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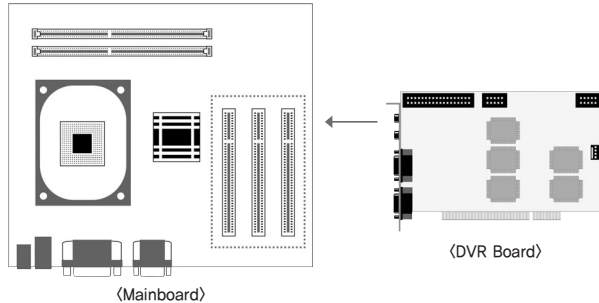
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## 1. Hardware Installation

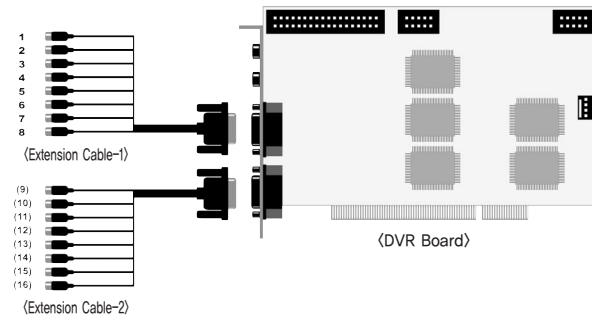
Please check contents before installation: DVR Board, Extension Cable, Audio & PTZ Installation, etc., if you are missing any parts please contact your local dealer.

### 1. DVR Board & Extension Cable Installation

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



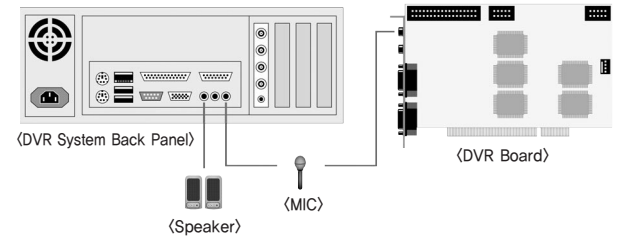
1-2. Use Extension Cable to connect cameras.



### 2. DVR Audio Installation

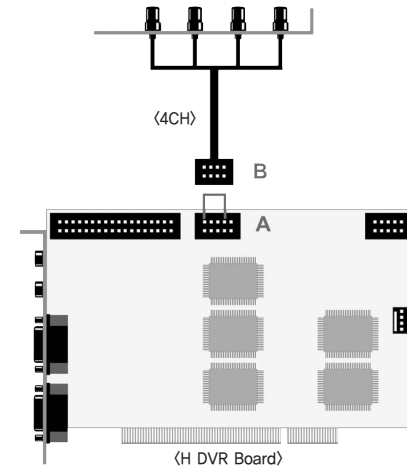
2-1. Prepare DVR PC and MIC.

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.

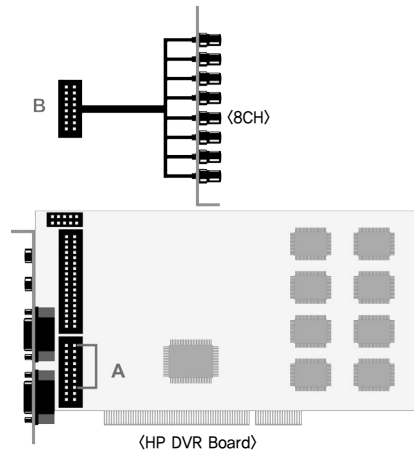


※ Either connect the MIC to Audio IN port of DVR Board OR Mainboard MIC port.

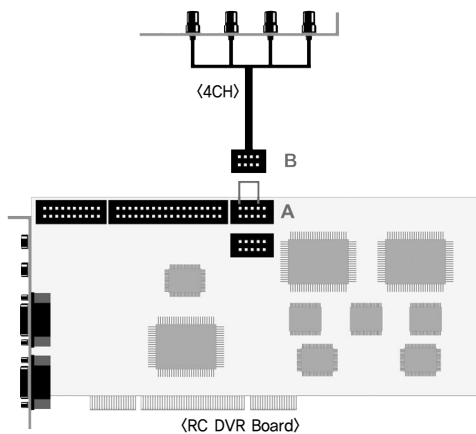
- H Board: Connect the 4CH MIC(B) to DVR Board(A) starting from the left.



- 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.



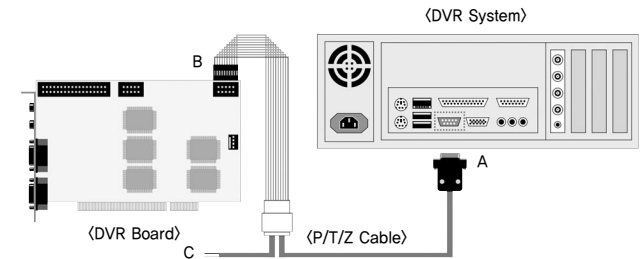
### 3. P/T/Z Installation

#### 3-1. P/T/Z Cable

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

[B] Cable : Connect to DVR Board

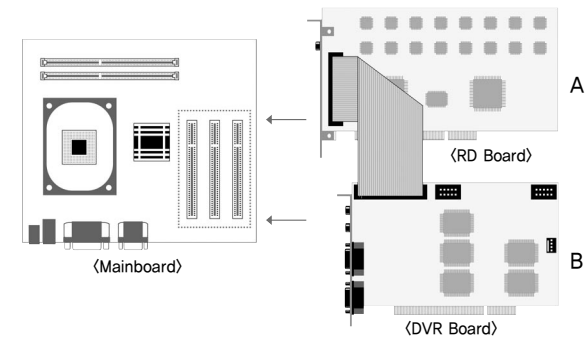
[C] Cable : Connect to Receiver Cable



### 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.

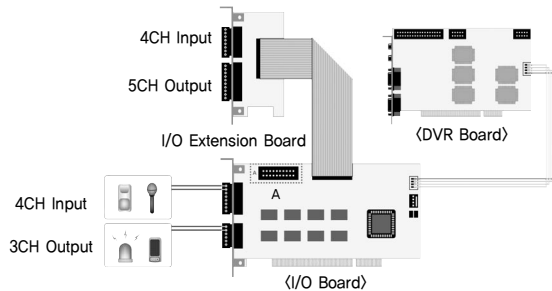


※ Real Display Board cannot be used alone, it must be used with S, H, HPLUS DVR Boards.

### 5. I/O Board Installation

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

#### < 8 port In/Out Connection >



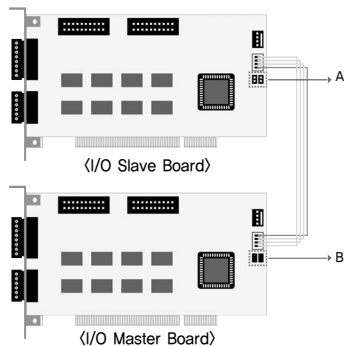
※ A : Industrial Case System can use In/Out port separately when additional Back Panel is available.

#### < 16 port In/Out Connection >

To use 16 port In/Out,

A : Slave Board must remove jumper.

B : Master Board must install jumper.

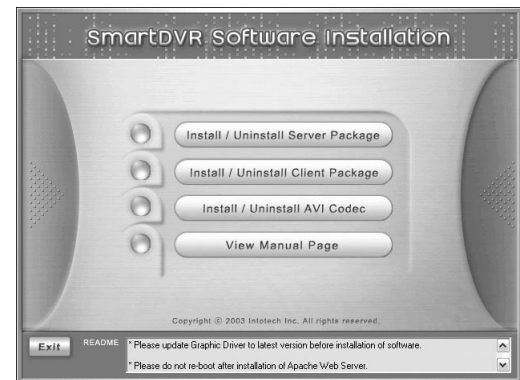


## 1. Software Installation

You can install SmartDVR Software by using SmartDVR Formula CD or downloading from INTOTECH website, [www.intotech.co.kr](http://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 .



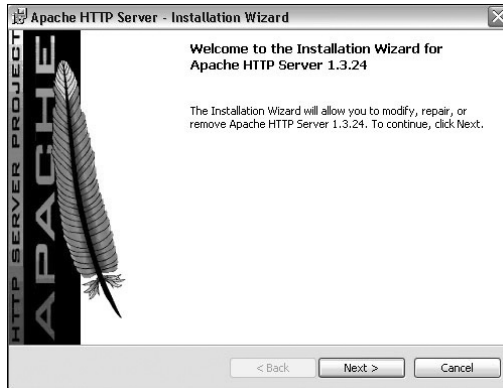
Click the icon below and Main Program installation will automatically proceed.

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!



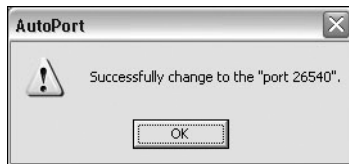
1-7 After the setting is finished, click [Install] and start installation.



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.

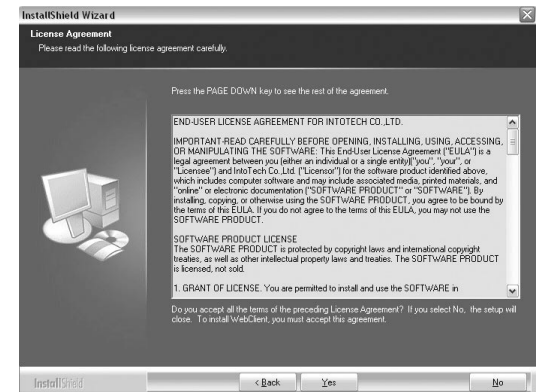


## 2 SmartDVR WebClient Installation

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].

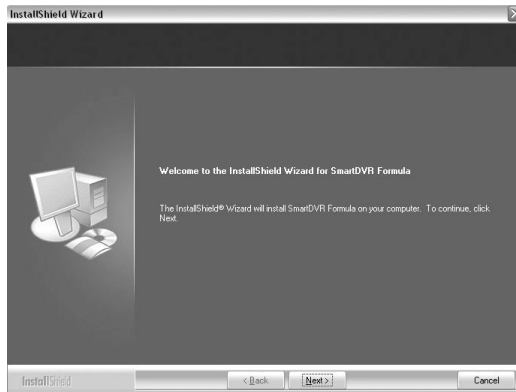


2-3 After the installation is done, click [Finish].

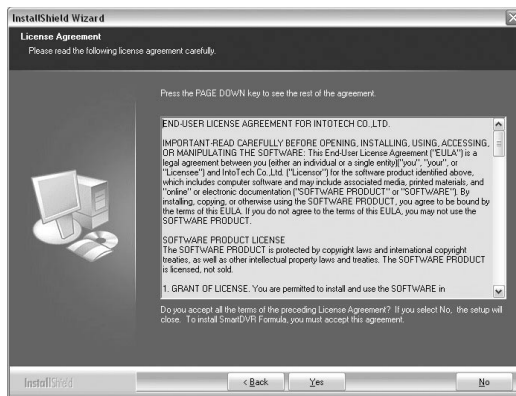


### 3 SmartDVR Formula Installation

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].

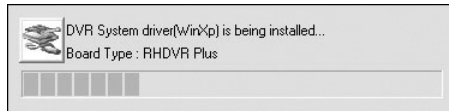


3-4 After the installation is done, click [Finish].

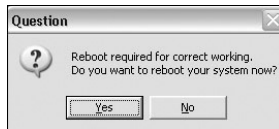




3-5 Driver Installation: Wizard automatically installs drivers according to each board type.



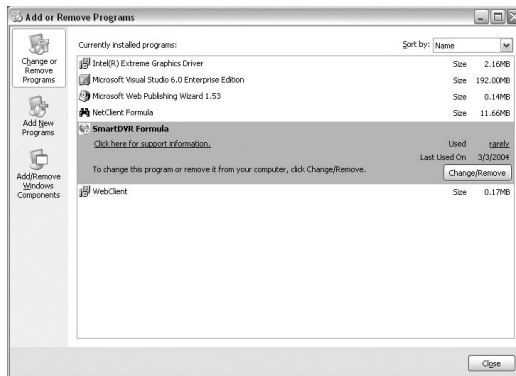
3-6 Reboot PC after all the installation.



#### 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.

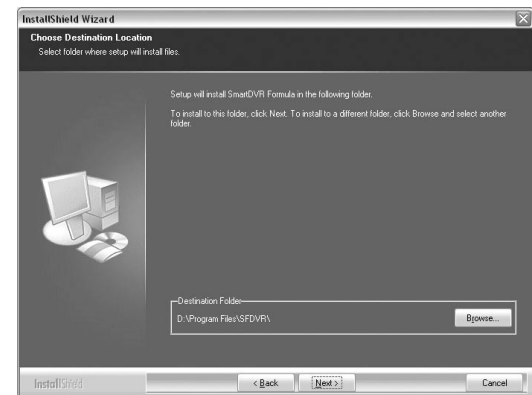


#### 5. *NetClient Installation*

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



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



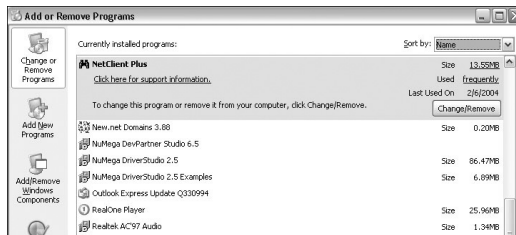
5-3 After the installation is finished, click [Finish]



## 6 NetClient Uninstallation

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

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

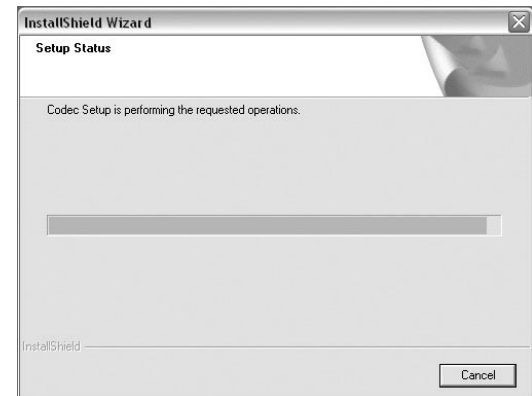


## AVI Codec Installation

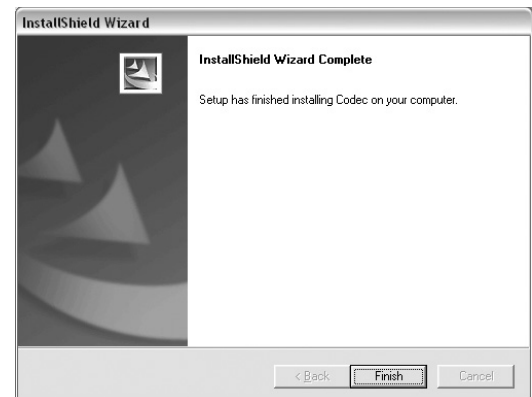
Click the icon below and AVI Codec installation will proceed.



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.

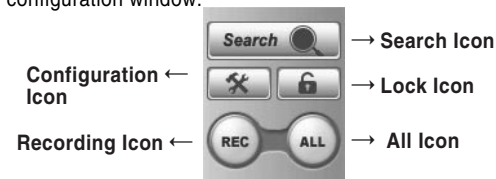
<Main Program>



- 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

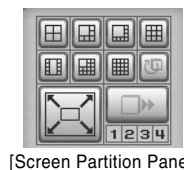
Control Panel consists of the following icons: This enables users to run search programs, manually record images and open configuration window.



- **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.

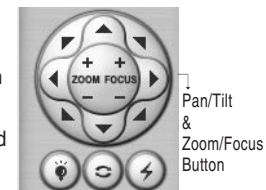
#### 1-2 Screen Partition Panel

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



#### 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).





**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

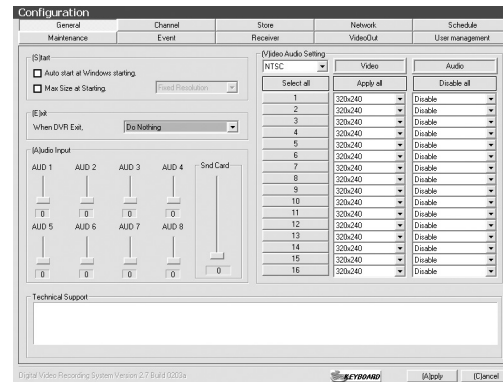
Internet(TCP) Connection CH No.  
Modem Connection CH No.

**1-6 Status Information Panel**  
Indicates number of connection from Internet(TCP) & 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

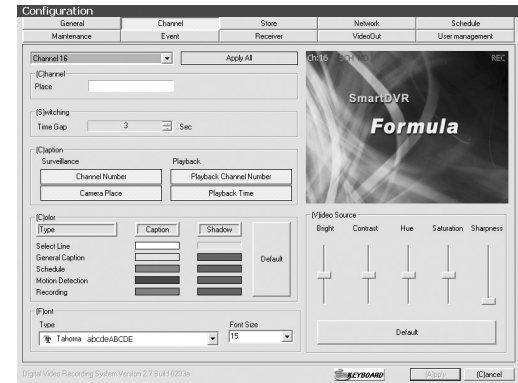
Setup the Gain of Audio Input.

- 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 America(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



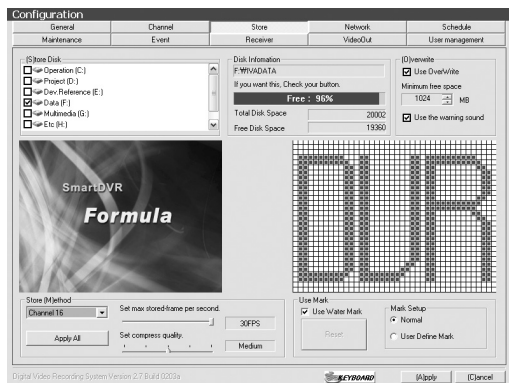
### Channel(Caption) Input

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.

## 2 Store

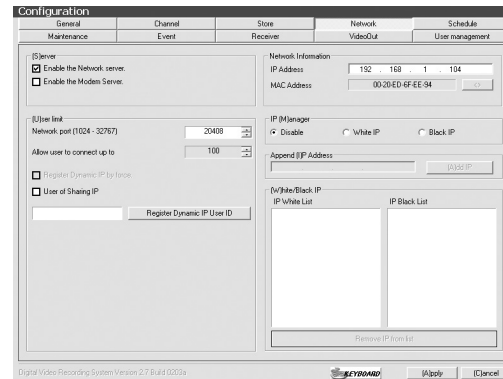


- ※ **Store Disk** – Indicates installed HDD Capacity.  
Check(✓) HDD to use as recording device  
Notice) Recommend to disable C Drive(Operating System installed) as recording device and use other drives(D, E, C).
- ※ **Overwrite** – Setup overwrite to delete the oldest data when free HDD is lesser 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 follows:

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

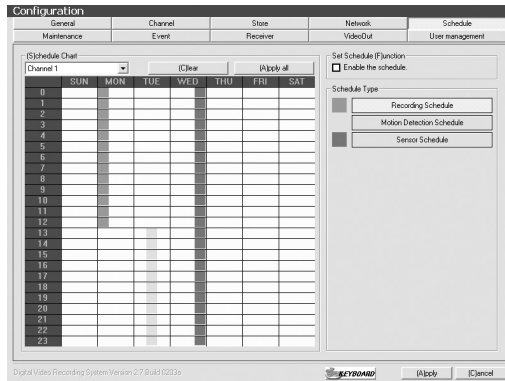
- ※ **Watermark**  
Use Watermark to prevent image tampering of every recorded frame.  
- Default: Watermark will be inserted as the word 'DVR'.  
- User Define Mark: Watermark will be inserted as user defined word for easy identification or organization.

## 3 Network



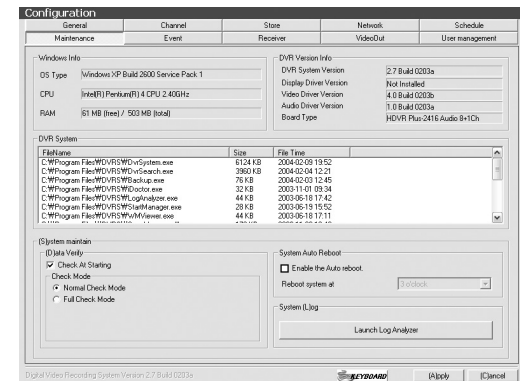
- ※ **Server Setup**
  - **Enable the Network Server:** Setup System to be used as Internet Server.  
Server image can be viewed from remote Client Program OR Internet Web Browser by using private line connected to internet.
  - **Enable the Modem Server:** Setup System to be used as PSTN Network Server.  
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



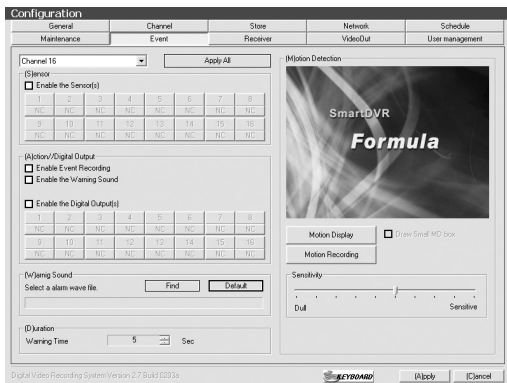
**Recording Modes:** Full Recording, Motion Detected Recording, Sensor Recording is possible for a specific date, time and channels.  
 e.g.) Setup Recording Schedule for Monday 0~12 hour,  
 Setup Motion Detection Recording Schedule for Tuesday 13~23 hour,  
 Setup Sensor Recording Schedule for Wednesday 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.

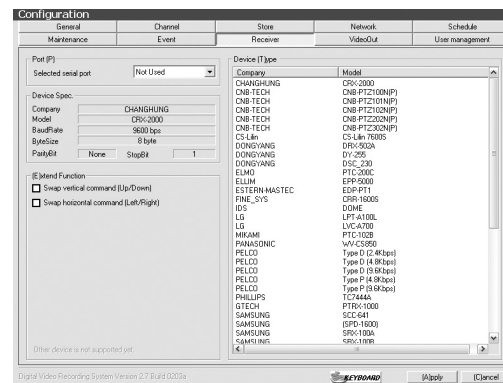
✳ **Enable Event Recording**

- 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**

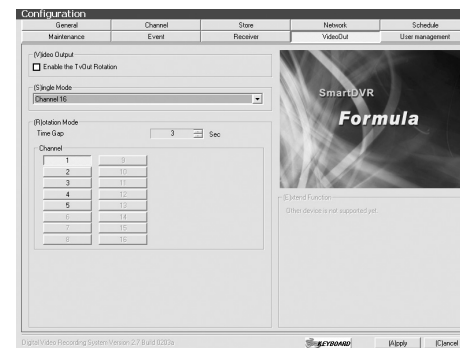
- Motion Detection Area Setup, Motion Detection Sensitivity Setup
- Setup MD Area: Setup rectangular area in screen using the mouse.
- Motion Display: Indicate the specific area by changing color when motion is detected.
- Motion Recording: Record when there is movement in image

### 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.

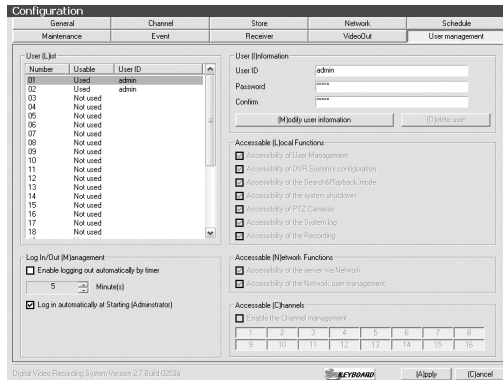
✳ **Enable the TvOut Rotation :**

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 Management 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

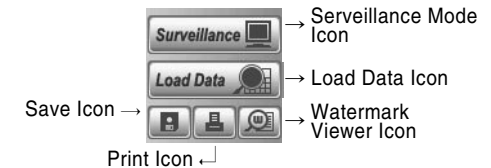
Direct only certain channels to be viewed according to user IDs.

## 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



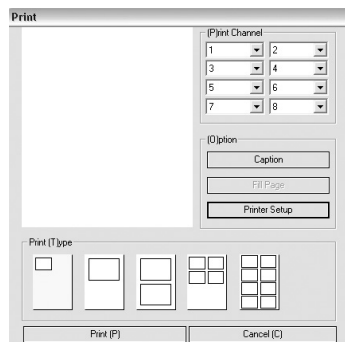
- **Surveillance Mode Icon:** Exit search program and converts to Surveillance Mode(Main Program).

- **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.

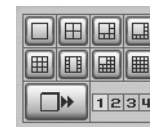
**1-2 Playback Control Panel**



[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:** 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.