i-Rec B104 User's Guide

* This manual is for i-Rec B104 firmware version 2.0.3 and CamViewer II version 1.0.2.

* If your i-Rec Cam has the later version of firmware, please download the last updated user's guide from WebGate's homepage. (www.webgateinc.com)

System Requirements

- For i-Rec B104
  - Network: 10 Base-T LAN (Leased line only)
- For a PC to access i-Rec B104
  - Processor: Pentium II 400 and above
  - RAM: 64MB and More
  - OS: Windows 98/ME/2000/NT
  - Screen Resolution: 1024 X 768 pixels and above
  - Network: 10 Base-T LAN (Leased line, xDSL, ISDN, Cable Modem) or PSTN

WebGate Inc.

Important Notice

1. i-Rec B104 is for indoor use. If your application demands prolonged exposure to sunlight, you should consider to equip with a sun visor.

2. i-Rec B104 is not weatherproof. Therefore you should be well aware of environmental specifications that are included in the manual. In case of outdoor use, where it needs additional weather criteria, you should equip weatherproof case to protect i-Rec B104 from water, moisture, or temperature (higher or lower than specification). For i-Rec B104 cleaning, gently wipe with clean dry cloth.

3. Be sure to use a DC adapter that is provided by Web Gate Inc. Connecting i-Rec B104 directly to a AC current, may cause electric damages to i-Rec B104.

4. Be caution in handling i-Rec B104 for physical shocks may harm the product. Especially, its self-contained HDD can be seriously damaged, when i-Rec B104 is shocked during recording images.

5. You can hurt human beings if you throw it to them or hit on them. When installing i-Rec B104, be sure it is attached tight and stable to avoid any human injures. Be cautious to locate on safe places where children are unreachable.

6. If i-Rec B104 does not operate properly, please contact the closest local WebGate distributor for after sales service. In all cases, you are prohibited to disassemble the product. If so, WebGate is not responsible for any malfunction nor service warranty.

7. Security surveillance laws may differ for each country. Therefore, please contact the local region first to avoid any surveillance law violations and to apply for authorized purposes only.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.
Disposal of used batteries according to the general recommendations against the environmental pollution.

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I. Introduction

What is i-Rec B104?

4-channel box style Network DVR

i-Rec B104 is a 4-channel box style DVR. It is an all-in-one system with a Web server of embedded Linux, a networking device, and a HDD (Removable). i-Rec B104 only needs designated power supply and network connection in order to operate.

DVR with HDD using rack

i-Rec B104 records images into HDD at the maximum speed of 30 frames per second, protecting them in the safest way. Since i-Rec B104 is equipped with a file system, which is applied for worldwide patent, it always prevents recorded data from being damaged or lost in course of sudden power failure.

Powerful image compression

i-Rec B104 utilizes Wavelet that is a still image compressing algorithm and more efficient than JPEG by 30% - 300%. In addition to this, i-Rec B104 is equipped with 32bit RISC CPU to make it more efficient in image processing. Therefore the size of the compressed image is smaller than any other DVR. i-Rec B104 compresses 30 frames per second and transmits 30 frames per seconds.

Simple installation and various functions

Functional firmware of i-Rec B104 is saved in flash memory chip of 8MB. For this reason, its firmware can be upgraded remotely through Internet or Intranet. i-Rec B104 is designed to have a port(RS-232 & RS-485) to connect external devices such as sensor, pan/tilt mechanism, zoom lens, etc. All the external devices can be controlled remotely. i-Rec B104 also controls 4 external CCD cameras, even existing analogue CCTV cameras by connecting them to video input ports.

II. Product Description

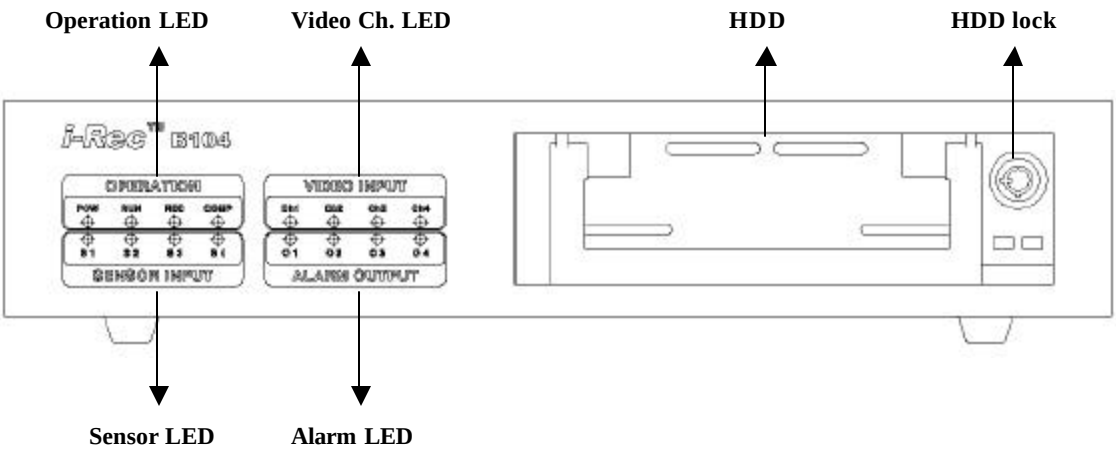
1. Contents

* Unpack and check all the items as below.

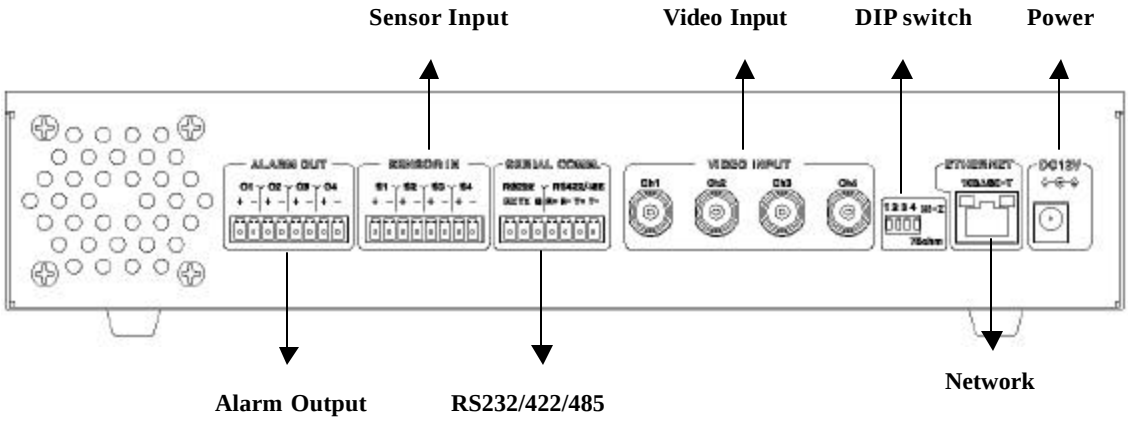
Item	Description	Remarks
i-Rec B104	Network DVR	
AC Adapter & Power cable	DC 12V, 3.5A	
Manual	i-Rec B104 User's Guide Quick reference guide	Provided on CD Printed material
Crossover Cable	1 m crossover cable	Red-colored
Direct Cable	2 m direct cable	White-colored
CD ROM title	CamViewer II install program and manual	

2. i-Rec B104 views and descriptions

1) Front view



2) Rear view



III. i-Rec B104 Installation Summary, Connection & Placing

1. Installation Summary

- Connect Power and Ethernet to i-Rec B104 on local network for configuration
- Connect external cameras
- Install i-Rec CamViewer II into a PC on local network
- Setup Administrator's condition
- Configure recording & searching condition
- Place i-Rec B104 for your purpose, and re-connect power and Ethernet

2. Connecting

- Connect Ethernet line to the Ethernet port in the rear.
- Connect the power supply to a power supply port in the rear.
- Confirm that the LED of the Ethernet port blinks

IV. Installing CamViewer II Setup Program

1. System Requirements

Check minimum system requirements in your PC before installing program.

- Minimum requirements
  - CPU : Pentium II 400MHz and above
  - RAM : 64MB and above
  - Monitor : Resolution of 1024 ×768 and above / VGA 8MB
  - HDD : 4GB

- Recommended requirements
  - CPU : Pentium III 800MHz and above
  - RAM : 128MB and above
  - Monitor : Resolution of 1024 ×768 and above / VGA 32MB, AGP
  - HDD : 20GB and above

- Software
  - Window 98SE, ME, NT4.0 (SP3 and above)
  - Window 2000 Professional

- Essential condition

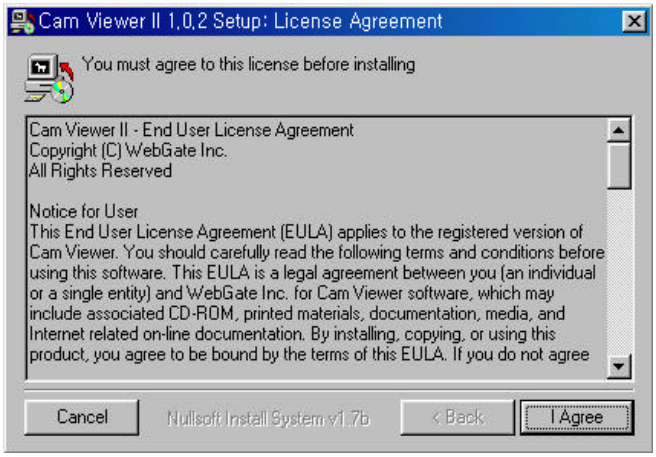
  <Winows 98/ME>
  - Install Driver 8.1 applying for DirectX.
  - When saving a screen mode in Windows 98/ME, it is recommended to dissolve such setting because of pausing connection during Playback / Monitor.

  <Win NT>
  - Install Driver 7.0 applying for DirectX.

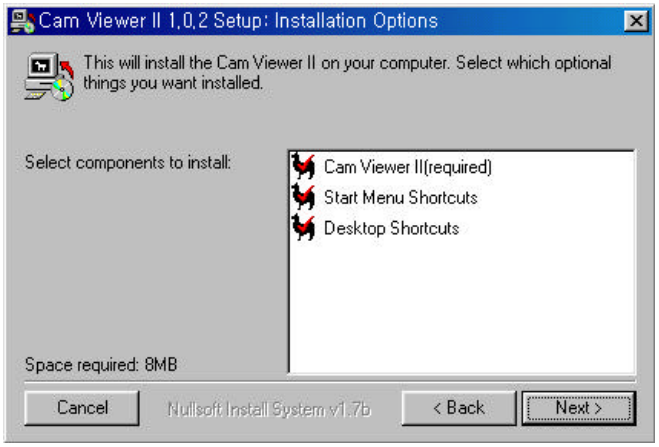
2. Install Shield Wizard Installation

Copy the 'CamViewer Ⅱ 1.0.2 Setup.exe' file onto your PC. Click the file and the CamViewer II install shield wizard will be installed automatically.

Click the 'I Agree' button to accept the license agreement.

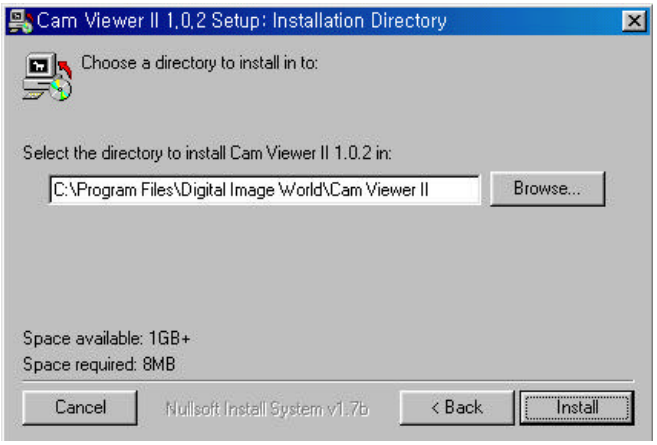


Select a component to install and press the 'Next' button.



Browse and choose a directory if the default directory is not preferred. Click the 'Install' button, after selecting a directory to install.

Click the 'Browse' button to change the default directory, and confirm a directory to change.



CamViewer II program will be automatically installed. Click the 'Close' button after CamViewer II Setup Program is installed successfully.

3. Uninstall

If you have some problem running the CamViewer II program or you want to upgrade with newer version, remove the current CamViewer II with 'Uninstall' program of 'Digital Image World' directory at first. And then reinstall CamViewer II.

After the removing process is completed, you should install CamViewer II again referring back to the installation process.

If insatlled previous version than CamViewer II 1.0.2 program, you must remove the current CamViewer II with 'Uninstall' program.

V. Configuring CamViewer II and Monitoring image

CamViewer II is composed entirely of these three programs:

- Configuration: To configure Administrator's condition
- Monitor: To monitor the real-time image
- Playback: To search the recorded image and backup files

1. Configuration

This is to configure Administrator's condition in order to manage i-Rec B104, which is connected the to local network or the Internet, using the Cam explorer. Cam explorer is composed of three main menus. In Cam explorer, you can ascertain whether each Cam is operational or not. Non-operational Cam is indicated in black ( ), and operational Cam is indicated in green ( ).

1) Cam explorer

1-1) My Cameras

If you register a Cam in the 'Local Area Cameras' directory into 'My Cameras' directory, you may also register a Cam of remote Network onto this directory. You may operate the Cam in a remote Network.

Cam explorer refreshes all of Cams' information automatically every thirty seconds. Therefore, click 'Refresh' button to refresh and connect Cam.

If you register Cams that you like, the information of selected Cam will be recorded into your PC. And the last accessed Cam out of 'My Cam World' is detected and accessed. Therefore you can access the Cam without being in the local network.

Folder registration

If you make folders by region and register relevant Cams on each folder, you may manage Cams conveniently.

To register folders, move the mouse cursor over the 'My Cam World' and click the right button of the mouse. Then select 'New Folder', which will bring the dialogue to enter a new folder name. If you enter the name and press 'OK' button, a new folder is registered.

To delete a registered folder, select 'Delete Folder' at pop-up menu.

Cam registration

There are two methods in registering Cam onto 'My Cam World' or the sub-folders.

Registration in remote Network: First, move the mouse cursor over 'My Cameras' and click the right button of the mouse. Then if select 'Add Cam', the dialogue to register a new Cam will appear. If you enter an IP address of a Cam and press the 'Start Probe' button, the Cam will be registered automatically.

To delete a registered Cam, select 'Delete Cam' at pop-up menu.

In the case of CRS, you may not know the IP address of the Cam. To register those Cam in the 'CRS', drag it from 'CRS' into 'My Cameras'.

Registration in local Network: You can drag the Cam from 'Local Area Cameras' directory into 'My Cameras' directory or sub-folder.

To delete a registered Cam, drag the registered Cam from 'My Cameras' into the 'Local Area Cameras' directory or use 'Delete Cam' at pop-up menu.

1-2) Local Area Cameras

This folder indicates Cam automatically that is connected on the local network.

If you register a Cam onto 'My Cameras', the registered Cam will disappear from the 'Local Area Cameras' directory.

1-3) CRS

You may register the information of a Cam with dynamic IP onto CRS. This enables you to manage several Cams by groups. If you register several Cams by a group, you can manage them with one IP address from the server.

For this purpose, administrator should assign an group ID to each Cam whenver he configures Cam. Please refer to 'Network Configuration' of Configuration program.

CRS address and Group ID Registration

After assigning CRS address and group ID to Cam, you should register the CRS address and group ID so that CamViewer II may access the CRS address and group ID.

CamViewer II keeps CRS address and group ID on the PC and automatically access the CRS to get information when it is started.

To register the CRS server on CamViewer II, move mouse cursor over the CRS, and click the right button of the mouse. Then select 'Add CRS' from the pop-up menu..

After entering the server IP address, enter the group ID to register. You may register it with URL instead of IP address. (To register with URL, please refer to 'Network setting' page.)

To register on the CRS, you should assign distinct ID because PC will only show the information of a Cam with the same ID.

When the Cam of 'CRS' is registered on 'My Cameras', the Cam is indicated simultaneously in My Cam World and CRS. The Cam of CRS may be found in remote Network.

2) Log–in Screen

Enter 'User Name' and 'Password'. 'User Name' is fixed as 'admin'. If the 'Save Password' is checked, you don't need to enter the Password whenever you log in. 'Save Password' function may only be utilized if the Cam is registered on the 'My Cameras' directory.

To change IP address, enter the new IP address and press 'Change IP' button. If the connected Cam doesn't have the same local network IP address, administrator cannot access it. In the case, administrator should change IP address with a local one, and then may access the Cam to configure it.

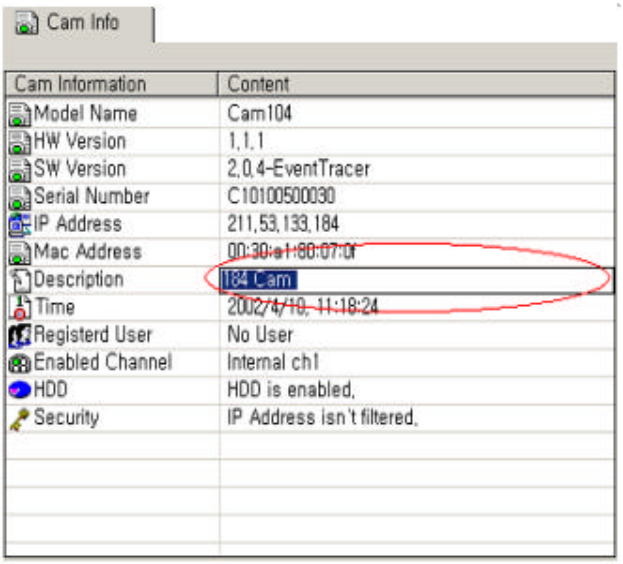
After keying in password, click the 'Login' button. This will allow you to access the configuration page of CamViewer II. To affirm the changed description, click the 'Apply' button certainly.

3) Setting Cam information

This is to indicate information of the selected Cam. If you double-click each item in the list, you can move to the relevant tab.

Model Name, HW Version, SW Version, Serial Number, and Mac Address are set up automatically, when the Cam is produced.

By editing under the Content, the 'Description' of the Cam may be changed within 30 English characters or numbers.



4) Setting System information

Initialize FlashInfo: You can reset almost all the settings back to factory default figures but the time and network configurations will not be reconfigured. The related information with recording and management settings is mainly initialized.

Time: When you access CamViewer II, the time indicated from this may be different with PC. This shows the time of the Cam when you access the 'System information' tab. 'Current time' menu is to synchronize the time of the Cam and the PC. To synchronize the time, check 'Current Time' and press 'Apply' button. If you don't set current time, time of Cam is still maintained.

Reboot Cam: If the Cam has any problem, you can reboot it without adjusting the power supply. This button works as on/off switch

5) Setting Network information

5-1) Connecting Cam on dedicated line

Dedicated line may assign Cam with an official IP address. Input on panel of [Ethernet] properly.

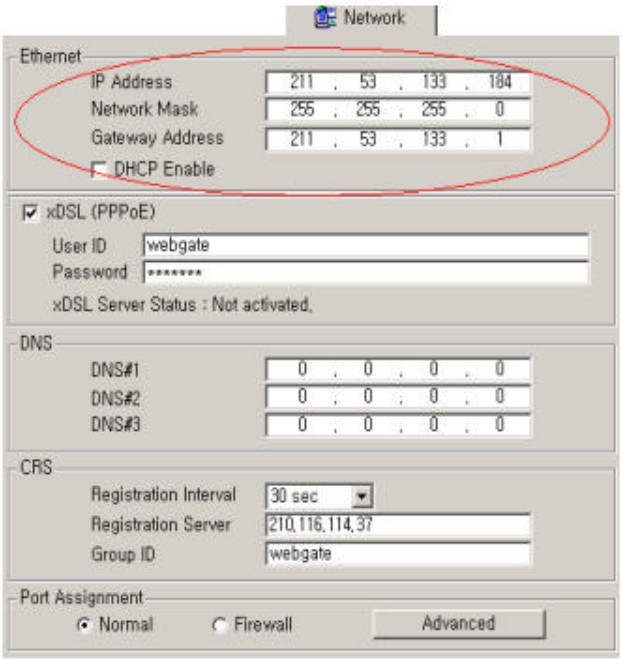
[Ethernet]

Administrator may configure IP address, Network Mask and Gateway address of Cam.

When the addresses are not assigned properly, any user cannot access Cam from local or remote network. Even on the local network, a user is not able to access if administrator does not assign a proper IP address to Cam.

Please check configuration to network administrator before installing.

Please refer to appendix 'Utilizing IP Address on Local Network' for more detailed information.



5-2) Connecting Cam on Cable Modem

It is possible to manage Cam with cable modem instead of dedicated line.
To use Cam with cable modem, input on panel of [Ethernet] and [CRS] properly

[Ethernet]
Click the 'DHCP Enable'. DHCP server will automatically assign with IP Address, Network Mask and Gateway Address if the LAN is connected with cable modem.

[CRS]
When a Cam is installed under the environment of Cable Modem or ADSL Modem connection, its IP address changes whenever it reconnects to the Internet Service Provider. In this case users who don't know the changed IP address cannot get access to the Cam.

A Cam with dynamic IP should be registered to the CRS server in order to make it easy for users to find the changed IP address, when they want to access the Cam. Please refer to 'CRS'.

To use CRS, configure the descriptions below. If you use ADSL modem or Cable modem, you should configure it as same ways.

- **Registration Interval**: In order to maintain continuous connectivity, user should reset the 'Registration Interval'. Dynamic IP addresses are updated to CRS server periodically according to time interval. When you configure it as 'Disable' or any data is not transmitted from Cam for 2 days, server may delete about registrations. Even though you configure 'Disable', it would be deleted registrations from CRS in 2 days.

- **Registration Server**: IP address of CRS, which is managed by 'WebGate Inc.', is '**210.116.114.37**' and URL is '**webeye.to**'. It needs not to register DNS server when entering IP address. And you must register DNS server when entering URL. IP address of DNS that is registered as 'webeye.to' is '**211.53.133.11**'.

- **Group ID**: Group ID is for discriminating and managing the information of Cam belonging to group. This is to enter your own group ID. It is recommended unique group ID to avoid other group ID's Cam.

5-3) Connecting Cam on ADSL Modem

It is possible to manage Cam with ADSL modem instead of dedicated line.
To use Cam with ADSL modem, input on panel of [Ethernet], [xDSL] and [CRS] properly

[Ethernet]
If IP Address, Network Mask, and Gateway Address are same with PC's ones, you should enter different values at [Ethernet] panel in order to connect Cam to ADSL normally.

If not, you don't need to configure [Ethernet] panel. (For more detailed information, please refer to "Help about CRS" part.)

Uncheck 'DHCP Enable'.

[xDSL]
Click the 'xSDL'. Input user ID and password, which are assigned from the Internet Service Provider.

[CRS]
When a Cam is installed under the environment of Cable Modem or ADSL Modem connection, its IP address changes whenever it reconnects to the Internet Service Provider. In this case users who don't know the changed IP address cannot get access to the Cam.

A Cam with dynamic IP should be registered to the CRS server in order to make it easy for users to find the changed IP address, when they want to access the Cam. Please refer to 'CRS'.

To use CRS, configure the descriptions below. If you use ADSL modem or Cable modem, you should configure it as same ways.

- **Registration Interval**: In order to maintain continuous connectivity, user should reset the 'Registration Interval'. Dynamic IP addresses are updated to CRS server periodically at time interval. When configuring 'Disable' or without any data transferring from Cam for 2 days, server may delete about registrations. . Even though you configure 'Disable', it would be deleted registrations from CRS in 2 days.

- **Registration Server**: IP address for CRS, which is managed by 'WebGate Inc.', is '**210.116.114.37**' and URL is '**webeye.to**'. It needs not to register DNS server when entering IP address. And you must register DNS server when entering URL. IP address of DNS that is registered as 'webeye.to' is '**211.53.133.11'**.

- **Group ID**: Group ID is for discriminating and managing the information of Cam belonging to group. This is to enter your own group ID. It is recommended unique group ID to avoid other group ID's Cam.

Port Assignment : This is to configure Playback port and Monitoring port manually.

- **Normal**: Generally, port 80 or port 8080 is open for ordinary data communication, and port 8839 is for image transmission. But when a firewall is set, these ports may not be used. In order to solve this problem, CamViewer II uses port 8105 as playback port and port 8001 as monitoring port for surveillance. If you press "Advanced" button, administrator may configure the ports number for with other ports that are available on the Network. The changed value is confirmed after rebooting. If you press 'Default' button, changed value is configured as default value.

  When 'Normal' is selected after using 'Firewall' mode, it is to be configured the ports as follows.
  . Select 'Normal' button.
  . Click 'Apply' button.
  . Reboot Cam.
  . Click 'Advance' button and configure ports number.
  . Reboot Cam.

- **Firewall**: If there is a firewall on the network and there is a unique port is available, user may configure the Monitor and Playback ports as one port. In order to change a port, select "Firewall", click the "Advanced" button, and configure a suitable value. The changed value is confirmed after rebooting.

6) Setting User account

There is one administrator's account and 4 users' accounts.

Administrator's User ID is fixed as 'admin'. But Admin's password, User ID, and User password can be changed within 14 English characters or numbers.

If administrator clicks 'Use' item, the relevant items for configuration are activated. Administrator can also authorize each user to each Cam channel, PTZ, and HDD control.

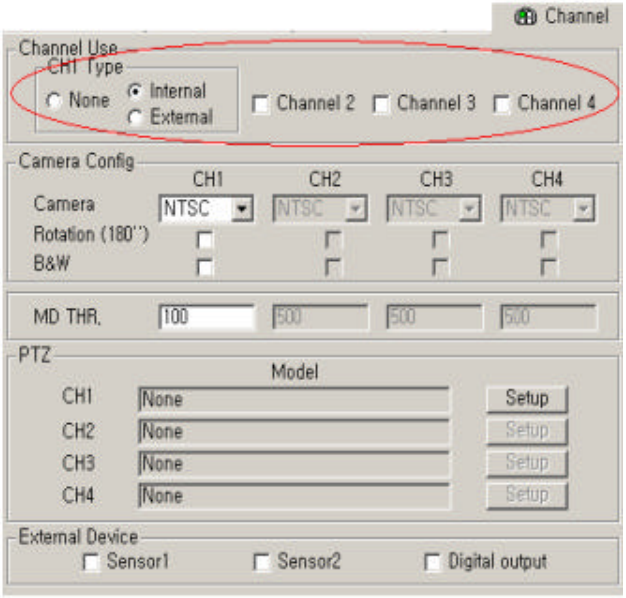
- **Channel 1/2/3/4**: This menu enables to use channels in real-time monitoring program.
- **PTZ**: This menu enables to use PTZ functions.
- **HDD**: This menu enables to use playback program.

.

7) Setting Channel information

This is to configure channels and PTZ / external device according to each channel.

Channel Use: This is to select channels to see live images and to record them on Cam's self-contained HDD. For example, when you connect an external CCD camera to Ch1 port in the rear of Cam, select 'External' for Channel 1. However when you don't want to utilize channel 1, select 'None' for Channel 1. You can also select one or more channels as a video source. For external channels, it is very important you check only the channels that are connected with an external camera. Otherwise recording speed or transmission speed may be lower.



Camera Config: In this step, you define external CCD cameras between 'NTSC' and 'PAL' and decide whether to rotate image by 180° or not. If you rotate image that is sent from each cameras, you do not need to place any bracket to place Cam or external cameras to capture images at right angle. You just place directly on the ceiling by upside down. And when you use black & white camera, you should check B&W.

MD THR: Through 'MD THR' panel, you may set sensitivity of motion detection. The range is from 1 to 999. '1' is the highest level, and '999' is relatively the lowest one.

PTZ: You may control pan/tilt/zoom mechanism that is connected on Cam if the pan/tilt and zoom lens are installed. However the drivers for the pan tilt and zoom must be installed in to the communication protocol in the Cam to control pan/tilt/zoom mechanism.

If PTZ mechanism is connected to Cam, press 'Setup' button and configure the followings:

Model: For now, Cam is equipped with some protocols for specific models of pan/tilt mechanisms. Administrator selects a communication protocol from a pre-set list of attached external device. WebGate has listed protocols of KukJae (KRS-3200), Philips (AutoDome and TC8560X-4), Pelco (P and D), Sony (EVI-D3x), Video Technical (VTP-4x), Sensormatic, SungJin, Samsung, LG, Lilin, etc. Administrator may utilize any pan/tilt mechanism that satisfies already listed protocols. The communication protocols vary for each manufacturer. So it is recommended to buy a pan/tilt mechanism among registered ones.

Interface: Cam has two pairs of interface pins; the RS232 interface and the RS485 (Half-Duplex) interface. It is to select a proper interface with which a pan/tilt/zoom control receiver is connected to Cam.

Baud: Configures data transmission rate.
Parity: Checks data loss for transmission.
Stop bit: Configures stop bit for transmission.
Data bit: Configures data bit for transmission.

Address: This menu identifies the base address for a video channel and a pan/tilt/zoom (P/T/Z) control receiver. The Cam may support up to four P/T/Z devices for four separate channels when 485 interface, (RS485 Half-Duplex) is enabled. The "Address" identifies each P/T/Z device to each channel. Select a channel to configure and change the "Address" to correspond with the channel number. This will allow independent operation, up to four P/T/Z controls. In addition, all channels can be set to the same "Address" for synchronized movement.

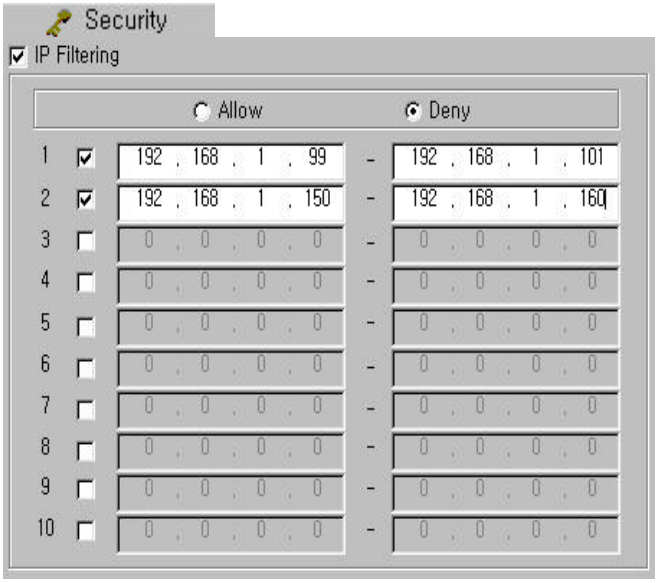
External Device: If you want to utilize external sensors for digital input ports or electric lights at a digital output port, check the relevant items in the bottom of this tab. In this case of sensor, be cautious that Cam is set to support normal closed (NC) type sensors only. In this menu, you configure which external device is utilized. The detail items of relevant external device are configured in Schedule tab. With 'digital output' button, you may utilize 'digital output' function and monitor real-time image simultaneously.

8) Setting Security information

If you check 'IP Filtering', you can configure the range of IP addresses that can access the Cam.

Principle: The principle in IP filtering is to be applied to the whole configured range.

Range: If you configure '192.168.1.99 ~ 192.168.1.101' and '192.168.1.150 ~ 192.168.1.160' as 'Deny', the relevant IP users cannot access to the Cam. You can configure the range of IP addresses with 10 parts. And when you configure just one IP address, enter IP address such as '192.168.1.100 ~ 192.168.1.100'.



9) Setting HDD information

Auto Delete : You may delete data by 1000, 2000, 5000, or 10000 frames automatically when the HDD is full. It is only possible to delete images from the earliest frame recorded. With activating this function, Cams will keep on recording images by deleting already recorded images. Otherwise the Cam can't record images any more when the HDD is full.

If an administrator or user deletes data on HDD manually through 'Playback' program while the other use search on HDD, CamViewer II shows the other user a message of 'Auto Delete (number)'. Number signifies deleted image frame number.

HDD Status: The diagram shows HDD status. If the 'HDD Enable' is selected, Cam will record images on its HDD, if not, the Cam will not record nor replay. The default value is configured as 'Disable'. You can format HDD with 'HDD Format' button. When HDD is formatted, all recorded images will be deleted.

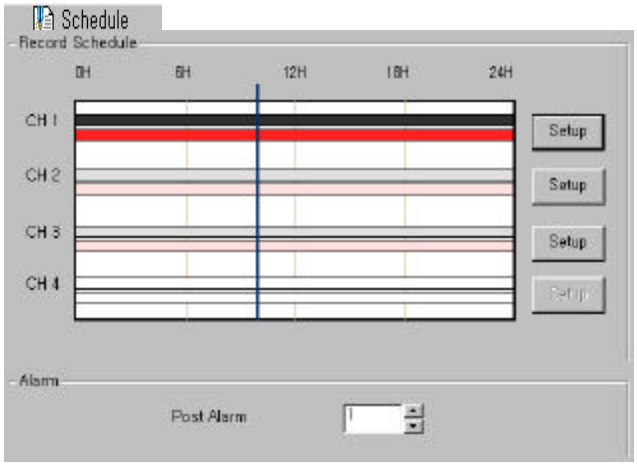
If administrator formats HDD at 'Configuration' program while the other use search on HDD, CamViewer II shows the other user a message of 'HDD is to be formatted now by a administrator. Connection will be closed. Please reconnect later' and the connection of the other user will be closed.

10) Setting Screen Adjustment

You may adjust brightness, contrast, hue, saturation, horizontal offset, and video gain in the Screen Adjustment tab. Adjustment in this menu affects the live image screen and the recorded image screen.

When the Cam is connected to external video camera, the adjustments may be affected because input signal of the external device may be different in each camera. So you can adjust them manually, through **Video Gain.** Video Gain is to appoint the amplification rate of input signal. For example, when image is so bright, lower value must be adjusted. If the distance between external camera and Cam is over 100 meters, input size of video signal will be lessened. In this case, you can maintain clear screen through this function.

11) Setting Schedule information

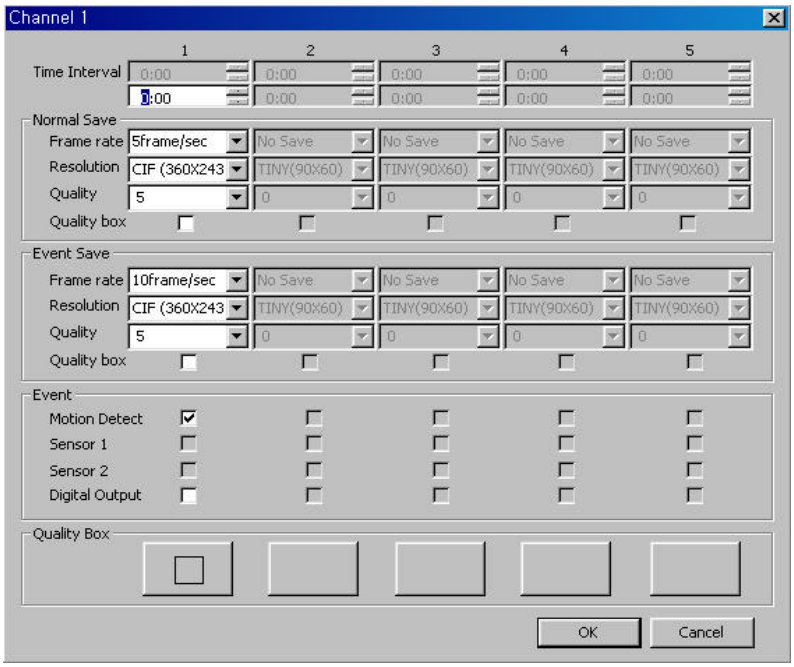


This is to configure recording status of Cam in advance.

Graph : The graph indicates configuration value. As recording rate is higher, the depth of color is denser. 2 bars of each channel indicates configuration of normal condition and of event condition. A blue bar indicates current time of Cam.

Post Alarm: This can be configured by the second. If this function is configured, the image will be recording for the configured time after the event is over. You may configure any value as Post Alarm setting.

Setup: After you press the 'Setup' button of each channel, you may configure relevant channel schedule.



Time Interval : You can divide a day into 5 sections and configure each section between 0:00 and 24:00 for each channel. (The below 0:00 means 24:00.) If you configure another section except first configured section, the next section is activated.

Normal Save: This is to designate a recording level of normal situation with three conditions such as frame rate, image resolution and image quality (compressing rate). The quality level of live image is also decided here. If the below item 'Quality box' is selected, the image is saved as you configure the recording condition of image in the bottom of this tab, 'Quality Box' button.

Event Save : This designates a recording level of event situation with three conditions such as frame rate, image resolution and image quality (compressing rate). If the below item 'Quality box' is selected, the image is saved as to your configured recording condition of the image in the bottom of this tab, 'Quality Box' button.

Event: This defines recording condition of event situation and decides which device is utilized when the events occur. You can configure each device at each time section. In other words, if Motion Detect or Sensor item is selected, it means that the image is recorded on HDD when the device senses the event situation. When Digital Output is selected with Motion Detect or Sensor item, it means that external digital device such as an electric light is operated at the same time. Though digital output is not configured as automatic operation in this menu, you may control it in real-time image viewer manually.

Quality Box: The current condition of configuration is indicated in quadrangle button of Quality Box. If you press the button, the dialogue for Quality box configuration is appeared. However be cautious that the configured condition is applied in recording, not in monitoring real-time image.

A quality box can be configured by selecting a quadrilateral area and could be resized. If you click the mouse button out of selected area, the configuration value is cleared.

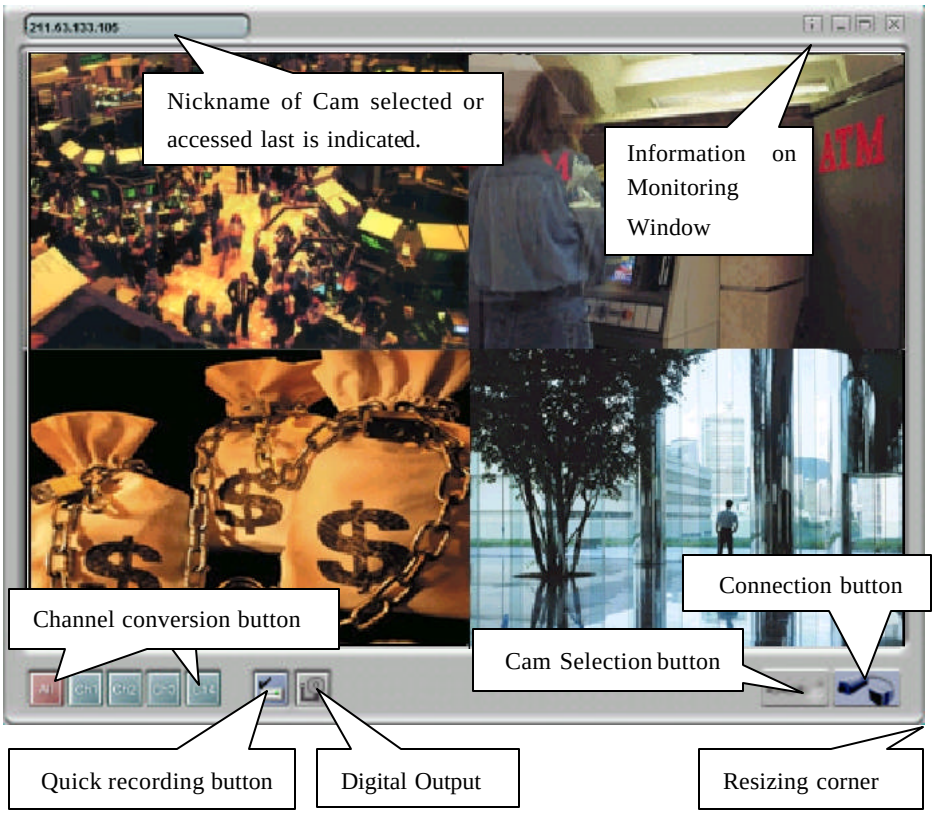
Attenuation: This sets the quality of out of focused area. If you select 1, the quality is similar to focused area. And if you select 5, the image of out of focused area is shown as dark. You may configure a recording condition of normal save or event save in relevant menu.

- **Normal Save:** If you select quality box of 'Normal Save' menu, the configured image is recorded in normal situation.
- **Event Save** : If you select quality box of 'Event Save' menu, the configured image is recorded in only event situation.

2. Monitor

1) Opening CamViewer II

Click the icon 'CamViewer II Monitor', and then a real-time monitoring screen appears.



* To view the image of specific channel, click relevant channel conversion button or double-click the image in monitoring screen.

* **Digital Output**: This indicates event situation in monitoring real-time image. If you configure motion detect ion or sensor function at schedule tab and such device senses an event situation, this icon will turn red and rings an alarm. You may control digital output in this screen manually.

2) Connection

Select Cam: To connect the Cam, select a Cam first by using the 'Cam Selection' button. If there are no selected Cam and you click the 'Connection' button, the Cam Selection dialogue will appear. Setting method is same with 'Configuration' page.

Select a Cam by double-clicking or pressing the 'OK' button. After the Cam is selected the Cam will be indicated at 'Nick Name' item. When pressing 'Connection' button, you may access the Login menu.

Login: Enter 'User Name' and 'Password'. If 'Port #' is configured differently, you can change it manually. If the selected Cam is registered, you can utilize 'Save Password' function. User's ID that has accessed it last is indicated in 'User Name' of Login menu, and default value of 'Configuration' page is indicated in Port #. If you change Port # in 'Configuration' page, click the 'Cam Selection' button and select a camera in 'Cam explorer' again.

In this panel, user may change password within 14 English characters or numbers, but administrator cannot change it in this panel. It is because administrator's ID is fixed and common user may interrupt the whole system with using administrator's ID by stealth.

3) Quick recording

When monitoring real-time image, you may record specific images into your PC. If you click 'Ctrl+s' button or 'quick recording' button, a dialogue box appears. The dialogue indicates information of recording image.

Quick recording process operates for 5 minutes. Unless user stops this function, it closes automatically after 5 minutes.

After recording process is finished completely, you must configure a file name and directory to save in your PC. When the process is operated normally, the Playback program is operated automatically and you can make the replay the file.

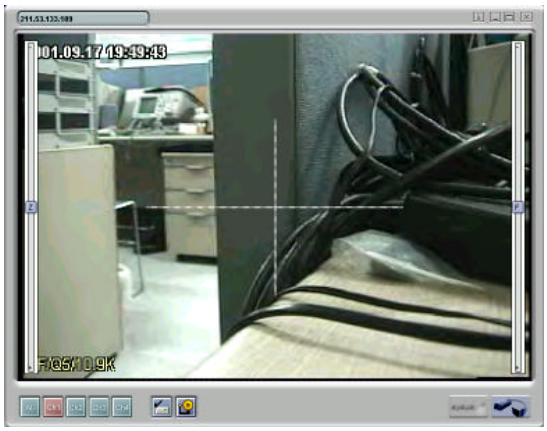
If you move to 'Real-Time' from 'Playback' page and operate 'Quick recording', you can see both of two playback viewers. It is to protect and view the special recorded image in course of recording an image at 'Play back' page.

Executing Playback

Quick Recording files can be loaded in the 'Playback'.

1. Click 'Cam Selection' button at right bottom of 'Playback', and then 'Cam explorer' appears.
2. Click 'Open Backup File…' button at the foot of 'Cam explorer'.
3. Select a Quick recording file in 'Open' dialogue box.
4. File name appears at the top of 'Playback'.
5. Click 'Connect' button at right bottom of 'Playback', recorded images are played.

4) PTZ function



The authorized user may control the following function. When authorized user places mouse cursor on the image, dotted cross line appears on the center and two control bars appear on each sides.

- **Zoom & Focus**: If you move the mouse to right and left, the slide-bar appears in the screen. By moving these bar, you may control zoom (Z, left slide-bar) and focus (F, right slide-bar)

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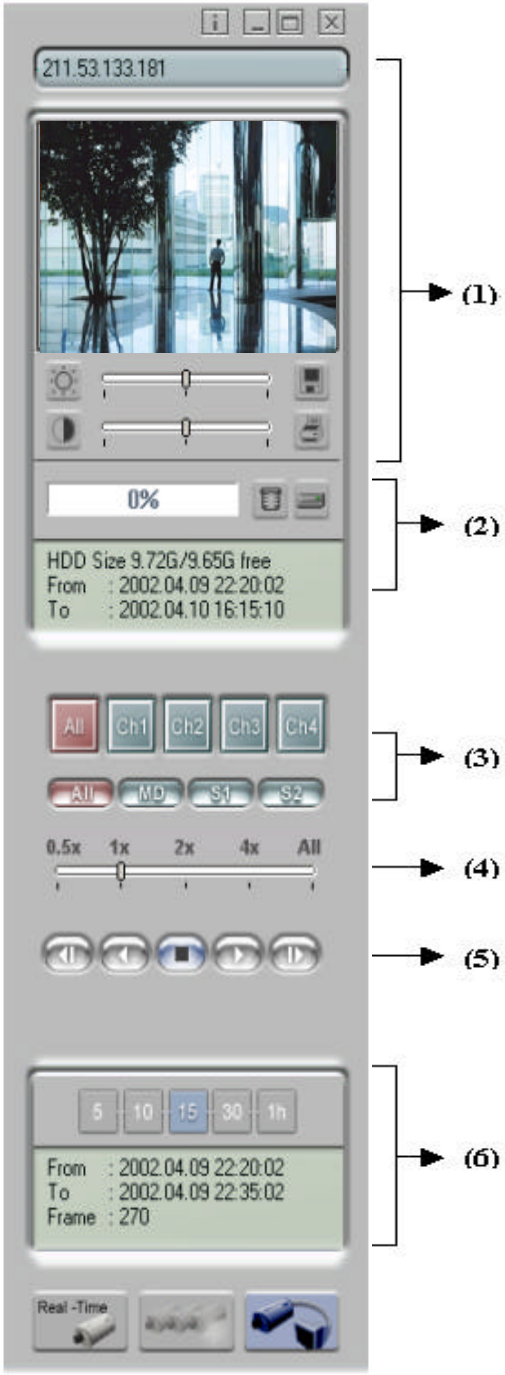
- **Pan & Tilt** You may control pan/tilt function by clicking the right button of mouse on the image. Moving speed becomes faster when you place more far away from the center.

3. Playback

This is to monitor the recorded image of Cam. The login process is same with the 'Monitor' page.

1) Panel Control



(1) Image Ctrl Panel

The image of selected channel is indicated in small screen. You may configure the expansion, brightness, and contrast of image. You may also save the image into your PC as 'bitmap' file or print it. Nickname of selected Cam is indicated in the item above small screen.

- **Image Expansion**: This is used to zoom into a specific part of a recorded image from a selected channel. You can configure zoom area through dragging quadrilateral area, and you may move selected area or control the size.

To control image expansion, you may utilize +(expansion), -(reduction), pgup(expansion), and pgdn(reduction) button of keyboard. To move selected image, utilize arrow buttons of the keyboard.

The configured image is indicated in relevant channel screen.

- **Saving file (** **):** To save selected image as 'bitmap' file.

- **Printing file (** **)**: To print the selected image.

- **Controlling brightness (** **)**: To control the brightness of selected image. If you click this icon, it will configure back to default value.

- **Controlling contrast (** **)**: To control the contrast of selected image. If you click this icon, it is configured as default value.

(2) HDD Ctrl Panel

This indicates the current HDD status. (free size / recorded status) If you stop replaying image, the HDD information is updated at about every 10 seconds. However if image is replayed continuously, the only size of recorded data is updated.

- Data Delete (**)**:To delete a portion or the whole recorded data. However be cautious that the deleted day range is from the earlier date so that the item does not automatically delete the information.

If a user deletes data on HDD manually through 'Playback' program while the other use search on HDD, CamViewer II shows the other user a message of 'Auto Delete (number)' Number signifies deleted image frame number.

- Data Backup (**)**: You may backup the recorded images from a Cam into your PC remotely through a network. The backup data is only replayed through CamViewer II as a local source.

Backup range setting: It is to define the data range to backup.

You may backup the file only from the selected channel. The important point is that the backup size is smaller than one indicated on screen. The indicated size on the screen means the size of all 4 channels. When you backup the file, you may enter a password. When you open the file, you will have to enter the password that was configured in this menu. You can guarantee security by configuring a password, though the data is drained outside.

The maximum capacity of a backup file is 600MB. If the selected data exceeds 600MB, the file is divided separately. At this time, the number is appended after file name and the same ID is assigned at every divided file. The reason that the unit of partition is 600MB is to manage data conveniently as a CD.

Every divided file data, which has the same ID is indicated by the CamViewer II. Though a file is divided into several data, these data maintain relevance to one another. In other words, though one among divided files is replayed, the whole data information is indicated. However be cautious that names may be changeable, but these files should be in the same directory. If their directory is different with one another, only the files of same directory may be replayed.

A backup file is indicated as '*. rec'.

(3) Play Option Panel

Channel selection: Activated channels are shown in red, and inactivated channels are seen in green. 'All' means that all the 4 channels are selected.

Event selection: This is to decide to event type to search. CamViewer II search and display images that are recorded under designated events.
- **All**: Selects all recorded images to replay.
- **MD**: Selects the images that are recorded with 'motion detection' function.
- **S1 & S2**: Selects the images that are recorded when sensors detect events.

(4) Play Speed

This controls play speed (0.5x/1x/2x/4x/All frame) of the drag Slide. If the user's Network speed is slow, not all of the recorded frames can be replayed at the speed of 0.5x, 1x, 2x and 4x. In case of slow speed network, CamViewer II may display images with skipping images to keep up the select speed. The speed signifies the relation between recording time and displaying time.

- **0.5X**: This is to replay recorded image for the double time that is spent when to record images.
- **1X/2X/4X**: This is to replay recorded image for original/a half/ a quarter time that is spent to record images.
- **All**: Every frame is replayed without skipping any image frame regardless of Network transmission speed.

For example, if you select '2x' at replaying image recorded for 1 minute, the whole image is replayed for 30 seconds. If Network speed is slow and and CamViewer II can't keep the speed, it may skip image frames.

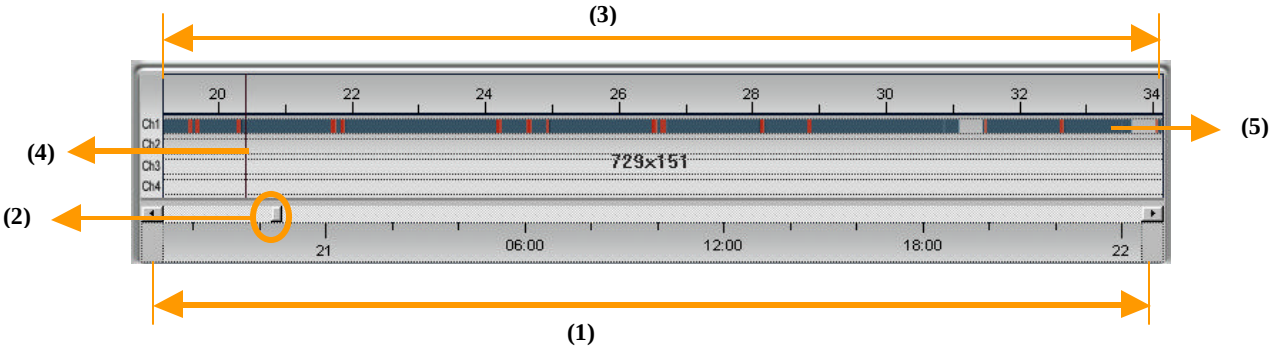
(5) Play Ctrl Panel

If you press the 'prev/next' button once, the frame will be replayed. If you press 'prev/next' button continually, images are viewed continuously.

(6) Range Selection

Indicates recording range by 5/10/15/30 minutes/1hour. If 1 frame is recorded for 5 minutes and you select replaying range as 5 minutes, 1 frame is replayed.

2) Recorded image monitoring



(1) Total recorded data indication

- This indicates the date, time, and the starting point to the finishing point of recorded data.
- The frame information is indicated as time.

(2) Scroll bar for section movement

- A scroll bar may be moved within range of the whole designated data.
- You can monitor the frame of specific hours easily if you move to the specific section among every section with scroll bar.
- You can select the range as 5 minutes/10 minutes /15 minutes /30 minutes /1 hour, using the buttons.
- The scale below the section movement scroll bar is the recording from the starting point to finishing point.
- The width of scroll bar is equal to current selected part.

(3) Selected data indication

- Scale is to indicate the time information of the selected data.

(4) Scroll bar for frame movement

- By using the scroll bar, you may move to the relevant frame.
- When you drag the scroll bar and click a frame or click on the time in the 'selected data indication' panel.

(5) Total recorded status indication

- The depth of color the in frame information indicates frame rate. As the recording rate is higher, the depth of color is denser.
- If MD or Sensor is activated, the image information is indicated with red point among the recorded images.

(Appendix)

Detailed Specifications of i-Rec B104

1. General

Hardware	32bit RISC Embedded processor Flash memory: 8Mbyte RAM: 16Mbyte OS: Embedded Linux
Storage Device	HDD (3.5inch)
Video Channel	NTSC or PAL video format are supported 4Ch. External Video Input (BNC Connector)
Image Resolution	720X486, 720X243, 360X243, 180X121, 90X60
Image Compression	Compression Algorithm: Wavelet Compression Rate: 10:1 ~200:1
Performance	Transfer Rate: Max up to 30fps(NTSC) / 25fps(PAL) Recording Rate: Max up to 30fps(NTSC) / 25fps(PAL)
Security	Password (Based User Authentication) IP-filtering (Secure Mode)
Alarms and I/O	Motion detection (With one Channel) Software-controlled 2 digital inputs
MISC. function	High quality image area setting Image quality Control (10 Levels)
Power Supply	DC 12V, 3.5A via external power supply

2. Network

Viewer/Browser	i-Rec CamViewerII (included) MS windows 98/ME/2000/NT
Connector	10 Based-T Ethernet (RJ-45)
Installation	Assign as IP address setup program or ARP/ RARP protocol
Protocols supported	TCP/IP, ARP, RARP, ICMP, and DHCP
S/W Update	Flash memory allows central remote software updates over the network using FTP or private 'i-RecUpgrade'
Management	Configuration is achieved by private setup program, embedded in 'i-Rec CamViewer II'

3. Mechanical

Dimension	H× W× L = 67mm ×306mm ×280mm
Weight	3.4 Kg(1 without HDD)

4. Compatible external devices and software

PTZ control	1 Ch. RS232, 1 Ch. RS422, 1 Ch. RS485 Multiple PTZ devices are supported via RS485
Sensor input	4 auxiliary inputs are supported