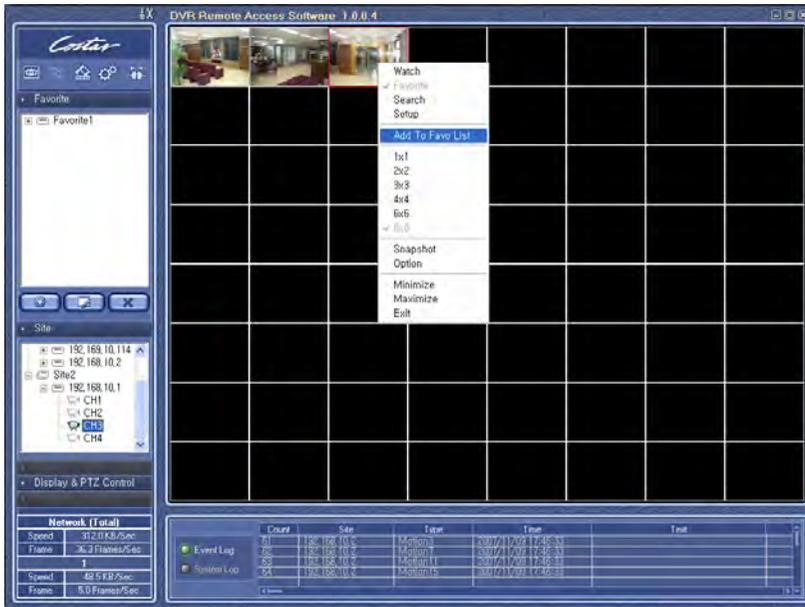
If you click the mouse right button from the upper screen and select the 'Add To Favo List', the favorite editing window appears and you can add the new connection to the list.
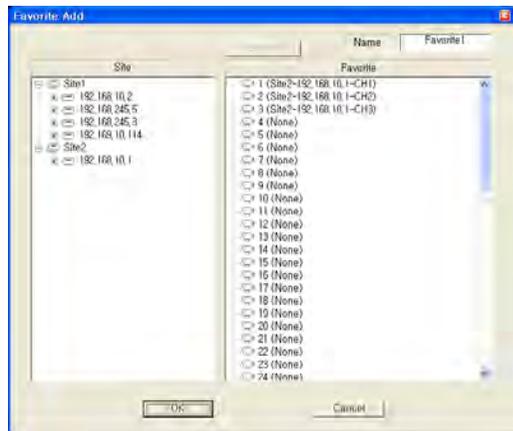
5-2-6. SEARCH – Playback

If you choose 'SEARCH' button after connection, you can go to the playback mode.
If you choose 'Control' button on 'SEARCH', you can see the below control.
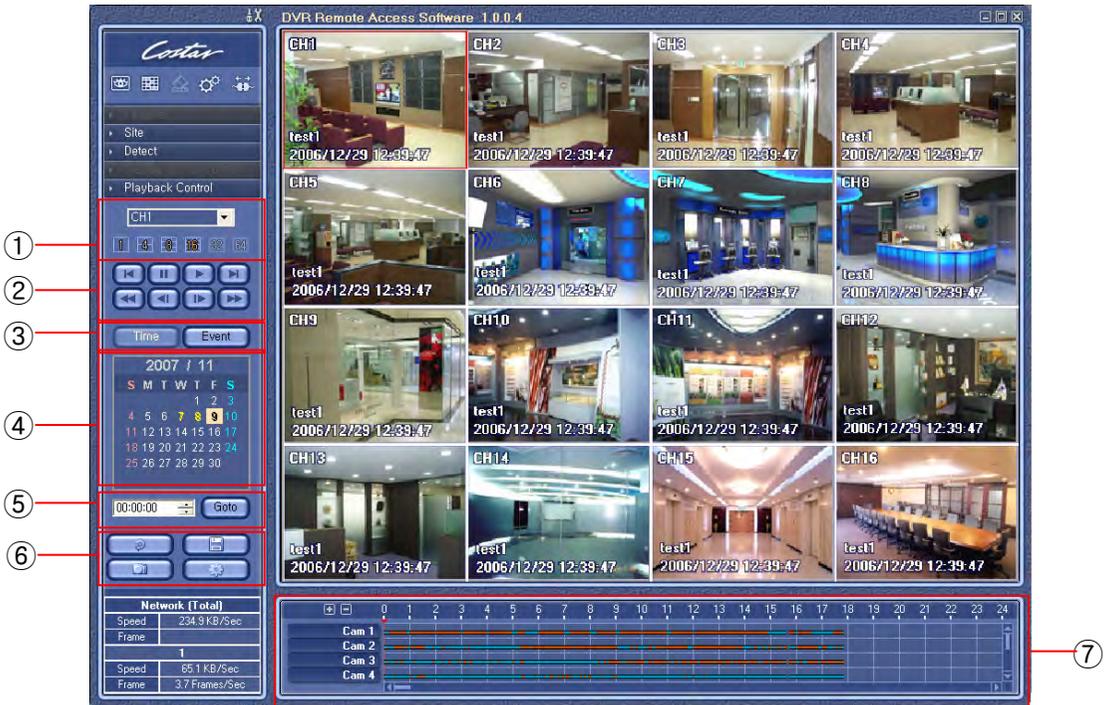
① Channel and display mode selection

② Play speed control buttons

	Fast backward.(1,2,4,8,16,32,64 times faster).
	Pause playback
	Fast forward.(1,2,4,8,16,32,64 times faster).
	Normal playback.

| ▶ | To play slowly forward.(1/2,1/4 times slower) |

| ◀| | To play slowly backward.(1/2,1/4 times slower) |

| ▶| | To go to the next image |

| |◀ | To go to the previous image |

③ Time : You can search by hour.
   Event : You can search the event file from event list.

④ Calendar : You can select the date directly. When you choose the date,
              all the list display in ⑦ window. If you choose 'EVENT', you
              can search the event ((Sensor Input, Motion Detection etc.).

⑤ Time Search : To go to the specific time directly using this feature

⑥   [⟳]   Update all the information.

     [💾]   Saving with AVI format into the PC

Save AVI	☒

Channel	CH1 ▼
Start	18:40:28 ⬍	End	18:45:28 ⬍

AVI Info

File Size	12043 KB	Resolution	720 x 480
Start Time	2007/11/13 18:40:28	Fps	30
Dur	00:31	Audio	No

Status	Saving 10%

Start	Stop
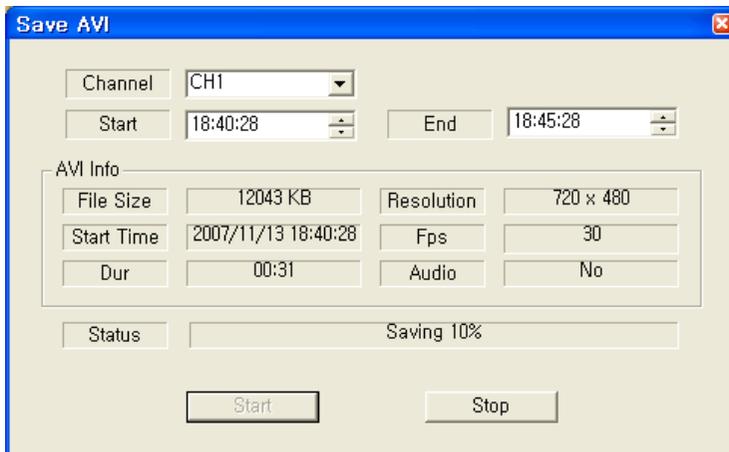
Enter the Start and End time. And press the 'Start'. It will start to send
the file to the PC and all the information of file will be displayed. After
sending the file, choose the filename and folder.

Snapshot : This is the feature to capture the image in LIVE or
PLAYBACK as well as saving and printing it. If you press
this button, following Image window will be appeared.
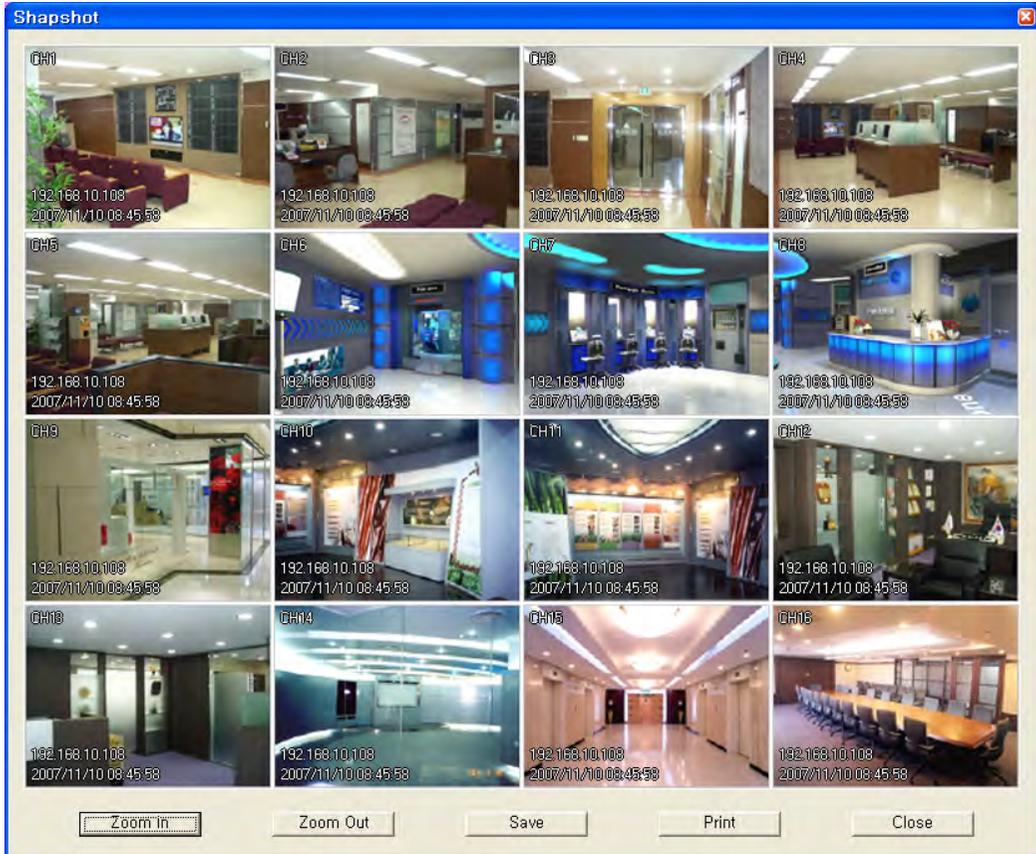
Zoom In : You can enlarge the image, every time you click the button, it will enlarge
the picture up to 4 times. (Click and hold left the mouse button in order to
move the image around.)

Zoom Out : Reduce enlarged screen, every time you click, it is reduced by 1/2.

Save Image : Save image as picture file. If you select where you want to save it
and input file name and press Save Button, file is created. (you
can save it as bmp or jpg file.)

Print Image : Print out still image through printer. You can print out the screen by
selecting printer and pressing Print Button.

Close : Close Image Dialog window.

Option : Changing the related setting.

OSD Option : This turns the OSD On/Off on live viewing.

Favorite Mode Max Fps : You can adjust the maximum frame rate individually upon 'Favorite' connection. If you choose 'AUTO', the program chooses the optimum rates based on the PC and network speed.

Search Option : Changing the search option

Deinterlacer : It will remove the tail when you play with the D1(720X480 or 720X576) resolution and low frame rate (below 5 frames per second).

Skip P Frame : If you check this box on the case of using the narrow bandwidth network such as PSTN, it makes it possible to real time playback by skipping the P frame.
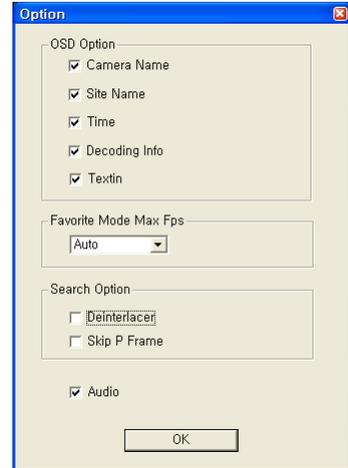
Audio : This turns the sound on/off.

⑦ This displays the recorded file by graphic bar. You can playback directly just one click with mouse on the recording bar . Blue color means the normal recording file and Red color means the event recording.

If you select 'EVENT' on ③, the following event list appears. You can play by choosing the wanted event.

On the screen, if you click the mouse left button, that channel will be full screen mode. If you want to go back the previous screen, click the mouse left button twice.

5-2-7. SETUP – Remote setup of DVR

 You can set the preferences of the DVR remotely. Click the 'SETUP' button to set up the DVR remotely and setup screen will appear.

There are two setup ways ; Dialog setup and interactive setup. The upper screen is interactive setup. You can setup the DVR remotely as you operate in front of the DVR. If you don't want to show the change to other person, you may choose dialog setup.

1) Interactive Setup : If you choose the 'Interactive' on 'Global Setting', you can set directly the DVR as you are in front of DVR.

The example of the interactive setup

The screen shot upon pressing 'MENU'

The screen shot upon using mouse

• **Attention**
If you choose the 'File System Check' on the interactive setup, the connection may close because it takes long time.

2) Dialog Setup : If you choose the 'Dialog' on 'Global Setting', the following screen appears.
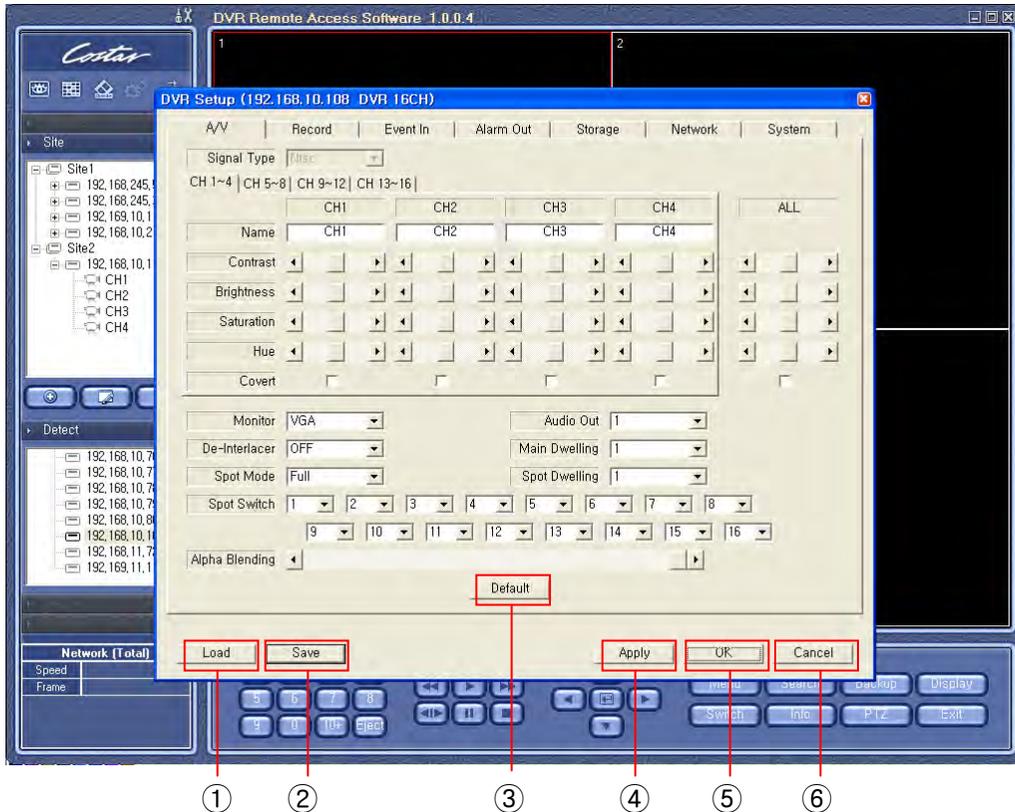
① Load : Loading the saved configuration file
② Save : Saving the current setting to the configuration file
③ Default : Loading the factory default
④ Apply : Applying the setting
⑤ OK : Exiting the setup with applying
⑥ Cancel : Exiting the setup without applying

1) A/V Setup
This feature is enable to set the preferences about the audio and video.
.
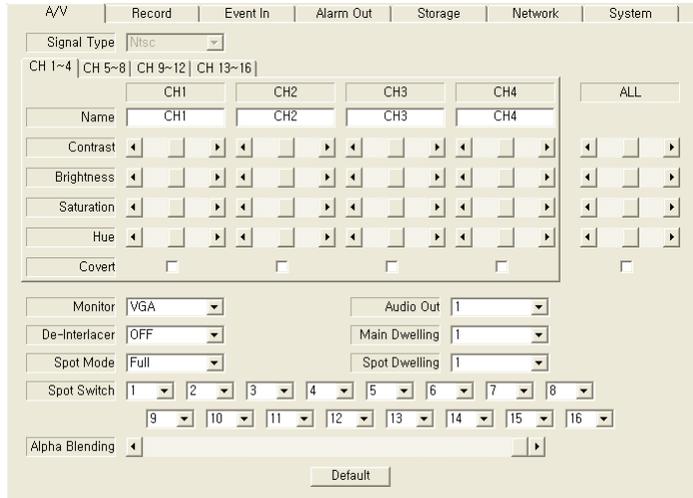
2) Record Setup
This feature is enable to set the preferences about the continuous and event recording. You can set the recording type, audio, resolution, FPS and quality individually.
.
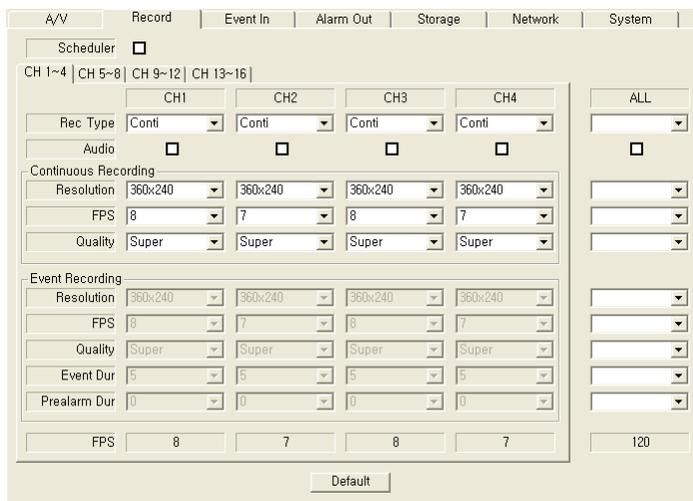
3) Scheduler Setup

If you check the 'Scheduler ☑' , the Scheduler setup screen appear. You can change the weekly scheduler through dragging the mouse. All the information about the group will be shown the lower box.
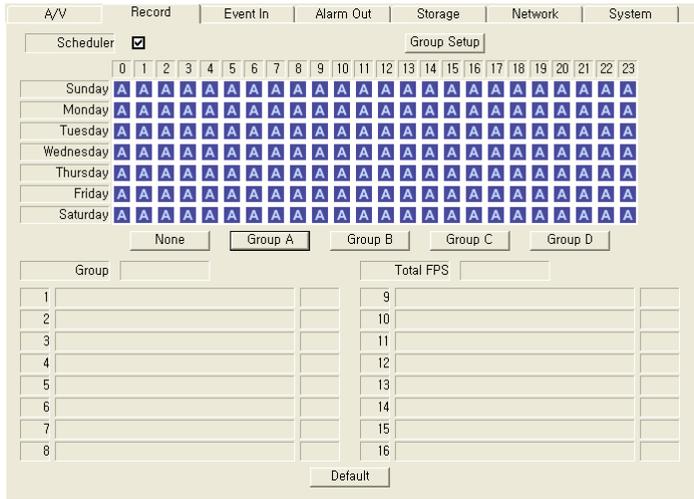
4) Rec Group
You can change the contents of the groups in here.
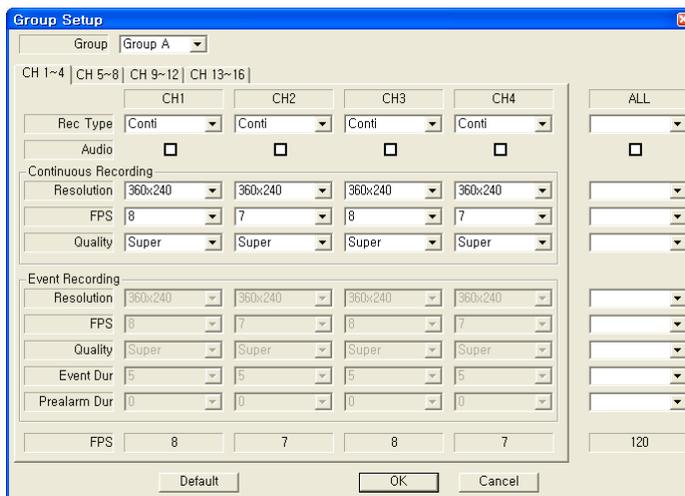
5) Event In
You can set the event input such as sensors and motion detection in here.
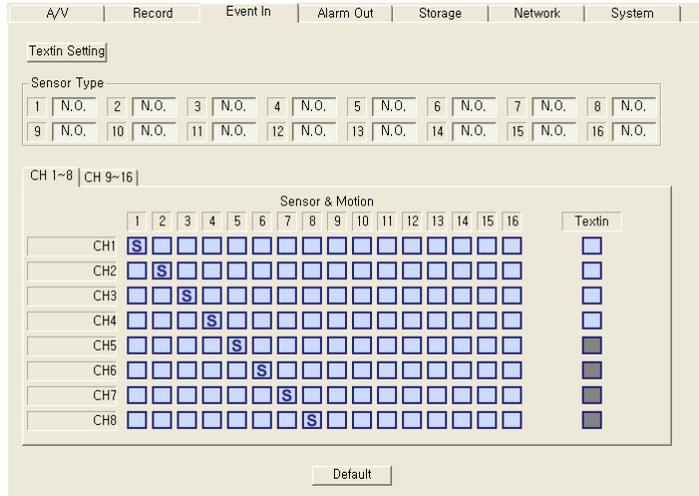
6) Text In
This is setup for ATM, cash register and POS.
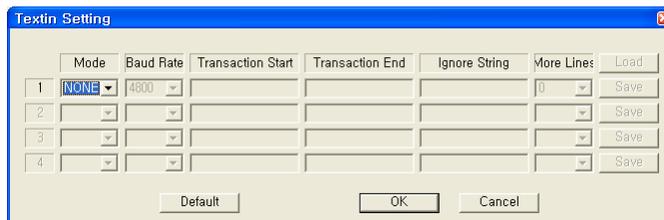
7) Alarm Out
You can set the alarm output regarding the event inputs including video loss in here.

8) Storage
This is setup for HDD and IDE devices.

9) Network
This is setup for network.

For DDNS setup, you can choose between the Costar DDNS and Dyndns.

10) System
This is setup for system.

After changing the preferences of the DVR, click the 'OK' to preserve the changing.
If you log on with Admin Password, you can change the user authorities.

5-3. Firmware Upgrade

After installing the client software, you can find the 'NetDownloader Program' in the window programs (Start -> programs -> DVR Client -> NetDownLoader) . Please execute this 'Net Downloader Program' to upgrade the firmware of the DVR.
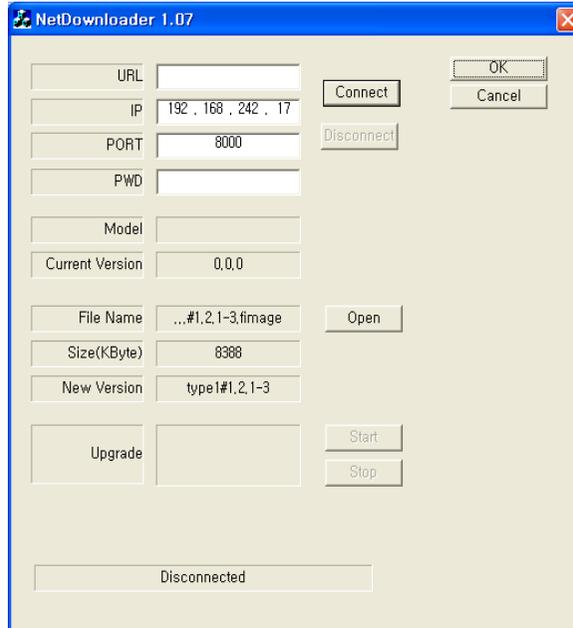
After typing the IP and password of the DVR, click the 'Connect' button. You can check the model name and the current version. If you can't see the model name and current version, you should check the network and try again.
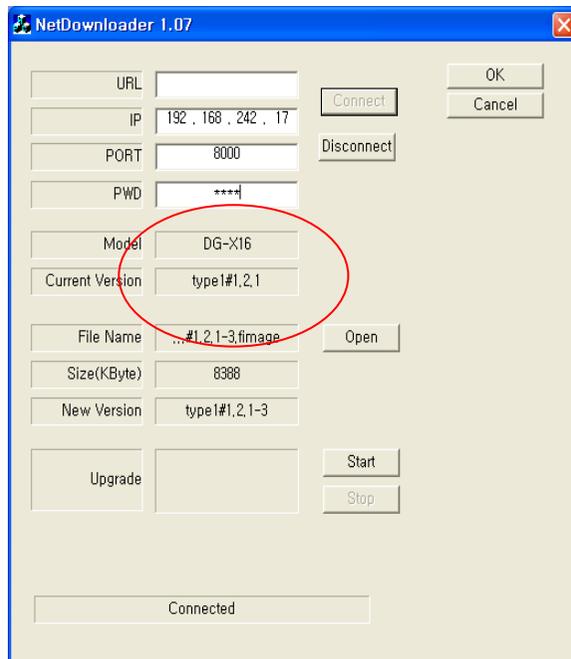
When you connect the DVR, click the 'open' button on the 'NetDownloader Program 'and select the update file and then press the 'start' button. You can see the below download window on the DVR screen.


☞ WARNING!!!

Do not turn off the power during download procedure. If you power off manually, all memory will be deleted **!**

※ After upgrading, DVR will reboot automatically. Before rebooting, do not operate manually **!**

5-4. Web browser Monitoring and Playback

This DVR has built in web server. You can monitor and control the PTZ camera using the web browser. Type the IP or domain address to connect the DVR. Then type the USER ID (admin or user) and the password of the DVR. You can see the live picture to click the 'connect' button.
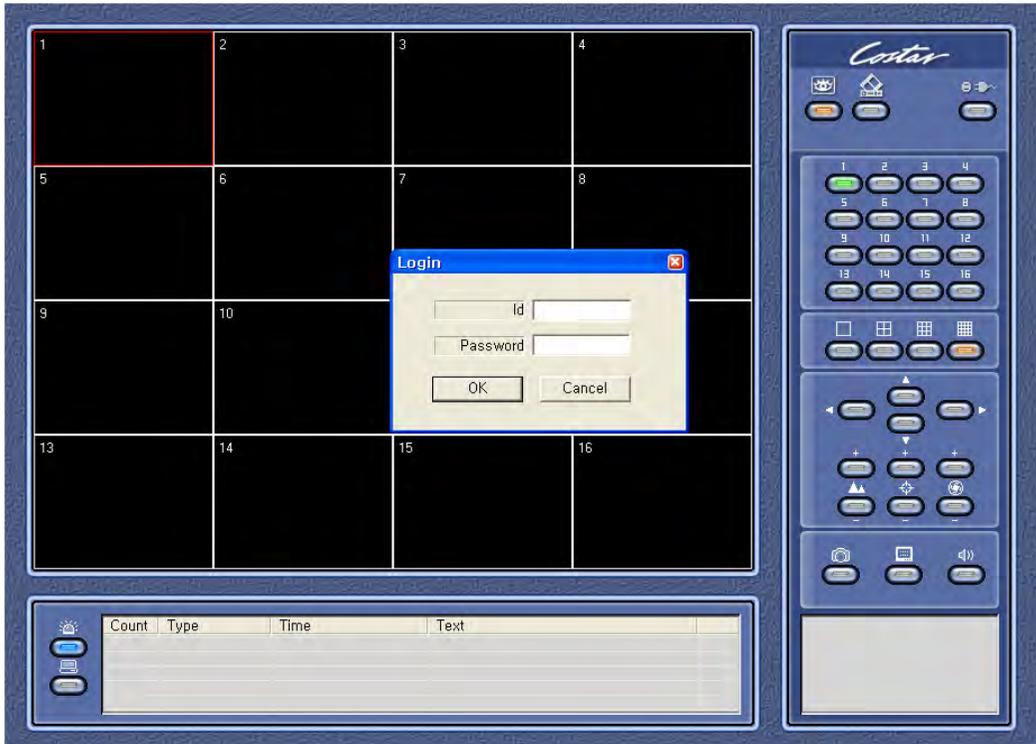
After typing the ID and password, press the 'connect' button, then you can see the live screen.
You can use all the same function with client software except 'Setup'. Refer to the 5-2 and 5-3 .

Trouble Shooting

Symptom	Checkpoint	Countermeasure
● Can't turn on power	● Is DVR connected to power supply cable?	● Connect power cable
● There is no image on monitor	● Are DVR and monitor turned on? ● Are cables of DVR connected?.	● Turn on power. ● Connect DVR cable.
● Only INFO OSD is on monitor 　and no image	● Is camera turned on? ● Are cables of DVR and monitor connected?	● Turn on camera. ● Connect cables of DVR and monitor.
● There is Video Loss message.	● Is NTSC/PAL setting normal? ● Is connection between DVR and camera normal?	● Check whether NTSC/PAL setting is SETUP properly ● Check whether DVR and camera are connected properly
● Can't search with Client Program.	● Isn't another user using same IP?	● Use it after another use finishes using it. If another user is searching DVR remotely with same IP, you can not search.
●Motion Detection doesn't work 　well	● Isn't it too bright or too dark? ● Isn't camera installed too far away? .	● Increase Motion Detection sensitivity. ● Install camera closer.
● There are differences between Live screen and actual condition during remote monitoring		● Since it buffers Live images, there might be changes with actual condition. (1~2 sec)
● Live doesn't work well in remote monitoring	● Is it set to True Color? ● Are PC specifications and VGA Card specifications are appropriate?	● Refer to recommended Client PC specifications in 4-1 Installing Client Program?

Warranty

This product guarantees free repair based on guarantee regulations only if the malfunction is caused while customers were using it properly.

Warranty Period
Warranty period begins from the day this product is delivered to customer.

Model Name	
Warranty Period	From　　.　.　. To　　.　　. . (for　　year)
User	Address :
	Company :
	NAME :　　　　　　　TEL :
Retailer	Address :
	Company :
	NAME :　　　　　　　TEL :

In case the malfunction is caused by one of following reasons, repair shall be provided as charged service.
- A) If cause for the malfunction is from external condition other than the product
- B) If malfunction is cased because user tried to reassemble the product
- C) If malfunction is caused by natural disasters such as fire, water disaster, thunder and others
- D) If malfunction is caused while transporting or moving the product after purchasing

1. All other refunds other than warranty repair for this product shall be based on actual cost.
2. Refund standard about product repair, exchange or repayment observe Regulations for Compensating Customers' Damage provided by the Economic Planning Board.
3. Repair part providing period is for five years from the day the production for this product stops.
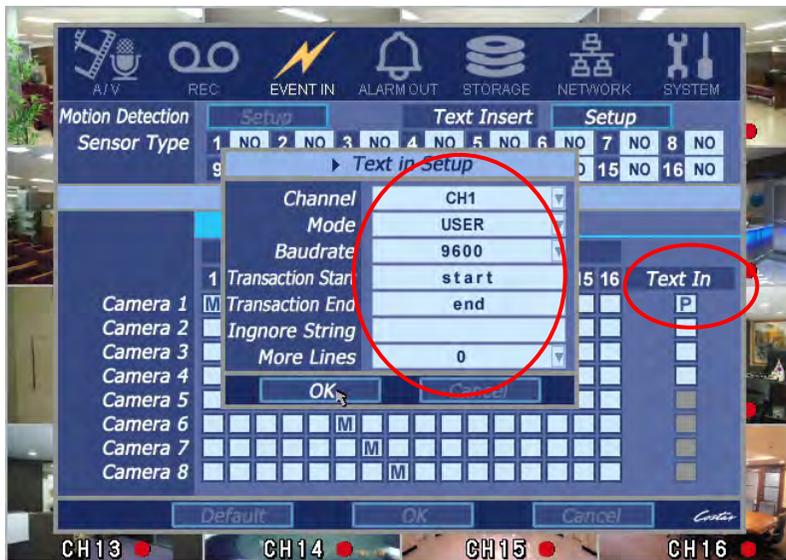
|		
	Address	
	Tel	
	Fax	
	URL	

Appendix A   How to Connect POS

1. Connect the RS232(COM port) between POS and DVR.

2. Set the preference of the POS on the DVR. If your POS is in the device list in the text in setup of DVR, you just simply choose that device. If not, you should choose 'USER' and manually set the values from the client software

3. To set manually, at first you should know the setting values of the POS. You can get the information from the POS setting screen.
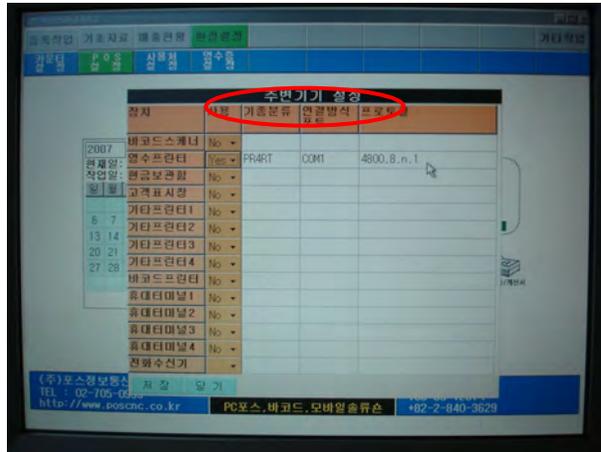
4. If your setting is correct, you can see the below DVR screen on transaction. (This is the popup screen. You can set popup in the 'Event In' setup.)

Appendix B　　How to connect the DVR Controller (TBT)

<Controller>　　　　<Junction Box>　　<8P RJ45 Modular Cable>

<1:1 D-Sub Cable>　　<12V DC Adapter>　　<DVR Rear RS232Port>

1.　Connect the controller and junction box using 8P Cable.
2.　Connect the 12V adapter to the junction box.
3.　Connect the DVR and the junction box using the 1:1 RS232 Cable (not twisted cable).

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1.　Choose the 'TBT' on the DVR controller menu under the 'System' setup.
2.　Select the same baudrate with DVR Controller.
3.　Set the wanted DVR ID.
4.　Save the setup pressing the 'OK'.
5.　You can control the DVR using the TBT controller.