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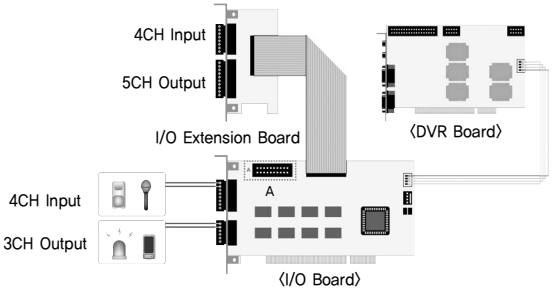
5-1. Prepare Sensor, Alarm, I/O Board and I/O Extension Board for I/O Board Installation.

< 8 port In/Out Connection>



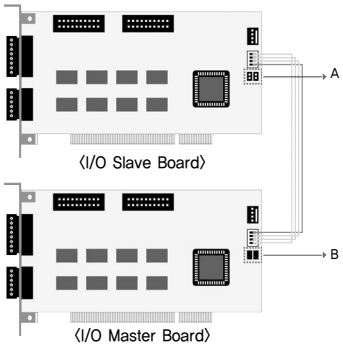
※ A : Industrial Case System can use In/Out port separately when additional Back Panel is available.

< 16 port In/Out Connection>

To use 16 port In/Out,

A : Slave Board must remove jumper.

B : Master Board must install jumper.

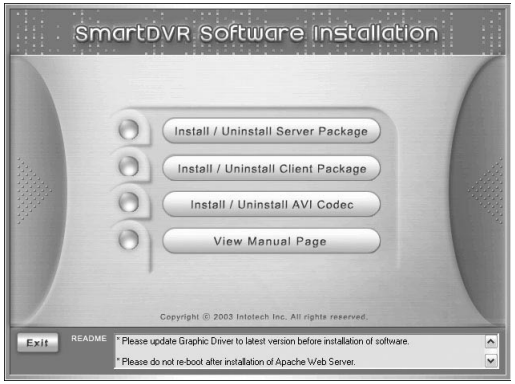


1. Software Installation

You can install SmartDVR Software by using SmartDVR Formula CD or downloading from INTOTECH website, www.intotech.co.kr. Software CD consists of Server Package (Main program, WebClient program, Apache HTTP Server program), Client Package (NetClient program) & AVI Codec. User Manual is also available from SW CD.

[Main Program Installation]

Insert SmartDVR Formula CD into CD-ROM drive or run DvrSetup.exe file; the following installation screen will appear .



Click the icon below and Main Program installation will automatically proceed.

Installation Step : Apache HTTP Server (Web Server) -> WebClient -> SmartDVR Formula

1. *SmartDVR Apache HTTP Server (Web Server) Installation*

1–1 Installation wizard tool will appear. Click [Next].

1-2 Read the License Agreement and if you agree to the contents, select [I accept…] and click [Next].

1-3 Click [Next] after checking server information of Apache HTTP Server.

1–4 Insert Network Domain, Server Name, Administrator's E-mail Address.

(This procedure is only a formality. In general cases, follow example)

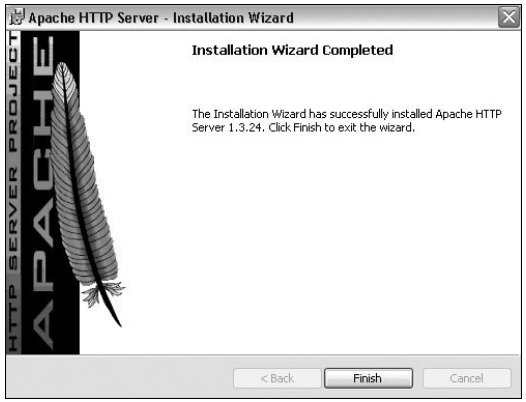
Select [Run as a service for All Users – Recommended] and click [Next].

1-5 Select Setup Type as [Complete] and click [Next].

1-6 Click [Next] without change of setting. Note: Do not change the directory!

1-7 After the setting is finished, click [Install] and start installation.

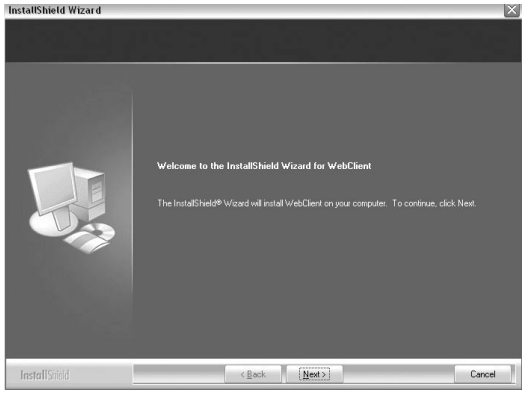
1-8 After the installation is done, click [Finish].



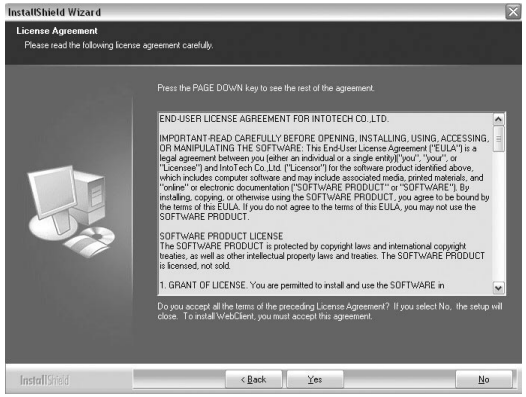
1-9 After the installation is finished, a message confirming the change of the Server port of Apache will appear.

2 SmartDVR WebClient Installation

2-1 After the Installation Wizard Tool is appeared, click [Next].



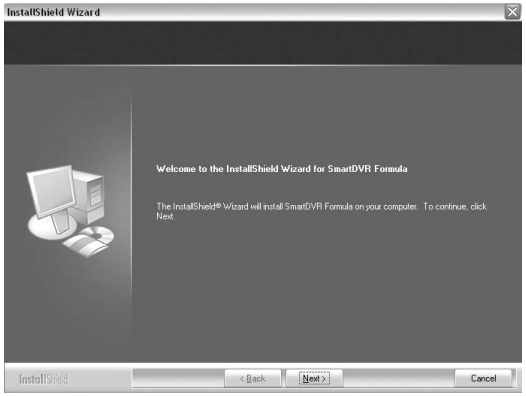
2-2 Check the contents of License Agreement; if you agree to the contents, click [Yes].



2-3 After the installation is done, click [Finish].

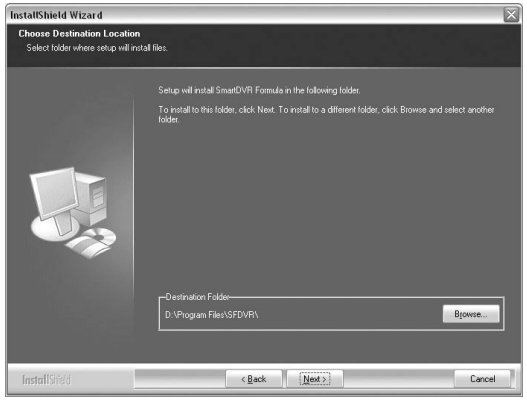
3 SmartDVR Formula Installation

3–1 After Installation Wizard Tool is appeared, Click [Next].



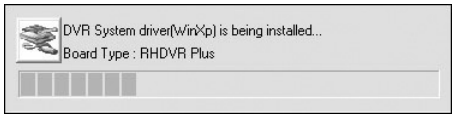
3–2 Check the details of License Agreement; if you agree to the contents, click [Yes].

3-3 After choosing [Destination Folder] for installation, click [Next].

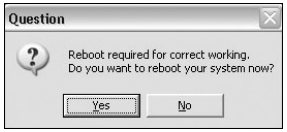


3-4 After the installation is done, click [Finish].

3-5 Driver Installation: Wizard automatically installs drivers according to each board type.



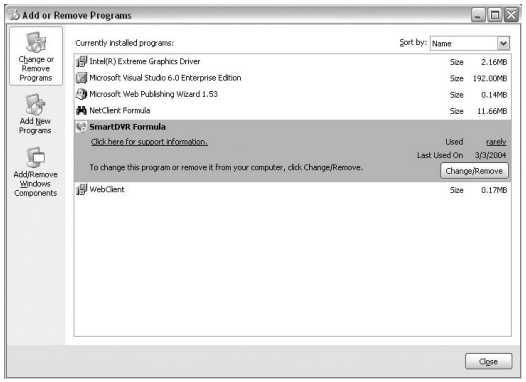
3-6 Reboot PC after all the installation.



4. SmartDVR Formula Uninstallation

4-1 Goto [Start] – [Control panel] and click [Add/Remove Program].

4-2 Select [SmartDVR Formula] and click [Change/Remove].

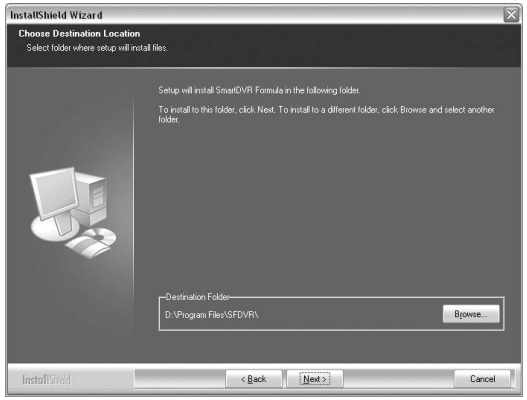


Click the icon below and NetClient Program installation will proceed.

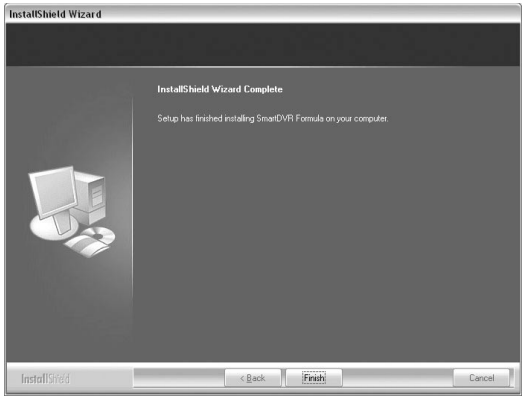
5 NetClient Installation

5-1 After the Installation Wizard Tool is appeared, click [Next].

5-2 After choosing [Destination Folder] for installation, click [Next].



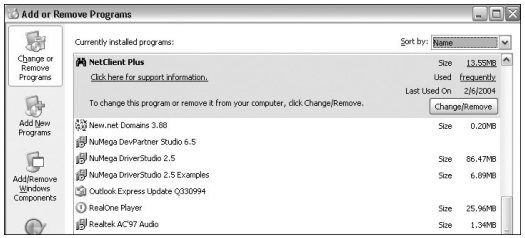
5-3 After the installation is finished, click [Finish]



6 NetClient Uninstallation

6-1 Goto [Start] – [Control panel] and click [Add/Remove Program].

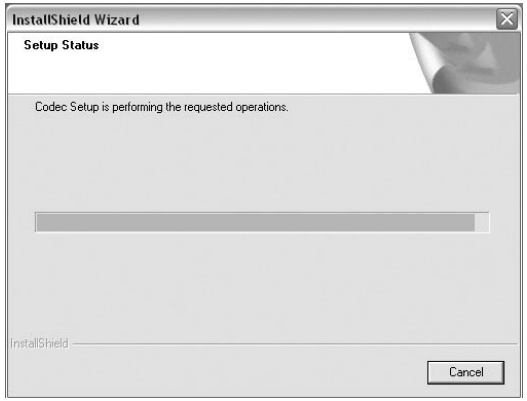
6-2 Select [NetClient Plus] and click [Change/Remove].



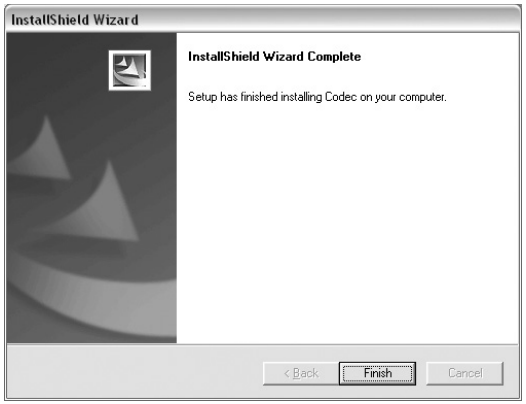
AVI Codec Installation

Click the icon below and AVI Codec installation will proceed.

7-1 AVI Codec Installation diagram.



7-2 After the installation is finished, click [Finish].

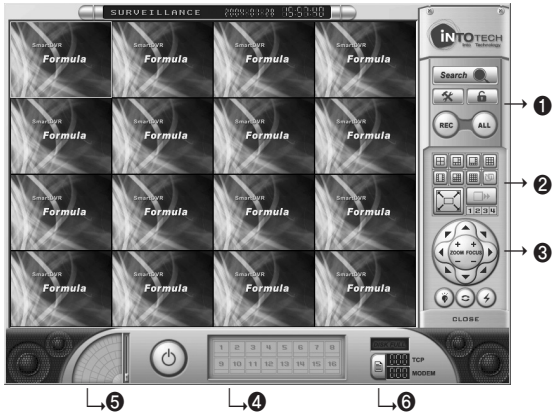


3 Main Program

01. Main Program

Main Program enables users to monitor images through PC monitor. The main program supports the following functions: record images, search & playback images and control camera remotely. Image can also be transmitted over the network to any remote site.

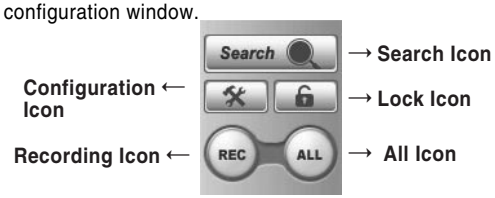
<Main Program>



1 : Control Panel
2 : Screen Partition Panel
3 : Pan/Tilt Control Panel
4 : Camera Selection Panel
5 : Audio Volume Control Bar
6 : Status Information Panel

1-1 Control Panel

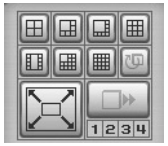
Control Panel consists of the following icons: This enables users to run search programs, manually record images and open configuration window.



- **Search Icon:** Search Option.
- **Configuration Icon:** To change setup of program.
- **Lock Icon:** Supports password lock function for Server security.
- **Recording Icon and All Icon:**
  Record only certain channels – Enable users to manually select certain channels for recording.
  Record all channels – Click [All] icon and click [REC] icon to record all channels.

1-2 Screen Partition Panel

Support 7 kinds of various screen partitions, full-screen and sequence rotation display mode etc.



[Screen Partition Panel]

1-3 Pan/Tilt Control Panel

Use of Pan/Tilt Camera,

1.Select correct [Receiver] protocol from [Configuration].

2. Select the channel which is connected to Pan/Tilt camera.

3. Click various buttons from Pan/Tilt Control Panel to control camera. (Pan/Tilt/Zoom/Focus).

Pan/Tilt & Zoom/Focus Button

1-4 Camera Selection Panel
Click specific channel from Camera Selection Panel to enlarge and view images.

1-5 Audio Volume Control Bar
If Audio input is configured from [Configuration] - [General], audio volume can be controlled from Audio Volume Control Bar.

Disk Full

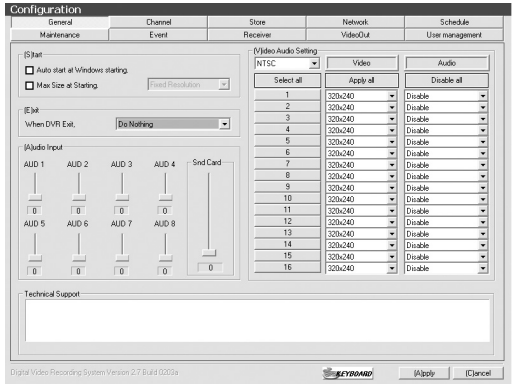
Internet(TCP) Conection CH No.
Modem Conection CH No.

1-6 Status Information Panel
Indicates number of connection from Internet(T C P) & modem.
Disk Full will be indicated in red color if there is no space left in HDD.

2 *Configuration*

Configuration Folder consists of [General], [Channel], [Store], [Network], [Schedule], [Maintenance], [Event], [Receiver], [Video Out] and [User Management] sub-panels. Configuration is used for setting Resolution, Image Quality, Motion Detected Recording, I/O, Schedule, Pan/Tilt Receiver Protocol, Network IP setup, etc.

1-1 General



Start Section
- Auto Start: DVR program automatically executed when system is turned on.
- Max size at starting: DVR Program is setup as the exact size of monitor resolution to prevent display of other programs.

Exit Section
Option: Only DVR program shuts down after closing DVR Program OR the complete system shuts down.
(Computer Power OFF).

Audio Input

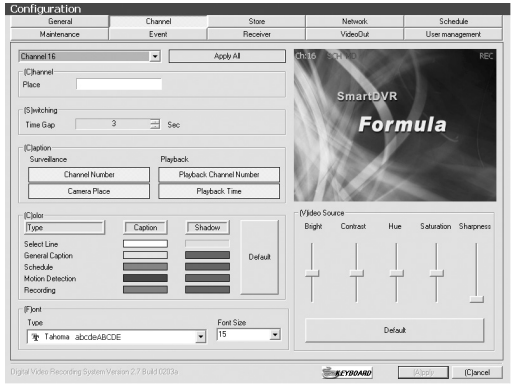
Setup the Gain of Audio Input.

- AUD1 ~ AUD8 is gain control for Audio Input from Capture Board. Set the gain to minimum(0) when use of amplified mic. (e.g.: camera built-in mic)
- Snd Card is audio volume control using Sound Card as output device.

Video/Audio Setup

- Setup Camera Input Type NTSC – Korea, USA, Japan, Australia(some region), North Amercia(some region) etc.
  PAL – Region excluding NTSC area(China, Europe, South America, etc.)
- Channel Selection – Select channel for surveillance
- Resolution Setup – Image Resolution Setup(320X240 OR 640X480)

2 Channel



Channel(Caption) Input

Insert description of camera surveillance area

Caption Setup

- Surveillance Mode – Setup to indicate channel number and camera surveillance area caption in Main Program.
- Search Mode – Setup to indicate channel number and recorded time in Search Program.

※ Caption Font and Color Setup – Setup caption font & color of caption according to channel number, camera surveillance area, recorded time etc.

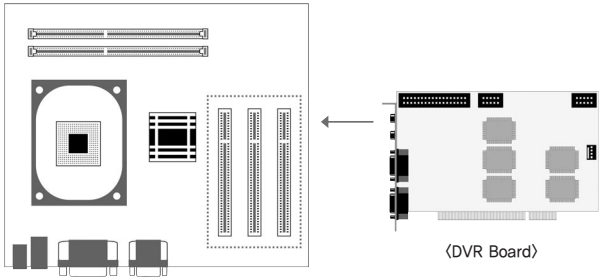
※ Video Source – Setup Brightness, Contrast, Hue, Saturation and Sharpness.

1. Hardware Installation

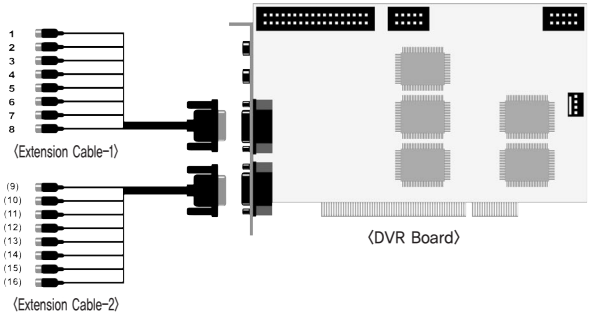
Please check contents before installation: DVR Board, Extension Cable, Audio & PTZ Installation, etc., if you are missing any parts please contact your local dealer.

1. DVR Board & Extension Cable Installation

1-1. Insert the DVR Board to an empty PCI Slot in DVR PC.

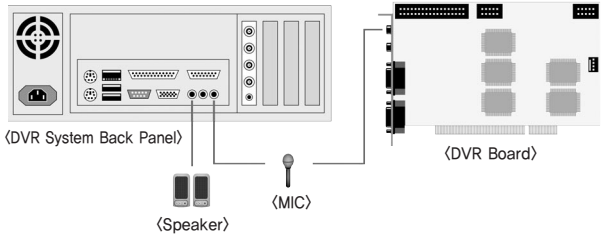


1-2. Use Extension Cable to connect cameras.



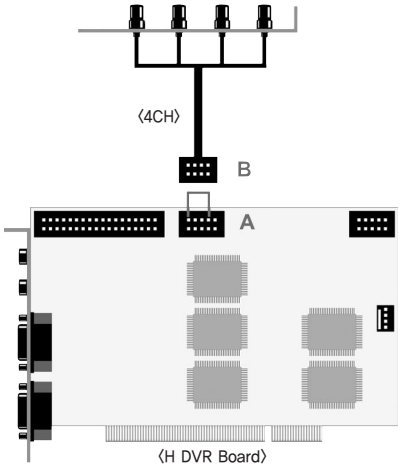
2. DVR Audio Installation

2-1. Prepare DVR PC and MIC.
2-2. Connect the MIC to the Mainboard MIC Port of DVR PC OR the Audio IN port on DVR Board. Please connect the Speaker to the back panel of DVR PC.

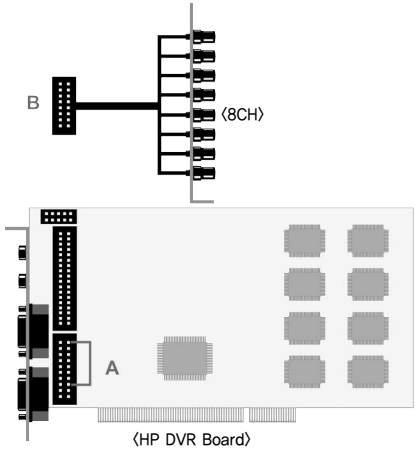


※ Either connect the MIC to Audio IN port of DVR Board OR Mainboard MIC port.

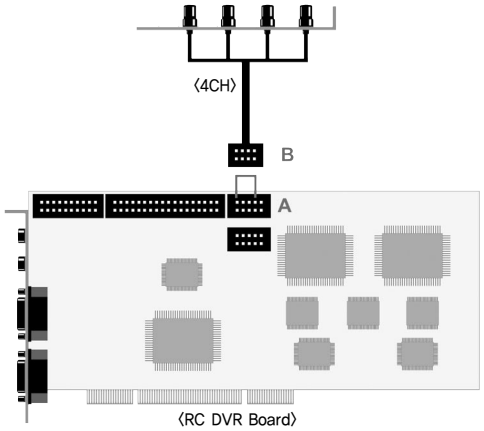
- H Board: Connect the 4CH MIC(B) to DVR Board(A) starting from the left.



- HP Board: Connect the 8CH MIC(B) to DVR Board(A) starting from the top.



- RC Board: Connect the 4CH MIC(B) to DVR Board(A) starting from the left.



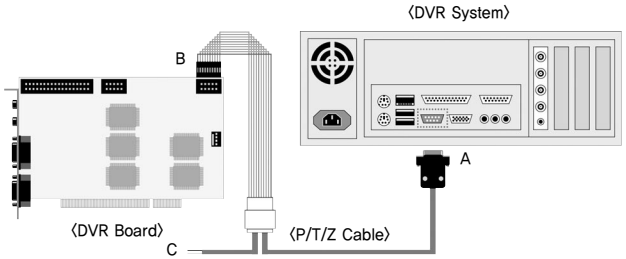
3. P/T/Z Installation

3-1. P/T/Z Cable

[A] Cable : Connect to COM port of DVR PC

[B] Cable : Connect to DVR Board

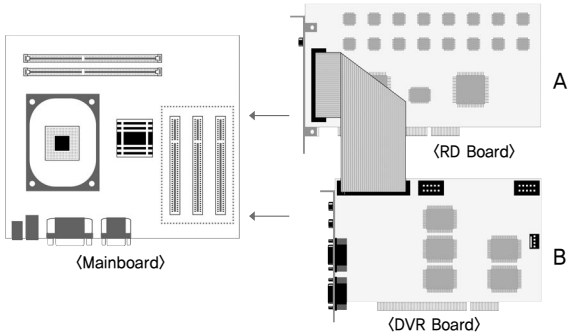
[C] Cable : Connect to Receiver Cable



4. Real Display(RD) Board Installation

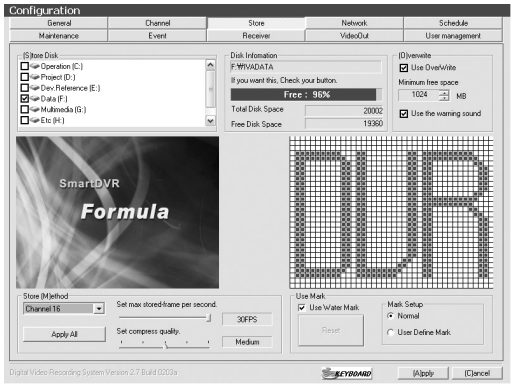
4-1. Insert the Real Display Board into an empty PCI Slot in DVR PC.

4-2. Use Cable to connect Real Display Board with DVR Board.



※ Real Display Board cannot be used alone, it must be used with S, H, HPLUS DVR Boards.

2 Store



※ Store Disk – Indicates installed HDD Capacity.
Check(√) HDD to use as recording device
Notice) Recommend to disable C Drive(Operating System installed) as recording device and use other drives(D, E, C).

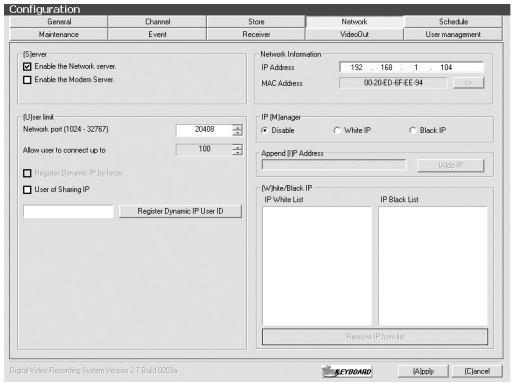
※ Overwrite – Setup overwrite to delete the oldest data when free HDD is lesser than minimum free space allowed.

※ Setup compression quality & max stored-frame per second. Recording size of 1 frame according to image quality & resolution is as followings:

Image Quality	Resolution	Recording Size(KB)
Low	320X240	2.5
Low	640X480	6
Medium	320X240	3.7
Medium	640X480	10
High	320X240	5.0
High	640X480	15

※ Watermark
Use Watermark to prevent image tampering of every recorded frame.
- Default: Watermark will be inserted as the word 'DVR'.
- User Define Mark: Watermark will be inserted as user defined word for easy identification or organization.

3 Network



※ **Server Setup**

- **Enable the Network Server:** Setup System to be used as Internet Server. Server image can be viewed from remote Client Program OR Internet Web Browser by using private line connected to internet.
- **Enable the Modem Server:** Setup System to be used as PSTN Network Server. Server image can be viewed from remote Client Program by using modem connected through PSTN Network(Internet Web Browser not supported.).

※ **Network Information**

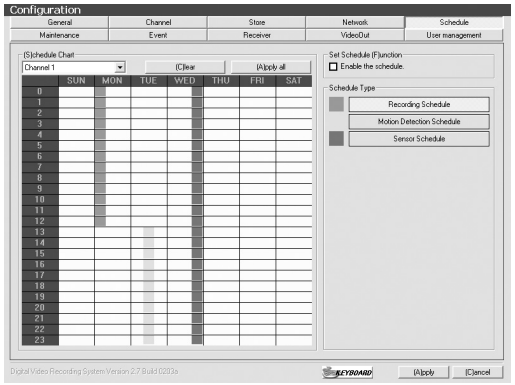
System IP Address & MAC Address

- Direct connection to Server is possible from remote Client Program OR Internet Web Browser when use of Fixed IP.
- Direct connection to Server is possible through DHS Server from remote Client Program by using DHS Service provided by our company when use of Dynamic IP.

※ **User Limit**

- IP Router User: Check [User of Sharing IP] if DVR System is connected to internet using IP Router.
- Register Dynamic IP User ID: ID must be registered to use DHS Service when use of Dynamic IP. Contact our company for more detailed information regarding Dynamic IP.

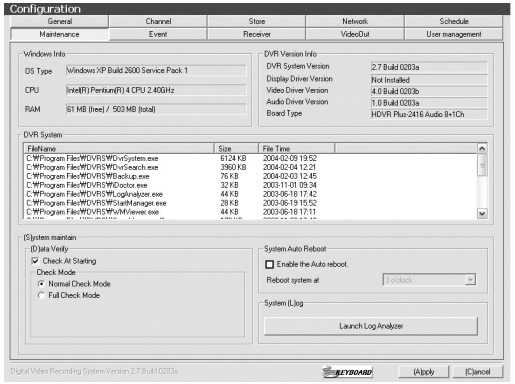
4 Schedule



Recording Modes: Full Recording, Motion Detected Recording, Sensor Recording is possible for a specific date, time and channels.

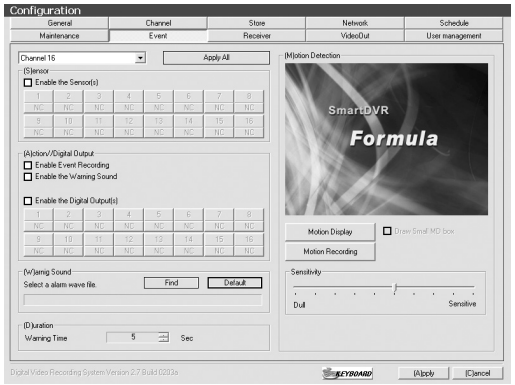
e.g.) Setup Recording Schedule for Monday 0~12 hour, Setup Motion Detection Recording Schedule for Tuesday 13~23 hour, Setup Sensor Recording Schedule for Wednesday 0~24 hour.

5 System Auto Reboot



Setup specific time to automatically reboot system.

6 Event



※Sensor Input

- Check [Enable the Sensor] and configure the channel of camera and sensor input channel.

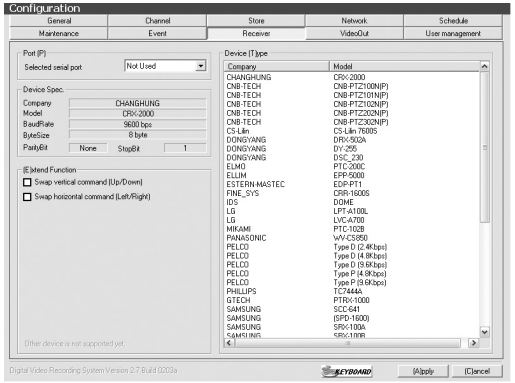
※ Enable Event Recording

- Use Digital Output OR auto-recording when there is sensor input signal.
  e.g.) Configure 1,2,3,4 Sensor Input for CH1 Camera & 5,6,7,8 Digital Output. Enable Event Recording & Warning Sound from speaker.

※ Motion Detection

- Motion Detection Area Setup, Motion Detection Sensitivity Setup
- Setup MD Area: Setup rectangular area in screen using the mouse.
- Motion Display: Indicate the specific area by changing color when motion is detected.
- Motion Recording: Record when there is movement in image

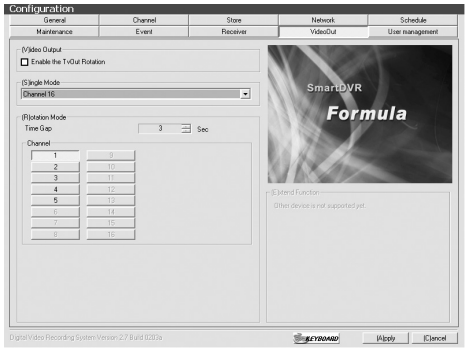
7 Receiver



※ Port Setup: Select serial port to use PAN/TILT Camera OR Receiver.

※ Device Type: Select protocol of receiver from Device Type Panel.

8 Video Out

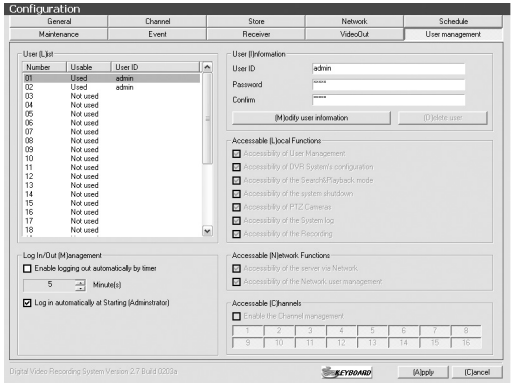


Video Out function can be used by Loop-Through to analog monitor.

※ Enable the TvOut Rotation :
One channel can be viewed during the directed time gap or various selected channels can be viewed in timed sequence.

※Single Mode : Only the selected one channel is viewed

9 User Management



User Managemet can give different authorization levels for management in accord to user IDs.

⁎Insert & Modify User Information

Insert ID & Password and click
[Modify User Information] icon to add new user.

⁎ Accessible local Functions

Function to manage DVR System in installation site - Support setup for all the functions of DVR.

⁎ Accessible Network Functions

Setup of only limited function is available for users connecting from outside using client program

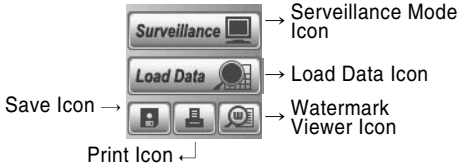
⁎ Accessible Channels

Direct only certain channels to be viewed according to user IDs.

02.Search Program

Search Program allows users to search by time/date & play recorded images and audio. Support saving of still image by .bmp format, printing of still image, watermarked .bmp file of each image.

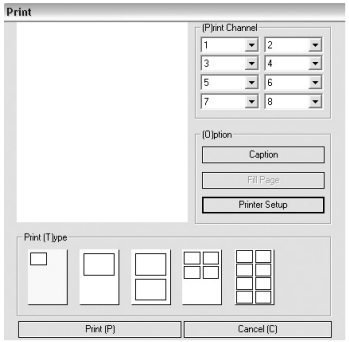
1-1 Control Panel



- **Surveillance Mode Icon:** Exit search program and converts to Survillance Mode(Main Program).
- **Load Data Icon:** Open Calendar for loading data.

Calendar

MD ONLY Icon: Load Motion Detected data only.
LOAD Icon: Load data of selected date from calendar.
- Save Icon: Save image of selected channels
- Print Icon: Print image of selected channels using printer.



Print Channel: Select channel for printing images.

Option: Print image with caption OR goto printer setup.

Print Type: Setup print layout

Watermark Viewer Icon: Run Watermark Viewer.

Watermark Viewer

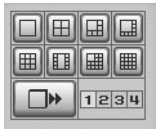
Open saved .bmp file to check if there is any image tampering & check if watermark is identical with original image.

1-2 Playback Control Panel

[Playback Control Panel]

Supports playback options: 1x, 4x playback, reverse playback, frame by frame playback.

1-3 Screen Partition Panel



[Screen Partition Panel]

Support 8 kinds of various screen partition display.

1-4 Data Search Process Bar

Hour Button ←

Minute Bar ←

- **Hour Button:** Recorded data of selected hour is indicated in red color.
- **Minute Bar:** Minute of recorded data is indicated 0~59min. and recorded data is indicated in red color.

1-5 Search Audio Volume Control Bar

Control audio volume when replay of recorded data.