NETWORK DOME CAMERA

User Manual(Version 1.0)

If the product is to be put out of operation definitively, take it to a local recycling plant for a disposal which is not harmful to the environment.

Please read the instructions carefully for correct use of the product and preserve it for reference purposes. This specification is subject to change without any prior notice to improve the quality.

〈Chapter 6. Basic Network〉

〈Chapter 7. Appendix〉

〈Chapter 8. Troubleshooting〉

〈Chapter 9. Warranty Card〉

Introduction

This is a megapixel network camera which uses a 1/3–inch megapixel progressive scan SONY EXview HAD CCD*.
Built–in MPEG4, MJPEG CODEC and streaming server, the advantage of this camera allow you to monitor real time image from a remote location via internet. This camera supports both static IP and dynamic IP, and can change communication port, resulting in one IP address supporting multiple servers.
It also supports CMS(Central Monitoring System), various services and features weather–proof for outdoor use without extra device.

*Option

TYPE 1 : 1/3" Mega–pixel, SONY EXview HAD CCD
TYPE 2 : 1/4" VGA–pixel, SONY EXview HAD CCD
TYPE 3 : 1/4" VGA–pixel, SONY Super HAD CCD

〈Cuation〉

Software, server and service may be charged according to change of policy or may be stopped without prior notification. Appearance, function and specification may be changed without prior notification. Our company assumes no responsibility for visible or invisible loss resulted from changes in policy or products.

Safety Cautions

◈ This camera may be damaged by electrical and physical shock.
Use regulated 12V DC, 500mA power supply. Do not throw or drop it onto floor.

◈ Do not install the camera outdoors.

◈ In case it is installed at high location, be sure to mount securely to prevent the unit from falling below.

◈ In case the unit fails, DO NOT try to disassemble the product.
Contact or consult the distributor or an authorized technician for after–sales service.
Warranty void for the product disassembled without an authorization from the distributor or an authorized technician.

◈ All responsibility by using this unit is on the user.

Chapter 1.
Package

Chapter 1. Package

1.1 Features

1) Built–in webserver, the advantage of this camera allow you to upgrade the firmware and camera functions from a remote loaction.

2) With built–in 1.3M Pixel 1/3" Progressive scan SONY EXview HAD CCD's clear images (Option : TYPE 1 only)

3) With the Sense–up function, allowing the capture of images in low lighting conditions

4) Equipped with a number of convenient new functions such as OSD, Motion detection, Privacy Zone and E–zoom

1.2 Package

Package of product is composed of camera, quick guide, software & user manual CD, Cross cable(see below), and screw. Please check before starting installation.

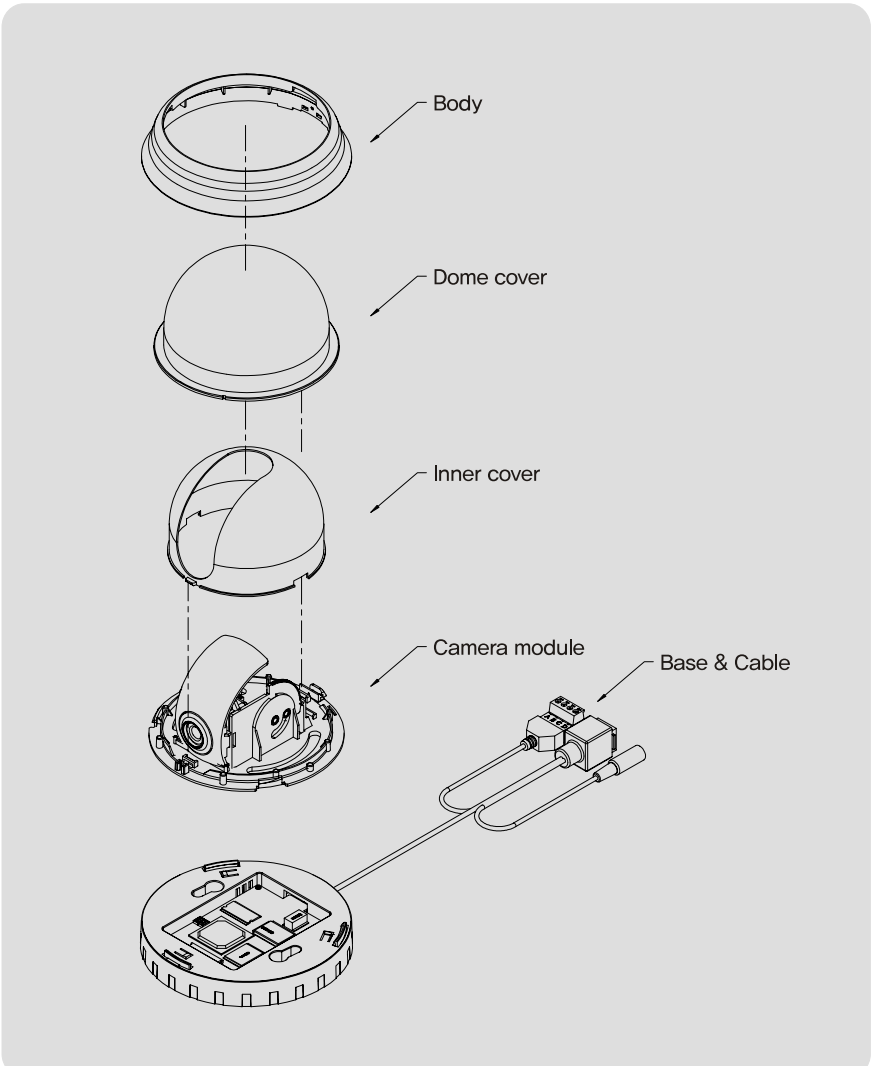
If there are any missing, please contact the shop where you purchased.

The cross cable should be used only for pre–view of video before set–up and change of network information.

[Reference] This manual is based on Microsoft Window XP.
So, there would be the difference according to operating system.

1.3 How to install

1.3.1 Configuration

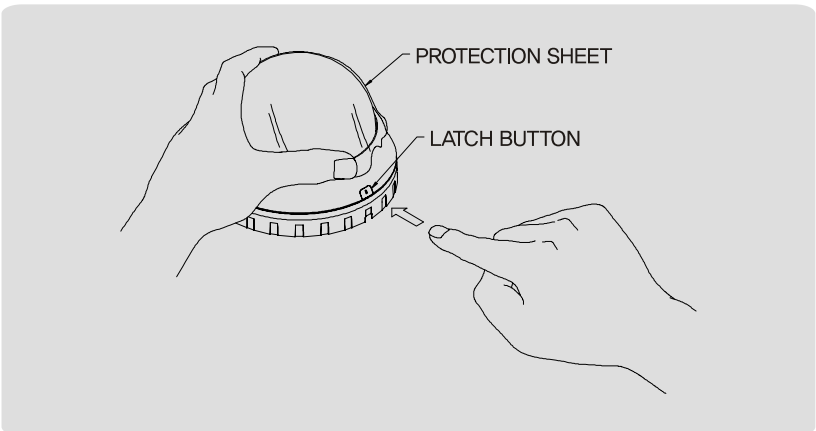


1.3.2 Open the Dome cover

Pushing the latch button, lift the dome.

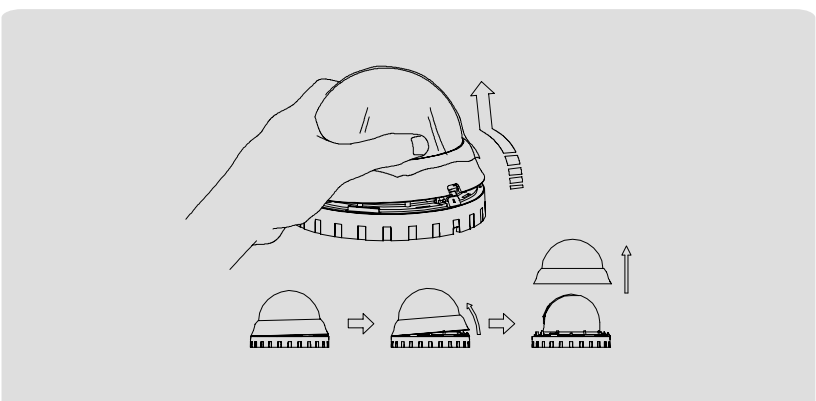
If no protection sheet, may be make pollution during open and close the dome cover.

Remove the protection sheet after installing.



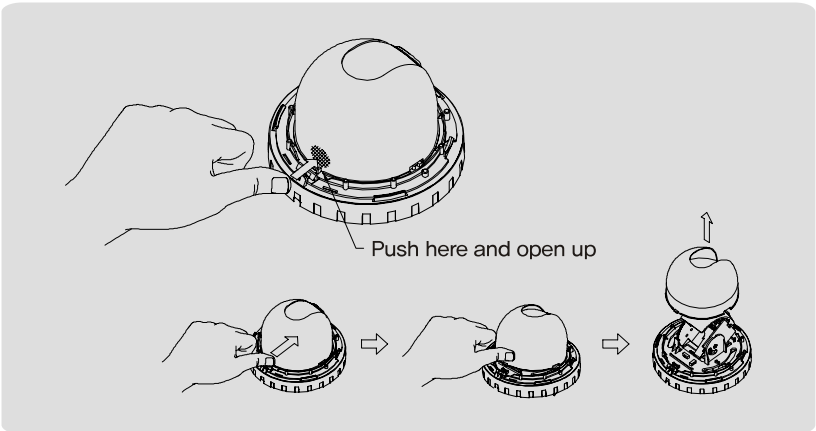
1.3.3 Separate the Dome Cover

Push the latch button to unlock, lift the back side cover then separate as shown on the picture.



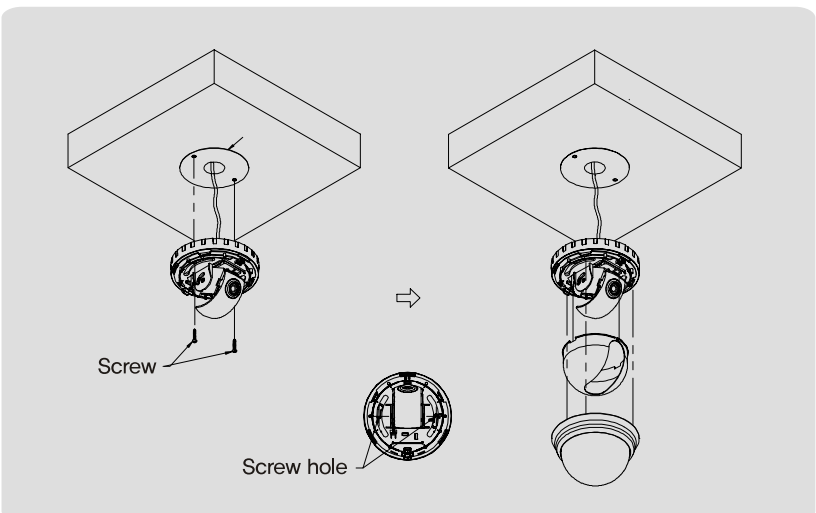
1.3.4 Separate the inside cover

Push the inner dome cover as shown on the picture and then it is detached.



1.3.5 Install the camera

Fasten the screws to fix the base on the ceiling as shown on the picture.

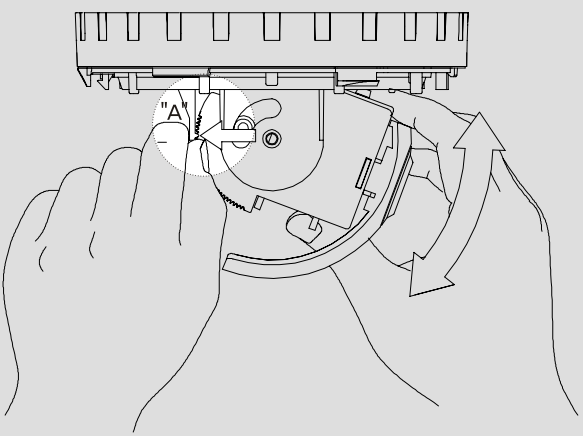


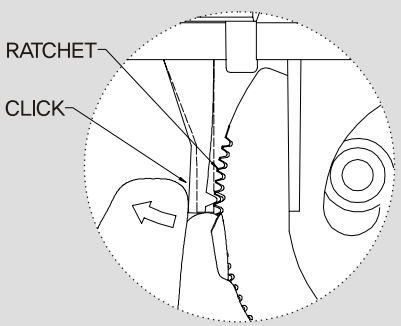
1.3.6 Adjust camera's angle and assembling

1) Pull the click as shown on the picture to adjust tilt angle easily.

2) Adjust the camera's angle to up and down then set free.

3) After finishing the adjustment, assemble the inside cover and dome cover.

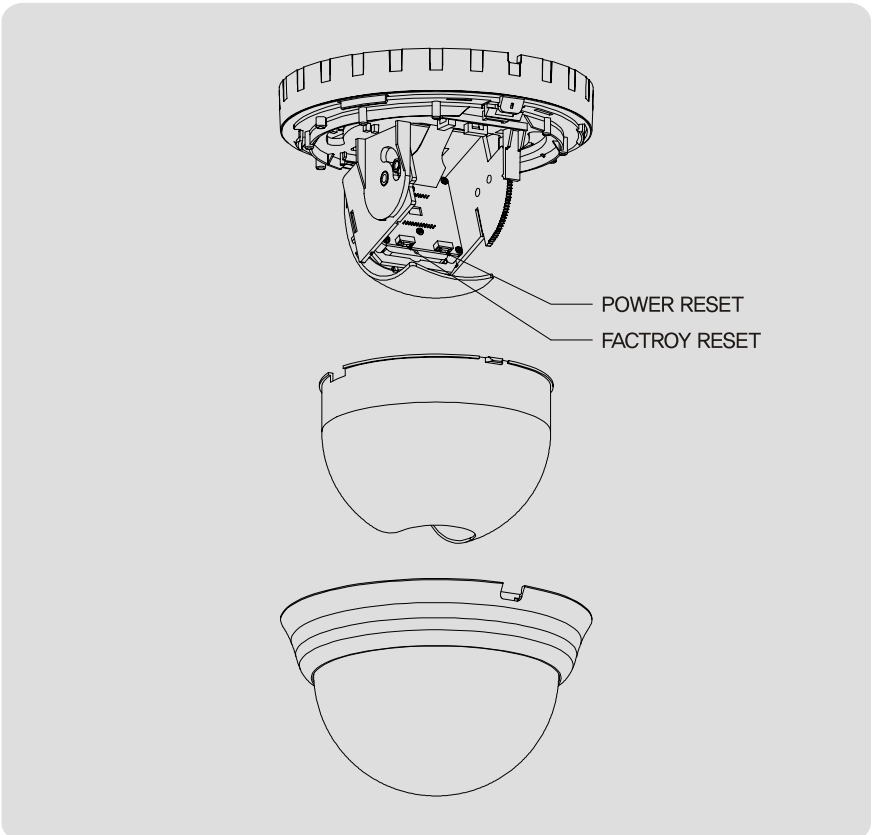




〈DETAIL "A"〉

1.4 Control board

Remove the dome cover and inside cover of the camera, you can see the two buttons are on the back side as shown on the picture.



1) POWER RESET : Press the button to reset when the unit is not working normally.

2) FACTROY RESET : Turn on the power and wait 2 minutes.
Press the button for 3 seconds to reset the ID and Passwords for administration and IP setting values to the factory default.

[Reference] Please refer to 2.2 video check in chapter 2 and chapter 4 system setting regarding default value.

1.5 Specification

1.5.1 Camera Specification

Model	TYPE 1	TYPE 2	TYPE 3
Type	Mega pixel Network Dome camera	VGA Network Dome camera	
Image Sensor	1/3" SONY Progressive scan EXview HAD CCD (1.3 Mega Pixels)	1/4" SONY Progressive scan EXview HAD CCD (330K Pixels)	1/4" SONY Progressive scan Super HAD CCD (330K Pixels)
Effective pixels	1296(H)X966(V)	659(H)X494(V)	
Cell size	3.75㎛(H)X3.75㎛(V)	5.6㎛(H)X5.6㎛(V)	
Resolution	1280X960 / 640X480	640X480	
TV type	NTSC / PAL		
Min. Illumination	0.01Lux(Sense up Auto X4)		
Scanning System	Progressive Scan		
Alarm Input/Output	Input : 1, Output : 1		
Lens	Fixed focal board Lens(option : Vari-focal Auto Iris Lens)		

1.5.2 Camera Function

BLC	Off, BLC1, BLC2, BLC3
Sense up	Off, Auto X2 ~ X255
Brightness	Adjustable
Contrast	Adjustable
Sharpness	Adjustable
AWB	Auto, Indoor, Outdoor, Fluorescent, Manual
Saturation	Adjustable
Hue	Adjustable
Negative	Off, On
Pattern Generator	Off, On
Focus index	Display Off, On
Blemish	Dynamic Compensation
EZOOM	X1 ~ X12 Selectable(available with CMS only)

※The specification is subject to change without any prior notice to improve the quality.

1.5.3 Network Specification

Summary	OS	Embedded Linux
	Network Interface	RJ45 10/100 Base-T, Ethernet
	Setting	By Web browser
		Leased Line, Cable Modem, Support Dynamic IP and Static IP. ADSL usable under Router
	Supported Protocol	HTTP, FTP, TCP/IP, DHCP, ARP, DNS, ICMP
	Security	USER AUTHENTICATION
	PC OS(Viewer)	WINDOWS 2000, WINDOWS XP, WINDOWS VISTA
		Server setting function, Web Viewer Download Page, User Homepage Upload
Image	Compression	MPEG-4, MJPEG
	Resolution	VGA, *QVGA
	Compression Rate	200 : 1(Typical)
		NTSC : VGA-30fps, QVGA-15fps PAL : VGA-25fps, QVGA-12.5fps
	Bit Rate	64kbps ~ 5000kbps
Function	Simultaneous Access	Max. 10 users(under 5 users recommended)
		Recording in client PC with CMS or FTP Server upon Alarm Event
	Motion Detection	Support
	Privacy Zone	Support
	OSD	Support
	Alarm Input/Output	Support
	Dynamic IP	Support
	IP Router	Support
	DDNS	Support

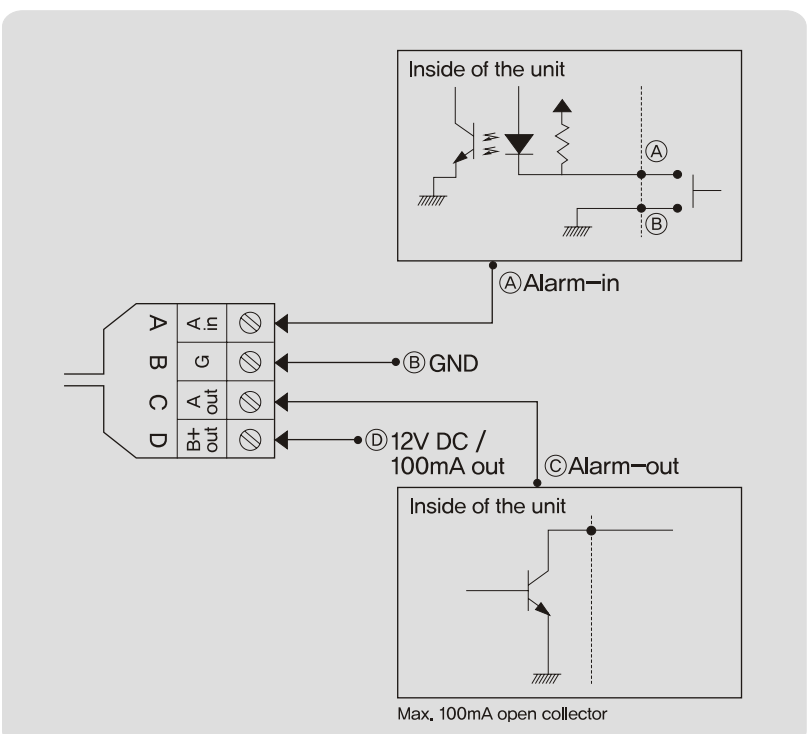
*QVGA(Quadruple VGA : 1280X960) is available on TYPE 1 only.
※The specification is subject to change without any prior notice to improve the quality.

1.5.4 Electric Specification

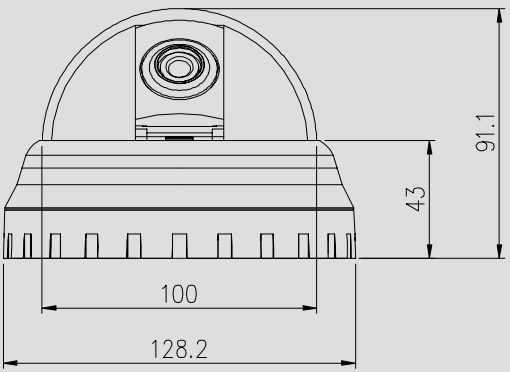
Power Supply	Regulated 12V DC(Built-in Reverse polarity protection)
Current Consumption	Max. 500㎃
Operation Temp.	5℃ ~ 50℃
Preservation Temp.	-20℃ ~ 60℃
Dimension	Ø100 X 91.1(H)mm
Weight	334g

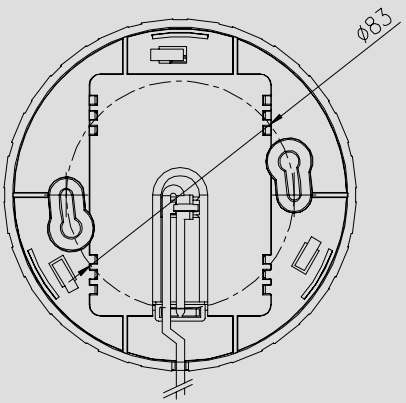
※The specification is subject to change without any prior notice to improve the quality.

1.5.5 Alarm Input/Output



1.5.6 Dimension





Chapter 2.
Installation and Video Check

Chapter 2. Installation and Video Check

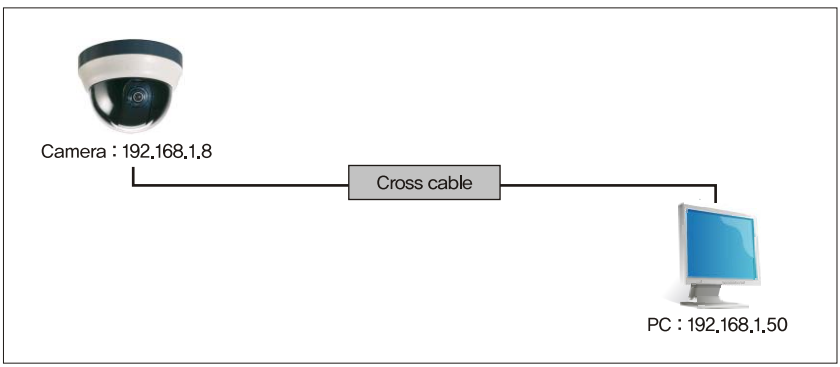
2.1 Installation

On the assumption that User PC and the camera are used under static IP,
and the camera is to be directly connected with User PC or Local Network,
The installation procedure is to be;

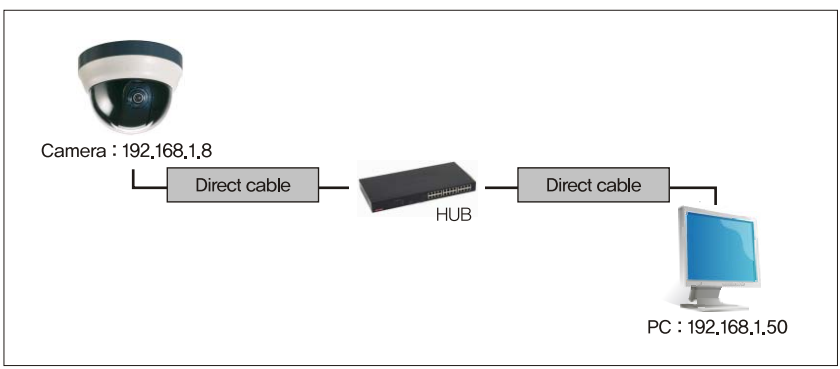
(1) Connect the camera and PC with LAN Cable(Cross cable).
(Please use the direct cable if you connect to local network)

(2) Power on camera.(Use regulated 12V DC 500㎃ only)

(3) Wait about 2 minute after power on camera, the system will be booted.



Cross cable connection



Direct cable connection

2.2 Video Check

Default network setting value of the unit is to be;

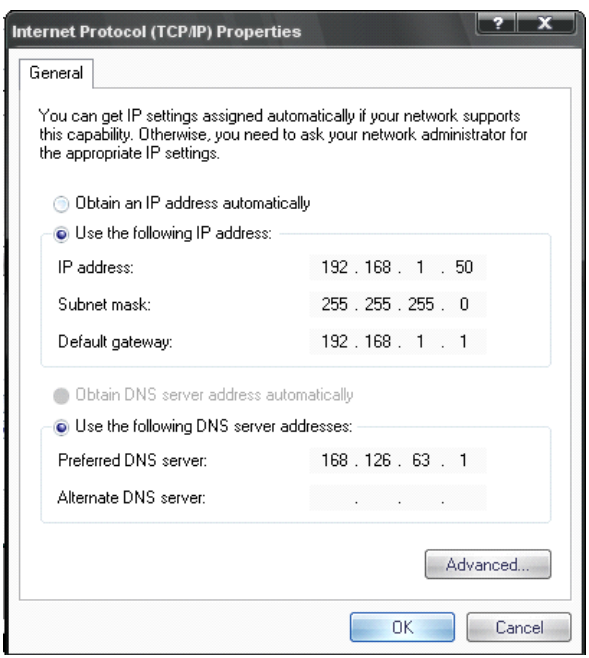
IP Address : 192.168.1.8
Subnet Mask : 255.255.255.0
Gateway : 192.168.1.1

To connect the unit in user's PC, change the setting value of PC network environment.

[Caution] Before changing the setting value, please memorize the previous setting value on your PC.

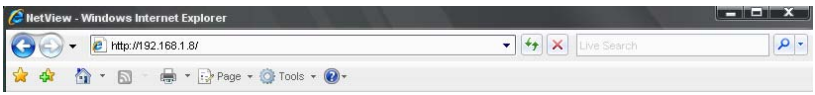
2.2.1 Change the setting value of PC network environment

Set IP Address, Subnet Mask and Gate–way of user's PC with 192.168.1.50 / 255.255.255.0 / 192.168.1.1 as shown on [Pic. 2–1].



[Pic. 2–1] Network Setting for User PC

2.2.2 Connect the camera with web browser

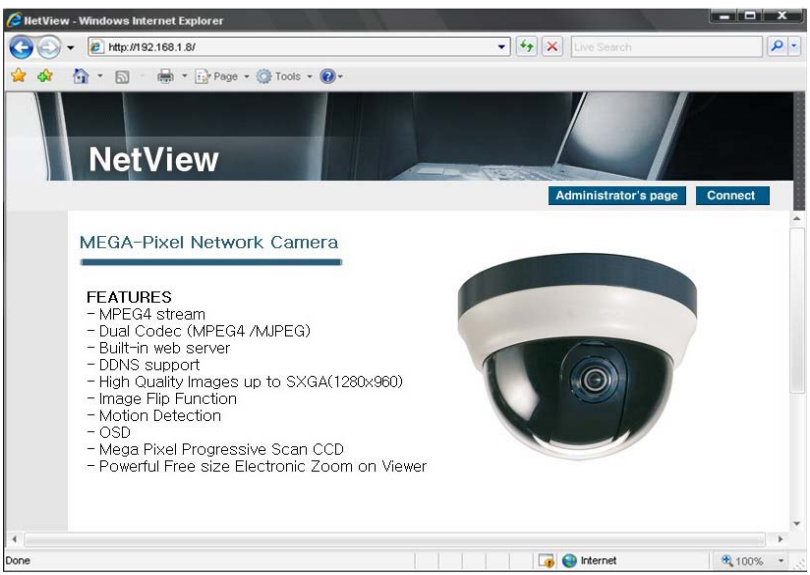


[Pic. 2–2] Web Browser Address Input

(1) Run web browser as shown [Pic. 2–2].

(2) Input 192.168.1.8 (default value) in URL and press "ENTER" button.

(3) And then, [Pic. 2–3] is to be shown.



[Pic. 2–3] Main Homepage

(4) If [Pic. 2–3] does not appear, press "factory reset" button for 3sec to reset hardware.

(5) Shown [Pic. 2–3], installation is complete.

2.2.3 See the video

Click **Connect** button on the main page [Pic. 2–3].

2.2.4 Input ID/Password

Input ID and Password and click on Login to see the video feed.

(ID : root, Password : root)

[Pic. 2-4] User Login

User's Authority to see video feed is as follow

ID	Password	Authority
guest	guest	View only
root	root	All

[Table. 1] User ID, Password, Authority

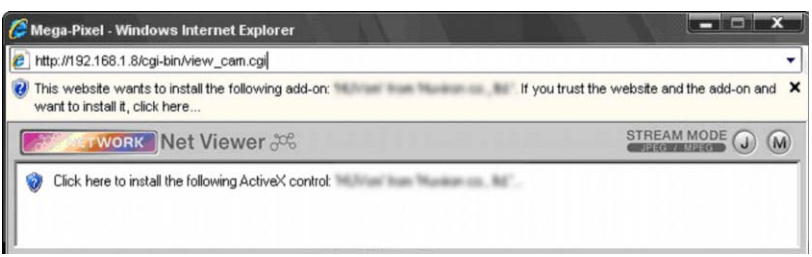
[Caution] Please change default value of ID/Password into new ones after the installation.

[Reference] Please refer to 4.2.1 Administrator's ID and Password Change regarding 'Change Administrator'.

2.2.5 Active-X auto installation

Click "install" on the security certificate to load the Active-X control.

If you choose "Don't install", the web viewer would not work.



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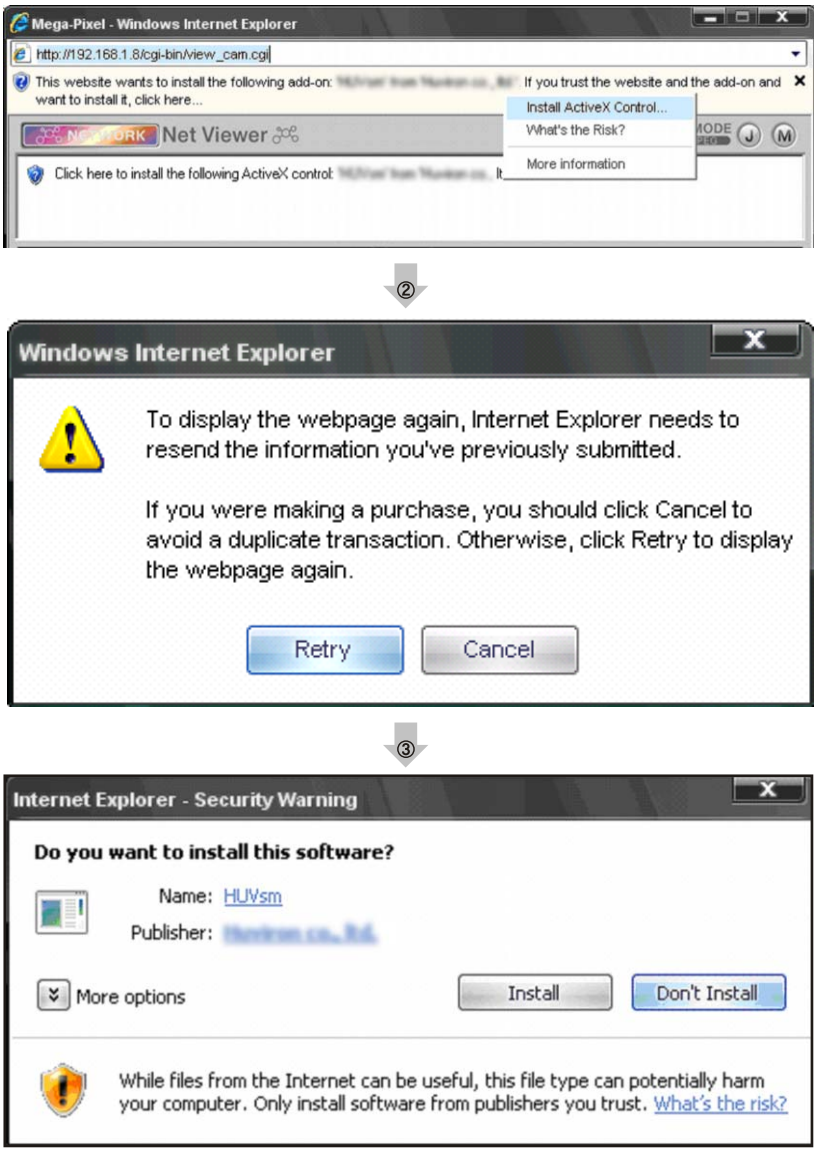


[Pic. 2–5] ActiveX Download

2.2.6 Complete the installation

Upon installation, Web Viewer [Pic. 2–6] appears and image of camera is to be seen.

[Pic. 2–6] Web Viewer

Installation and check video are completed successfully.

Please change ID/PASSWORD.

[Reference] Please refer to 4.2.1 Administrator's ID and Password Change regarding 'Change Administrator'.

2.2.7 Net Viewer description

The Net Viewer size fixed at 640 X 480.

Button	Function
	Connect to MPEG4 stream.(Default)
	Connect to MJPEG stream.
	Connect to server / Disconnect
	Go to Administrator's page
	Display current time of client PC
	Select the location to save
	Start recording
	Stop recording
	Capture still image into BMP file.

Chapter 3.
Network Setting

Chapter 3. Network Setting

3.1 Check Network and Installation Type

This Chapter is for basic setting regarding Network. To install hardware,
basic understanding of network is required.
[Reference] Please refer to Appendix for better understanding.

There are two ways to install hardware.
1. Install the camera without IP sharing device.
2. Install the camera under IP sharing device which is required PPPoE environment.

This explanation is based on upon default value of ex-factory.

〈Factory default〉
IP address : 192.168.1.8 Subnet Mask : 255.255.255.0 Gateway : 192.168.1.1

[Caution 1] Check video before installation, on 'Chapter 2.Installation and video check'.
[Caution 2] In case using IP sharing device, only global IP is available.
[Caution 3] This unit doesn't support PPPoE directly. So, IP sharing Device is required to connect to the camera.

〈Installation without IP sharing device〉
- For static IP, refer to '3.2.1 Static IP Setup'.
- For dynamic IP, refer to '3.2.2 Dynamic IP Setup'.

〈Installation with IP sharing device〉
- Should set up with Static IP, refer to '3.3 Installation with IP sharing device' .

3.2 Installation without IP sharing device(router)

3.2.1 Static IP Setup

(1) Connect the camera to PC with LAN cable(cross cable).

(2) Cable connection and network setup should be same as in 'Chapter 2. Installation and video check"

(3) Connect the camera to Web.

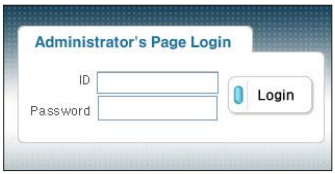
Run web browser and input http://192.168.1.8(default value) in URL and press "ENTER" button then [Pic. 3–1] will be shown.

[Caution] If you changed IP address, you should input the changed IP address.

[Pic. 3–1] Main Page

(4) Administration page log–in

Click **Administrator's page** on [Pic. 3–1], then browser shows [Pic. 3–2] log–in Page.

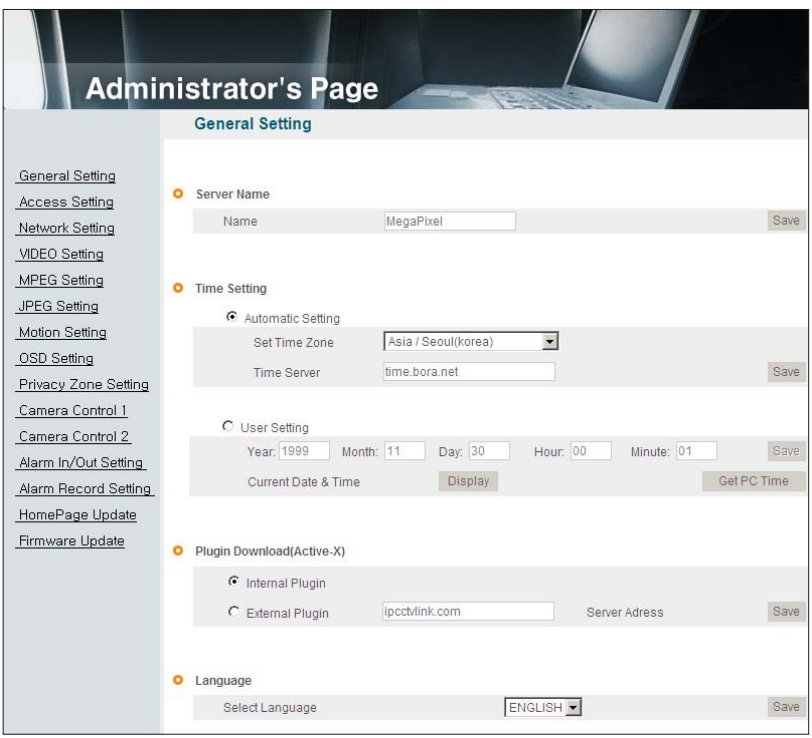


[Pic. 3–2] Administration page login

After inputting 'admin' in ID and Password line.

Click Login button then [Pic. 3–3] Administrator's page will be shown.

[Caution] If you logged in first in administrator mode, please change the password and ID of administrator.
Please refer to 4.2.1 Administrator's ID and password change.

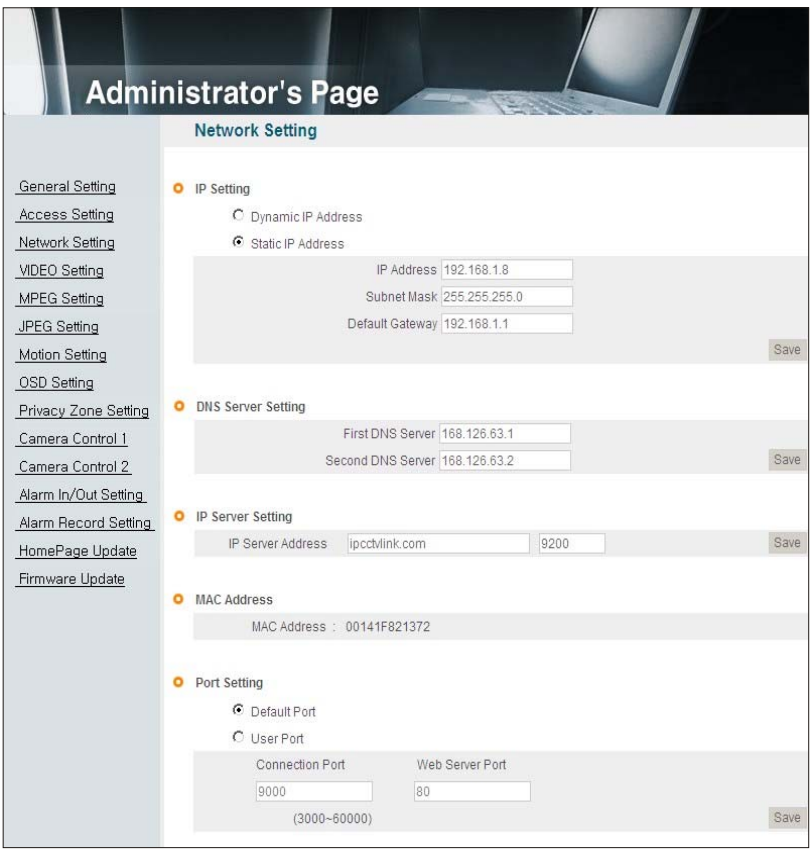


[Pic. 3–3] Administrator's Page

〈Caution〉 If your browser block Pop-up, click right mouse button and change the option to 'always allow pop-up from this site'.

(5) Network Setting

Click 'Network Setting' on [Pic. 3-3], [Pic. 3-4] appears.



[Pic. 3-4] Network Setting

(6) DNS Server Setting

For setting of DNS server, input DNS address to fit with network environment to set(Default address is DNS address of 'Dacom', 'Hanaro telecom').

Use DNS value normally set in PC. DNS address should be necessarily input.

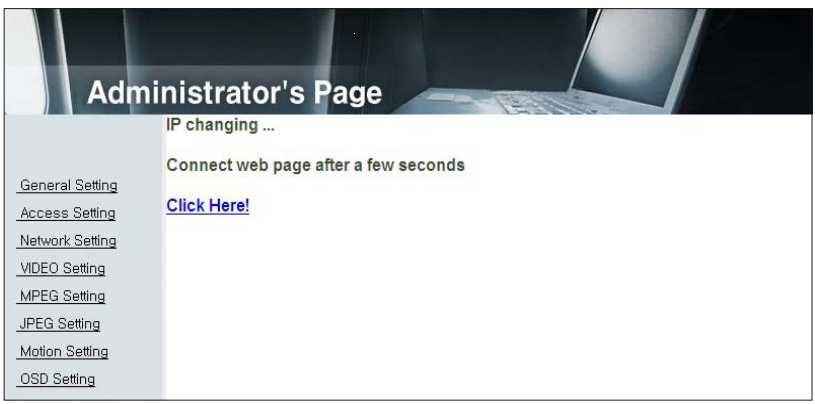
Click Save button to save setting value.

(7) IP address setting

Click 'Static IP Address' in 'IP Setting' of [Pic. 3–4], and input IP Address, Subnet Mask, Default Gateway according to network environment.

Click Save button to save setting value. Click 'Click Here' upon appearing of IP change window of [Pic. 3–5]

As IP Change loading page appears as [Pic. 3–6], the main page of changed address is connected.(May not find the main page of changed address under cross cable connection, but IP has been changed.)



[Pic. 3–5] IP change

[Pic. 3–6] IP Change loading page

(8) Remove LAN Cable(cross cable) connected between the camera and PC.

(9) Connect the camera to network with LAN cable(Direct cable).

(10) Connect PC to network with LAN cable(Direct cable).

(11) Set up IP address, Subnet Mask and Gate way of PC according to network environment(Recommended to user to remember the value before changing user's PC setting).

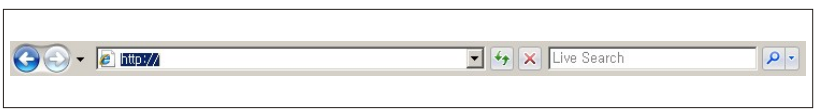
(12) Check

Run web browser on PC, input IP address set in the unit onto URL and click as [Pic. 3–7].

When main page appears as [Pic. 3–1], click Connect button to connect to web viewer and check if IP setting is correct or not.

(Refer to'Chapter 2. Installation and video check')

In case video is not seen, check whether there may be confliction of IP in network, and recheck the set value of network environment of the camera, and network environment of User's PC.



[Pic. 3–7] Connect to the unit

[Reference] If you register on DDNS server we operate, you can use the registered domain name for connection.(Refer to "5.2 DDNS Server")

3.2.2 Dynamic IP Setup

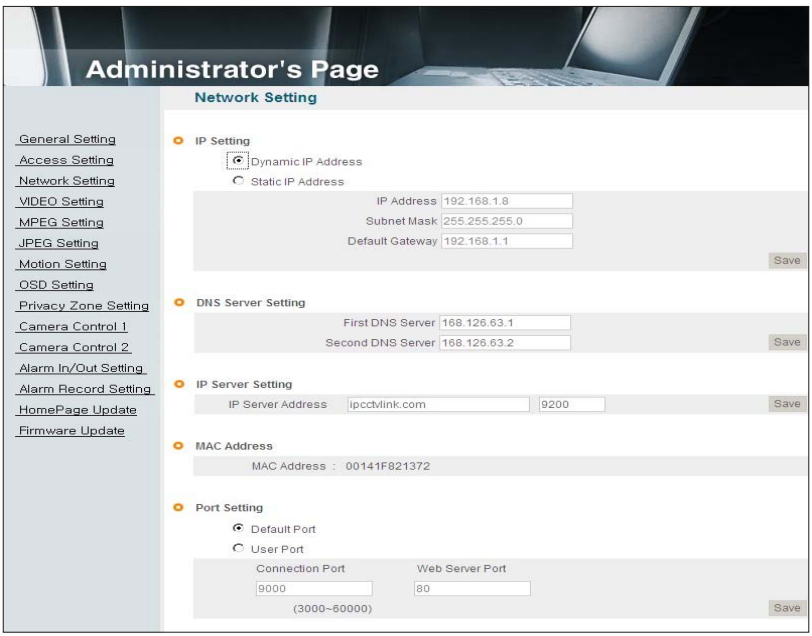
Do not set up dynamic IP in the unit except directly connecting the camera to network supporting dynamic IP. If the IP has not been allocated to the unit in dynamic IP setting, please press the 'FACTORY RESET BUTTON' for 3 sec(refer to the page of 13) then try to setup again.

(1) Connect the unit and PC with LAN cable(cross cable).

(2) Cable connection and network setting should be done same as 'Chapter 2. Installation and video check' and check video.

(3) Go to network setting page of administrator's page as per (3),(4),(5) of 'Static IP Setup'.

If you will not connect provided internet line from ISP(Internet service provider) to unit via router and you will connect to unit directly, we recommend to you to keep the MAC address on the network setting page. It needs to when register to DDNS server.



[Pic. 3–8] Network Setting

(4) DNS server setting

For setting of DNS Server, input DNS address to fit with network environment to set(Default address is DNS address of 'Dacom', 'Hanaro telecom').

Use DNS value normally set in PC.

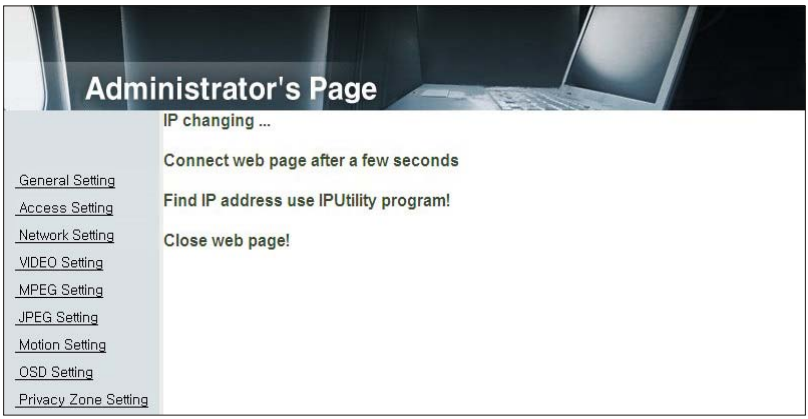
DNS address should be necessarily input.

Click Save button to save setting value.

(5) Dynamic IP address

Click on 'Dynamic IP Address' in 'IP Setting'.

Click Save button to save, and [Pic. 3–9] will be shown.



[Pic. 3–9] Dynamic IP Setting

(6) Remove LAN cable(cross cable) connected between the camera and PC.

(7) Connect the camera to network with lan cable(direct cable).

(8) Connect PC to Network with LAN cable(direct cable).

(9) Set up IP address, Subnet Mask and Gate way of PC according to network environment.

(10) Installation Check

If you will connect provided internet line from ISP(Internet service provider) to unit directly :

First, you connect to our DDNS server (http://www.ipcctvlink.com) and input the MAC address for finding a camera.(Please refer to "5.2.5 Search camera")

Open the web browser, input IP Address of camera then press the "ENTER" key. The main page will be shown as [Pic. 3–1]

If you have the DHCP server to assign an IP Address :

First close the web browser, you can find out the IP address using program of "IP Finder" in installation CD (Please refer to "5.1 Use of IP finder")

If you found the assigned IP to unit rightly, open the web browser, input IP address of the camera then press the "ENTER" key. The main page will be shown as [Pic. 3–1]

If you couldn't find the unit, it means IP has not been allocated to the unit so you have to press the 'FACTORY RESET BUTTON' for 3 sec(refer to page of 13) then try to again.

If you turn off the camera and reactivating in dynamic IP environment, might be change the IP address. So if you register the IP address to DDNS server, you can use the domain name (Please refer to "5.2 Use of DDNS server")

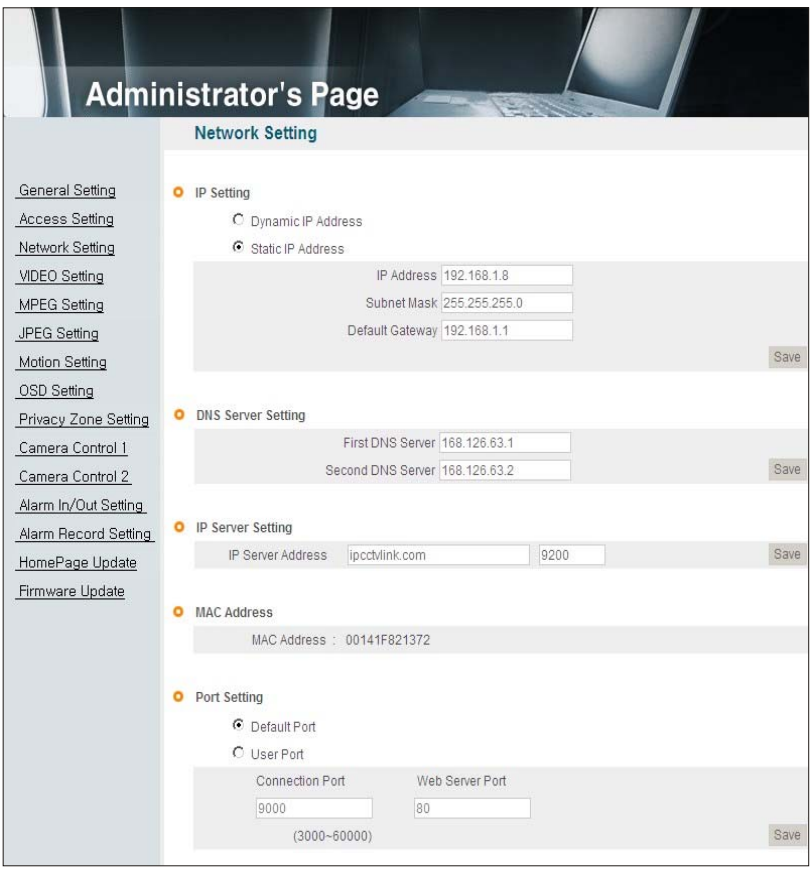
3.3 Installation with IP sharing device(router)

3.3.1 General Installation

(1) Connect the camera and PC with LAN cable(cross cable).

(2) After checking video in '2. Installation and video check', then go to the next step.

(3) Go to network setting page of Administrator's Page as per 3), 4), 5) of '3.2 Static IP Setup'



[Pic. 3–10] Network Setting

(4) DNS Server Setting

For setting of 'DNS server', input DNS address to fit with network environment to set.(Default address is DNS address of Dacom', 'Hanarotelecom'.)

Use DNS value normally set in PC.

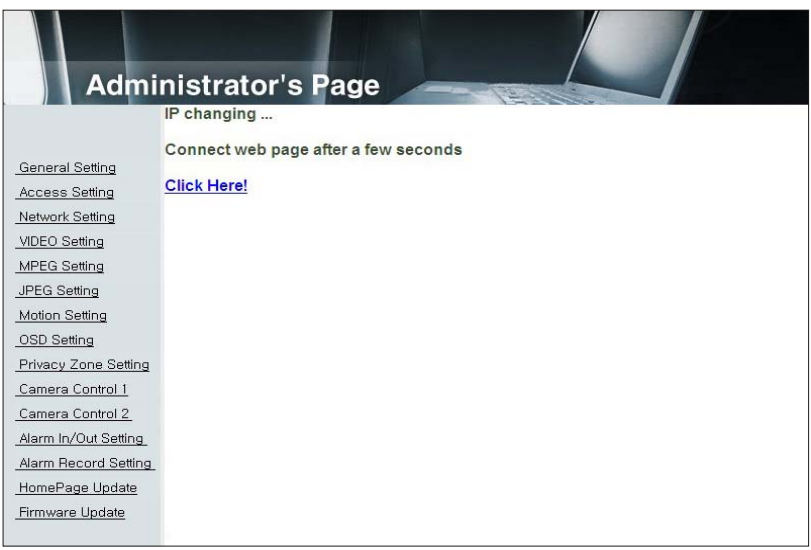
Click Save button to save the setting value.

(5) IP Address Setting

Click 'Static IP Address' in 'IP Setting' of [Pic. 3–10], and input IP Address, Subnet Mask, Default Gateway(Please refer to the manual of IP sharing device) and click button to save the setting value.

Click Save button to save the setting value.

When [Pic. 3–11] appears, click 'Click Here' to go to the changed main page. (In case of connecting with cross cable, may not found the changed page but IP change has been completed)



[Pic. 3–11] IP change

(6) Connect the camera to IP sharing device with LAN cable(direct cable).

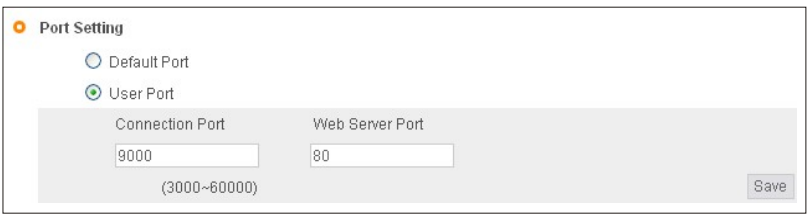
(7) Connect PC to IP sharing device with LAN cable(direct cable).

3.3.2 Port Setting change and installation

Set port in Port Setting page of [Pic. 3–12].

It is required to set each different port for many units to prevent from IP collision with other device.

Click Save button to save set value.



[Pic. 3–12] Port setting

(1) Connect from outside

To connect from outside, you should forward port you set from IP sharing device to the unit.

For more detail, please refer to the manual of IP sharing device.

(2) Local check

As following the above procedure, you can connect the camera via local LAN.

Run web browser and input IP address in URL and click 'Enter'.

If you changed web server port (), you must input 'http://IP Address:Port Number'.

For example, If you set IP address to 192.168.1.100 and changed web server port to 81, you must input Http://192.168.1.100:81.(Default of web server port: 80).

After [Pic. 3–13] appears, check video referring to '2.2 Video check'.

[Pic. 3-13] Main homepage

3.4 Cautions for Network Setting

If the firewall is used for security purpose, the unit may not work properly.
In this case, open the port of the unit, then it will work properly(Refer to the manual of IP sharing device).
The port being used by the unit can be checked on 'Port Setting' of 'Network Setting' of 'Administrator's Page'.

Port of the ex–factory is set default as follow;

Port Kind	Port Number	Remark
Web Connection Port	80(TCP)	HTTP Port
Video Streaming Port	9000(TCP)	Authentication and Control Port

In setting user port, do not use from 1600 to 1670, which port is used in the unit itself.

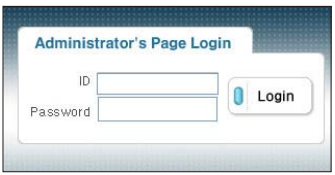
Chapter 4.
System Setting

Chapter 4. System Setting

Click **Administrator's page** on main home Page, login page [Pic. 4–1] appears.
Input 'admin', 'admin' in ID and Password line, click Login then [Pic. 4–2] Administrator's page will be shown.

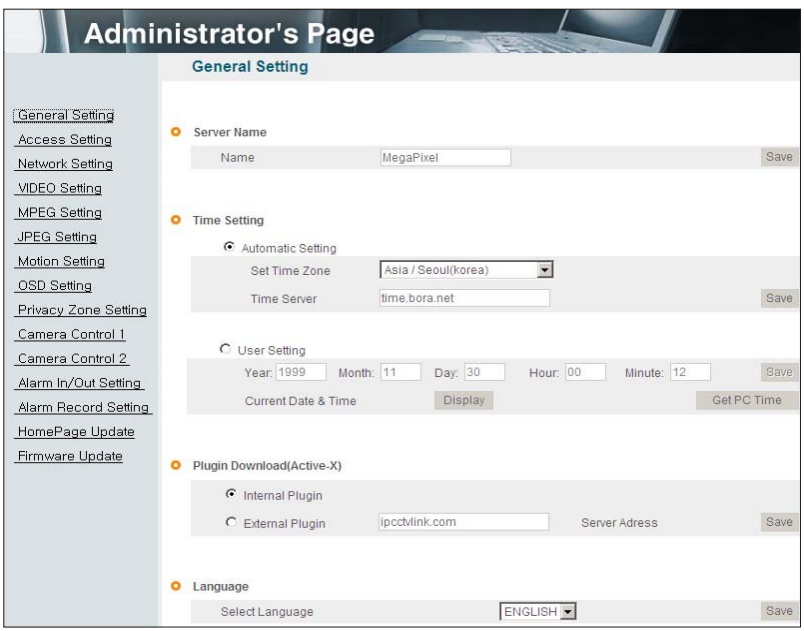
[Reference] ID and Password are preset as admin / admin in Administrator's Page.

〈Caution〉 Change ID and Password of Administrator in General Setting of '4.2 Access Setting'.



[Pic. 4–1] Administrator's page login

4.1 General Setting



[Pic. 4–2] General Setting

4.1.1 Title Setting

[Pic. 4–3] Title Setting

Server title would be shown on the top of the video when you see the video by the viewer. Server title is to be English without space(Max. 10 characters).
Click ' Save ' button to save title after inputting name.

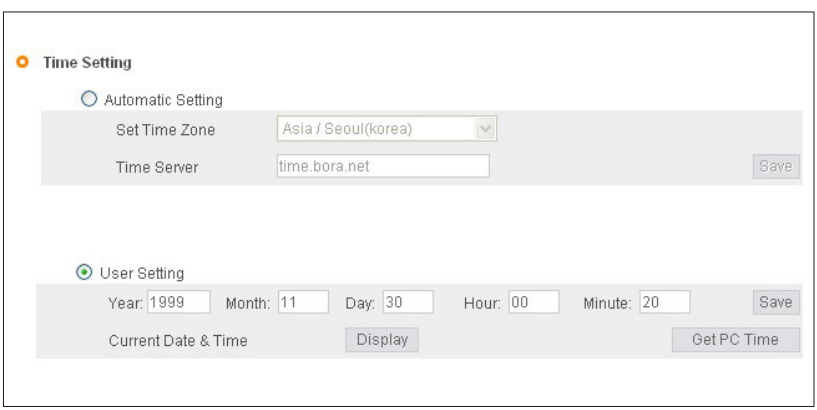
4.1.2 Time Setting

There are two ways of time setting as follow.

'Automatic Setting' : This is to set up local time in case of monitoring from different time zone area.
Select one of time zone in 'Set Time Zone' and save.

'User Setting' : This is for user to set up time directly.
There can be some gaps between local time and time of the unit.

Click ' Save ' button to save setting value.



[Pic. 4–4] Time Zone

Click 'Display' to see current time set.

[Pic. 4–5] Current time view

If 'Automatic Setting' is not correct, click ' Save ' on [Pic. 4–4] again.
(Clicking ' Save ' button, it will receive new time information.)
Click 'Get PC Time' to receive time on client PC, and click ' Save ' button to save.

4.1.3 Active–X download

This is to set how to download Active–X of web viewer, locally or from outer server designated. In case setting as local download, it has a merit to use in private network without Internet. In case of setting as download from outside, it has a merit to download the updated Active–X of web viewer automatically.

[Pic. 4–6] Active–X plug–in download route

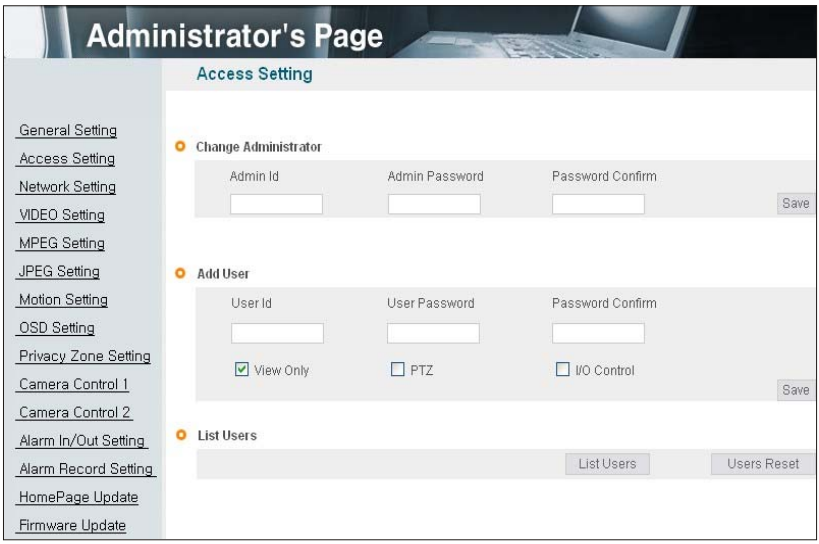
4.1.4 Select Language

This is to select language to be displayed in all web pages such as Administrator's page, web viewer and main page.

[Pic. 4–7] Select Language

It supports both English and Korean now. Click ' Save ' button to save the set value after select the language.

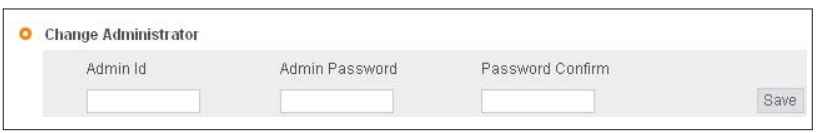
4.2 Access Setting



[Pic. 4–8] Access setting

4.2.1 Administrator's ID and Password Change

〈Caution〉 Change Administrator's ID and password and do not disclose the information to others.



[Pic. 4–9] Administrator's ID and password change

Administrator's ID and password should be English, within 20 characters, without space.

Click ' Save ' button to save the changed value after changing Administrator's ID and password.

In case of forgetting Administrator's ID and password, click 'Factory Set' button for 3 sec to return to initial value, and change Administrator's ID.

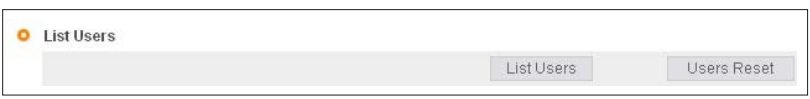
4.2.2 User Registration

This is to register an account of user who monitors and controls video. Administrator's ID and Password should be English, within 20 characters, without space. Allow the authority to users and click ' Save ' button. A maximum user to allow registration is 100 persons.

Authority	Function	Remark
View Only	Monitoring only	
PTZ	Zoom function	Not available
I/O Control	Alarm Out control	

[Pic. 4–10] User registration

4.2.3 User List and Delete



[Pic. 4–11] User list

User list is available on clicking 'List Users' to check list and delete user ID.
User ID 'guest', 'root' has be pre–registered as basic user ID on ex–factory.
In case of clicking 'Users Reset', basic user ID('guest' and 'root') will be shown without any other user lists.

[Pic. 4–12] User list

〈Caution〉 Delete 'root' and 'guest' and create another ID and Password.

4.3 Network Setting

This is to set network. Set network to fit user's network environment in '3. Network Setting'. Change network information to fit environment for the unit to be installed in.

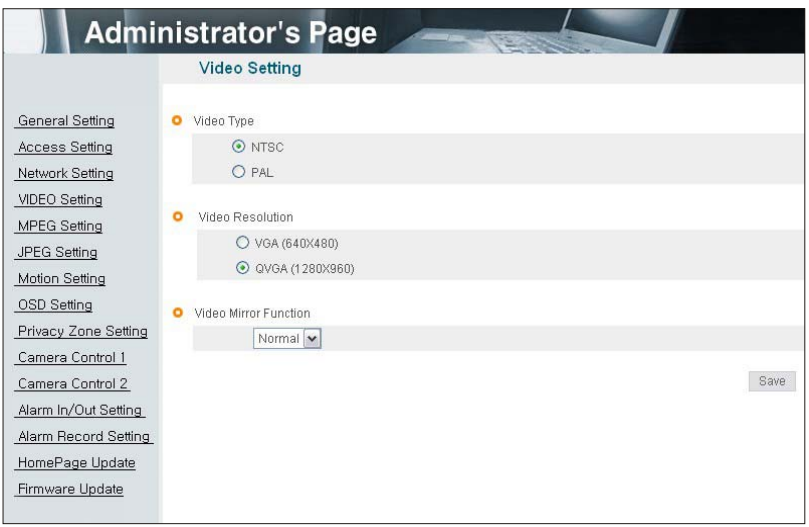
4.4 Video Setting

4.4.1 Video format

This is to select the value regarding video format(NTSC/PAL).

Please check the freguency of power supply at the place of camera installation. (60Hz for NTSC, 50Hz for PAL)

〈Caution〉 Improper selection of video format can cause the video to flicker.



[Pic. 4–13] Video setting

4.4.2 Resolution

This is to select resolution(VGA/QVGA).

In case of video resolution, selecting 'VGA', it has 'VGA' resolution both in MPEG and in JPEG. Selecting QVGA, it has 'QVGA' resolution in JPEG and 'VGA' resolution in MPEG. In this case, there is no OSD and privacy zone function in JPEG.

Video stream is dual codec which supports MPEG and JPEG at the same time.

[Reference] QVGA(Quadruple VGA) : 1280 X 960, VGA : 640 X 480.
(QVGA is available on TYPE 1 only.)

〈Caution〉 In case of changing video format or video resolution, the program will restart, please wait for a while.

4.4.3 Video mirror function

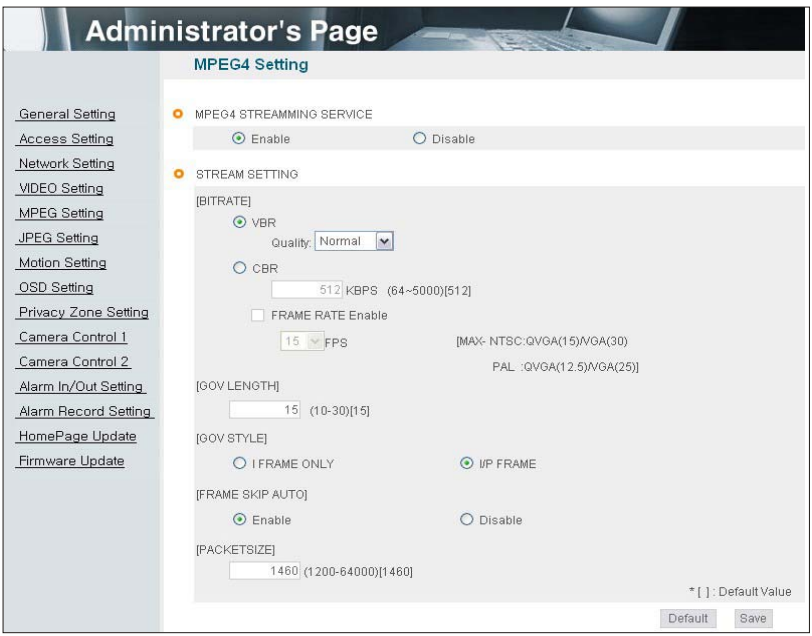
Make a mirror image of video.(Flip, Mirror, both)

Click ' Save ' button to save.

4.5 MPEG Setting

4.5.1 MPEG4 stream service

Select MPEG stream service 'Enable' or 'Disable'.



[Pic. 4–14] MPEG4 Setting

4.5.2 Stream Setting

1) BITRATE

Set the bit rate of the video stream. In case of VBR(Variable BitRate), user can select the video quality among three options(Normal, High, Very High).

Bitrate is changed automatically to keep the picture quality.

In case of CBR(Constant BitRate), bit rate is fixed to keep the transmission speed.

It is selectable from 64 to 8,000 Kbps.

〈Caution〉 When using the VBR option, it is impossible to use a setting option for the Frame rate.

[Reference] In case of selecting bit rate too low, there might be the blocking effect.

2) GOV(Group of VOP) LENGTH

Set the length of VOP which is the length from I frame to next I frame when you select I/P frame.

3) GOV STYLE

Select the style of VOP between 'I frame only' and 'I/P frame'. Selecting 'I frame only', the volume of data will increase and cause a heavy traffic in network.

4) FRAME RATE

Set the frame rate. In case of QVGA, it has Max. 15fps in NTSC and 12.5fps in PAL. In case of VGA, it has Max. 30fps in NTSC and 25fps in PAL.
(QVGA is available on TYPE 1 only.)

5) FRAME SKIP AUTO

This function is to skip the frame automatically to keep the picture quality setting low bit rate. Inactivating this function, the picture quality will be lower to keep the frame rate.

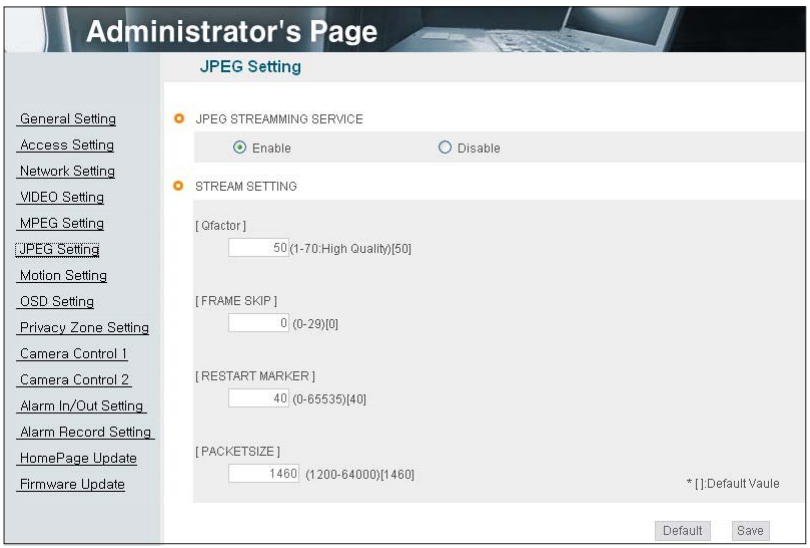
6) PACKET SIZE

Set the packet size transmitting the video data.

Click ' Save ' button to save.

〈Caution〉 In case of changing MPEG setting, the program will restart,
Please wait for a while.

4.6 JPEG Setting



[Pic. 4–15] JPEG Setting

4.6.1 JPEG Stream Service

Select whether JPEG stream service available or not.

4.6.2 Stream Setting

1) Qfactor

Set the video picture quality in JPEG. There are from 1 to 99. Selecting 1, it supports the best picture quality but the volume of data will increase. On the contrary, selecting 99, the picture quality will be lowest but the volume of data will decrease.

Recommended value is between 30 and 50.

2) FRAME SKIP

Skip the frame by user setting.

'0' can not be skipped and from 1 to 29 can be skipped. This is to keep the

volume of data from a heavy traffic in network. But in case of skipping too many frames, picture might not be natural.

Ex) 0 : Transmission frame X : Skip frame

1 : 0X0X0X0X0X ·····

2 : 0XX0XX0XX0XX ···

3 : 0XXX0XXX0XXX0XXX···

3) RESTART MARKER

It is to set the size of linkage in one picture of JPEG. '0' means it doesn't use the linkage and in this case, the volume of data will increase.

4) PACKET SIZE

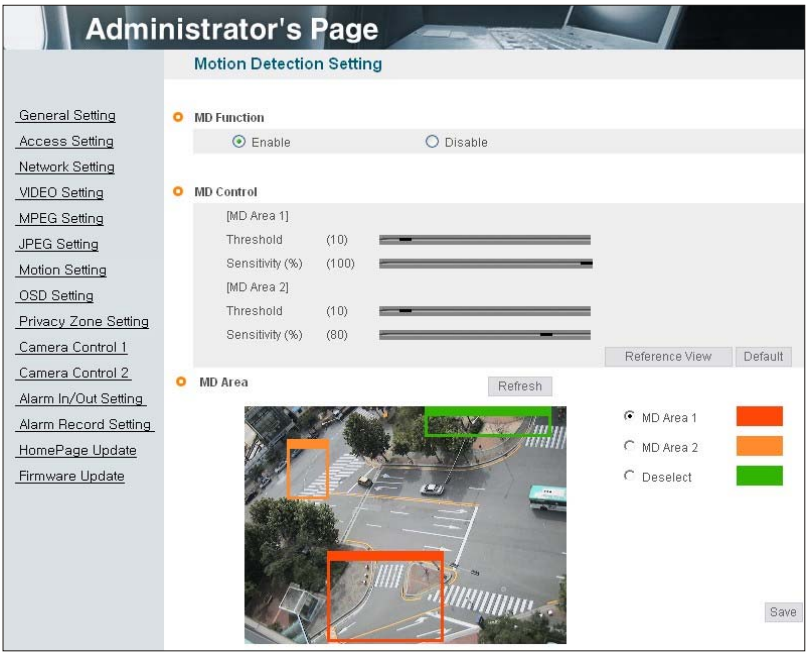
Set the packet size transmitting the video data.

Click ' Save ' button to save.

〈Caution〉 In case of changing MPEG setting, the program will restart, Please wait for a while.

4.7 Motion Setting

Motion Detection function can be affected on excessive sense-up.



[Pic. 4-16] Motion detection setting

4.7.1 MD function

Select Motion detecting function 'Enable' or 'Disable'.

4.7.2 MD control

MD Area 1 & MD Area 2 can be set separately.

(1) Threshold

This is to set the threshold to decide whether it is motion or not. Set this value properly to reduce error.

8~20 is recommended for normal picture quality.

(2) Sensitivity

This is to set the threshold to decide whether it is motion or not. Set this value properly to reduce error.

In other words, it means the percentage of moving object in motion area.

It must be set higher, if the object is small compare to motion area.

Unnecessary motion can be reduced with adequate sensitivity set.

70~90 is recommended for normal picture quality.

Threshold	Sensitivity of MD area1		Sensitivity of MD area2	
	Average(%)	Minimum(%)	Average(%)	Minimum(%)
5	74	10	90	4
10	81	78	93	60
15	84	81	93	65
20	86	82	94	70
30	89	84	95	73
50	94	88	98	78

Value Reset | Close

[Reference] Reference view : This table is made to help sensitivity set and it is not absolute value. It shows the sensitivity of motion area according to each threshold. Min. value is the min. sensitivity which motion can be detected. So motion is not detected, if sensitivity is set less than Min. value in each threshold. Average value is the average sensitivity which displayed for a few seconds.

If sensitivity value is "100", it means motion is not detected at all. On the contrary, if sensitivity value is "0", it means motion is detected in all motion area. If "0", or similar value is displayed while unnecessary motion is detected, please do not use the threshold value & sensitivity value. Press 'Value Reset' button, if you want reset.

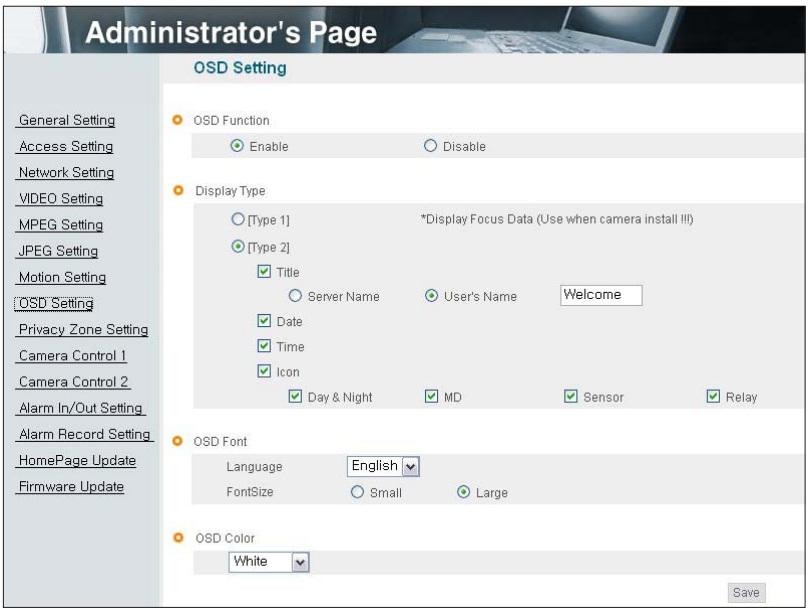
Default : Camera back to factory default once default button is pressed.

4.7.3 MD Area

There are 2 motion area and 1 exception area. To set the detecting areas, click radio button and push the left mouse button and drag where you want to set. To move the area where you already set, when there is '  ' on your mouse point, push the left mouse button and drag to the area you want. Click "Refresh" button to see the current video picture.

Click ' Save ' button to save.

4.8 OSD Setting



[Pic. 4–17] OSD Setting

4.8.1 OSD Function

Select OSD function 'Enable' or 'Disable'.

4.8.2 OSD Type

1) Type 1

This is to display focus data on OSD. Higher value means clearer image. Seeing this value, a user is able to adjust the focus more correctly.

2) Type 2

This is to select contents to display on OSD. There are Title, Date, Time and Icons(Day, Night, Motion, Alarm Input, Alarm Output).

Day : Night : Motion : Alarm Input : S Alarm Output : R

4.8.3 OSD Font

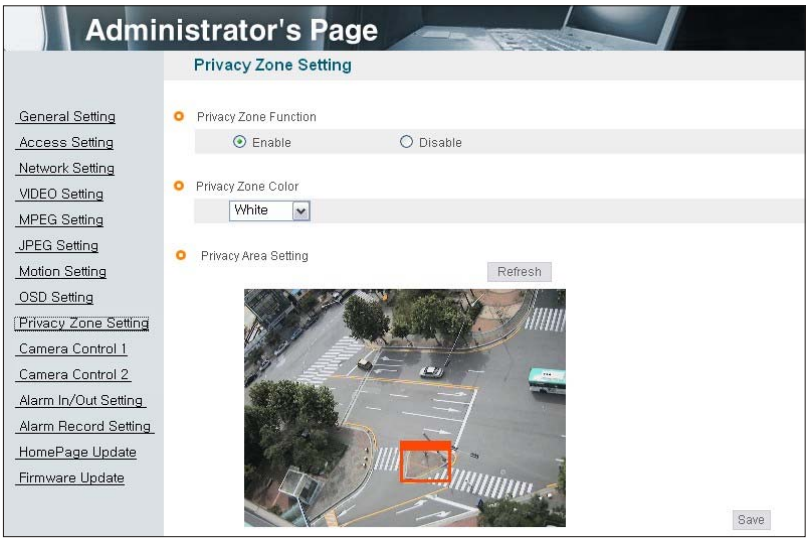
This is to select the language and font for OSD.

4.8.4 OSD Color

This is to select color for OSD.

Click ' Save ' button to save.

4.9 Privacy Zone Setting



[Pic. 4–18] Privacy Zone Setting

4.9.1 Privacy Zone Function

Select privacy zone function 'Enable' or 'Disable'

4.9.2 Privacy Zone Color

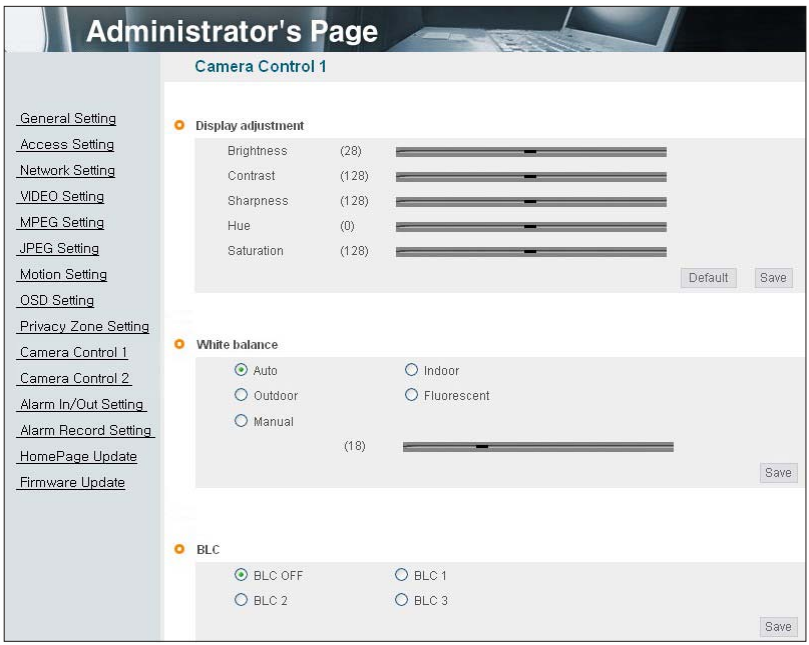
Select color for privacy zone.

4.9.3 Privacy Area Setting

This menu is to set the area for privacy function. To set the areas, push the left mouse button and drag where you want to set. To move the area where you already set, when there is '☝' on your mouse point, push the left mouse button and drag to the area you want. There is a size limitation. Click "Refresh" button to see the current video picture.

Click ' Save ' button to save.

4.10 Camera Control1



[Pic. 4–19] Camera Control 1

4.10.1 Display Adjustment

- **Brightness** : Adjust the brightness of picture.
- **Contrast** : Adjust the contrast of picture.
- **Sharpness** : Adjust the sharpness of picture.

  [Reference] As the level of sharpness increases, the screen gets sharper and the level of noise also increases.
- **Hue** : Adjust the hue of picture.
- **Saturation** : Adjust the saturation of picture.

Click 'Default' to initialize the value.

Click ' Save ' button to save.

4.10.2 White Balance

- **Auto** : Adjust white balance automatically.
- **Indoor** : Adjust white balance to indoor environment(3200°K).
- **Outdoor** : Adjust white balance to outdoor environment(5600°K).
- **Fluorescent** : Adjust white balance to fluorescent environment(4000°K).
- **Manual** : Adjust white balance manually.

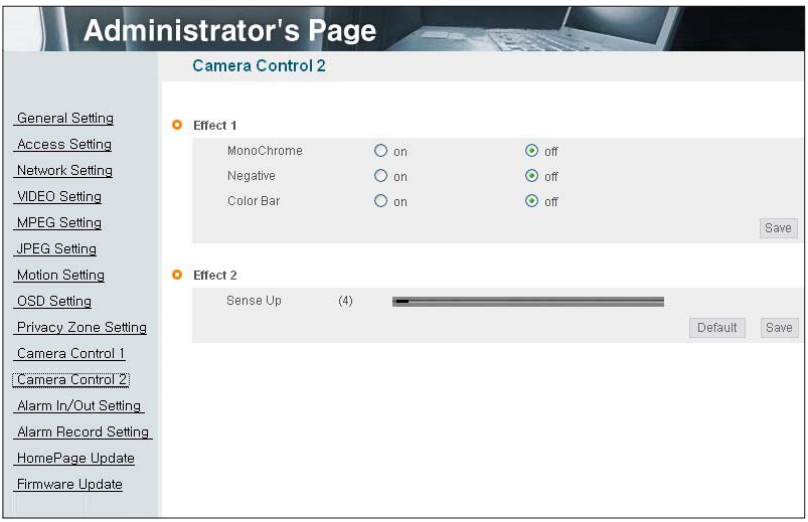
Click ' Save ' button to save.

4.10.3 Back Light Compensation

It is used to get the best quality picture against the back light.

- BLC OFF : Not use back light compensation function.
- BLC1 : Select this function when a subject is in the middle of back light.
- BLC2 : To see a shadow subject, light is controlled automatically regardless of position.
- BLC3 : This is a mode when a subject is dark but bright surrounding.

4.11 Camera Control 2



[Pic. 4–20] Camera Control 2

4.11.1 Effect 1

- MonoChrome : Change color picture to B/W.
- Negative : Reverse the brightness and color.
- Color Bar : Display color bar picture.

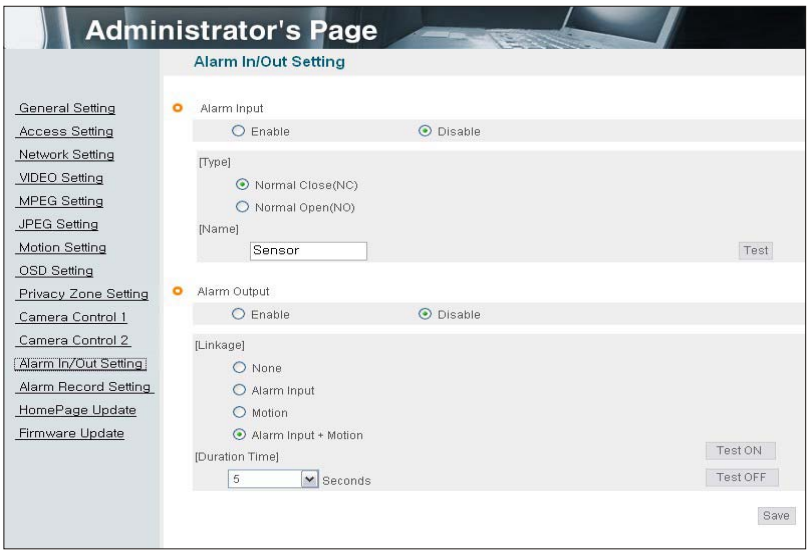
Click ' Save ' button to save.

4.11.2 Effect 2

This is relating to sense up function. Low shutter speed which can gather more light by increased exposure of the light is suitable for the dark circumstances and at night. Using this mode, you can distinguish the outline and the color of the objects. But, regarding moving objects, its outline might not be clear. And excessive Sense up function might effect on motion detection.

Click ' Save ' button to save.

4.12 Alarm In/Out Setting



[Pic. 4–21] Alarm In/Out Setting

4.12.1 Alarm In

1) Alarm Input

Select alarm input 'Enable' or 'Disable'.

2) Type

Select Normal Close(NC) or Normal Open(NO).

Circuit of N/O type is usually open, and the activation of the sensor occurs at the time of close, and N/C type works reverse way.

3) Name

Input the name of equipment for alarm input.

5) Test

Click 'Test' button to test the operation when the alarm event happens.

4.12.2 Alarm Out

1) Alarm Output

Select alarm output 'Enable' or 'Disable'.

2) Linkage

- None : Alarm output function doesn't operate relating alarm input or motion event.
- Alarm input : Alarm output function operates only by alarm input event.
- Motion : Alarm output function operates only by motion event.
- Alarm input + Motion : Alarm output function operates by both alarm input and motion event.

3) Duration Time

Set duration time upon alarm events.

4) Test on

Alarm output is activated by compulsion and you can check the action internally.

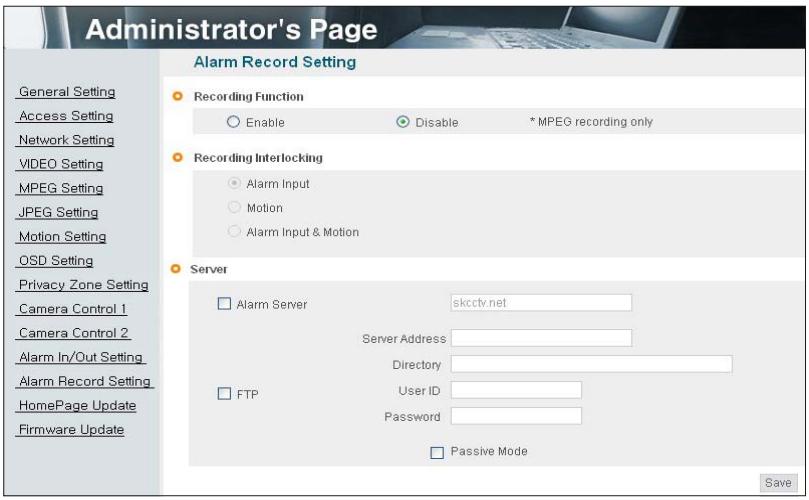
5) Test off

Alarm action will be terminated.

Click ' Save ' button to save.

[Reference] · Alarm input is the same meaning with sensor or sensor input.
· Alarm output is the same meaning with relay.
· Alarm event is the same meaning with alarm input or motion event.

4.13 Recording Function



[Pic. 4–22] Alarm Record Setting

4.13.1 Recording Function

Select recording 'Enable' or 'Disable' upon alarm events.

4.13.2 Recording Interlocking

1) **Alarm Input** : Record by events only upon alarm input.

2) **Motion** : Record by events only upon motion detection.

3) **Alarm Input & Motion** : Record by events upon alarm input and motion detection.

4.13.3 Server

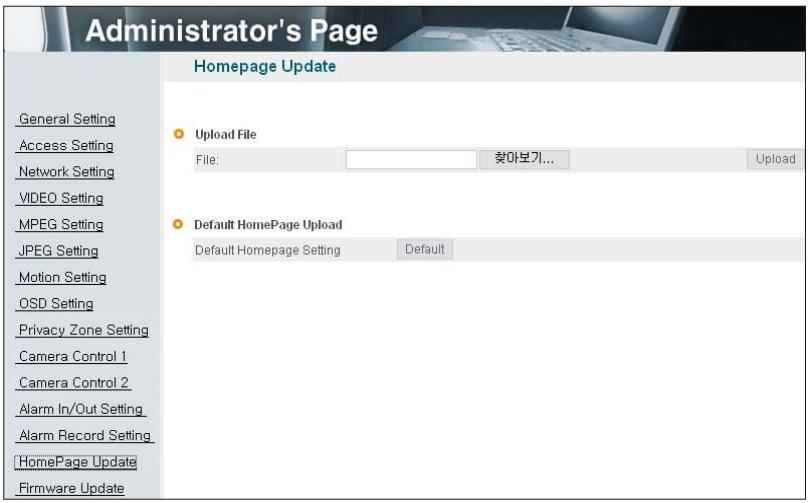
1) **Alarm Server** : Input domain name of alarm server to send message when the alarm event happens.

2) **FTP Server** : To send the recorded video to FTP server upon alarm event, Input FTP server address, folder name, user IP and password, FTP folder name(mandatory).

[Reference] Please refer '5.2.3 List of camera' to use recorded data in FTP server.

Click ' Save ' button to save.

4.14 Homepage Update



[Pic. 4-23] Homepage Update

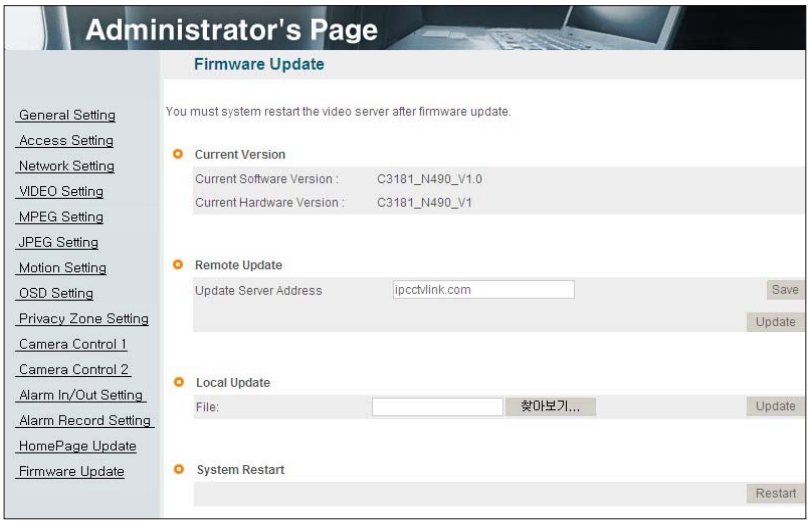
Homepage update function is for user to upload the main page of the unit onto user's homepage.

User's homepage is composed of 3 files as like index.html, top.htm, main.htm. The file for user to use is main.htm. After making web page(main.htm) and save it as file name of main.htm, upload by the function of 'Homepage Update', then main.htm page is to be the 1st main page of the camera(Image file is not uploaded). User homepage cannot exceed 300Kbyte and 800x600(Image size).

If user wants to re-make user's homepage into default, click 'Default Home Page Upload'.

4.15 Firmware Upgrade

In case firmware is upgraded in the near future, our upgrade server(http://ipcctvlink.com) will automatically upgrade firmware of the unit. Upgrade is only supported via internet.



[Pic. 4–24] Firmware Update

1) Current Version

Display current software and hardware version.

2) Remote Upgrade

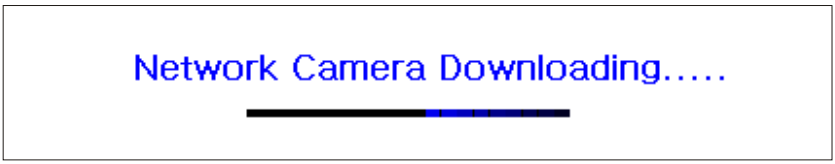
Upgrade server address is "http://ipcctvlink.com" as default address.

If there is the wrong address, re–check and input the address and click ' Save ' button.

Click 'Update' on 'Remote Update' and the massage is displayed as follow.

[Pic. 4–25] Firmware Remote Update

This will be automatically upgraded upon clicking 'Download' button after connecting to upgrade server and checking version.

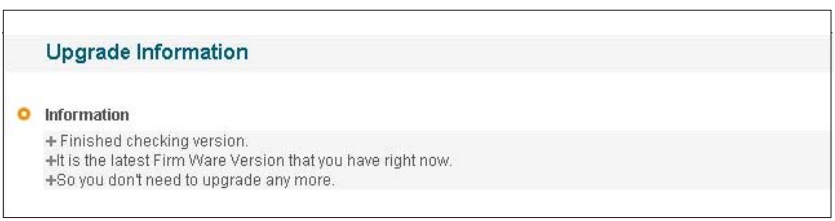


[Pic. 4–26] Firmware Download

'Downloading' message will be shown until completion of update(it may take time according to network situation). Upon completion of upgrade, there appears message showing upgrade result. Message as follow is showing that upgrade has been correctly done. Click 'Restart' in 'System Restart' to restart system.

[Pic. 4–27] Upgrade completion

If picture is displayed as follow, it means that this unit has been upgraded to the latest version, there is no need to update any more.



[Pic. 4–28] Check of upgrade version

If user found message as follow, there is an error in connection to upgrade server, re-check internet connection or DNS server address in '3. Network Setting' and try to upgrade again. If user keep finding message as follow or cannot upgrade, contact an authorized technician.

[Pic. 4-29] Upgrade server connection error

3) Local Upgrade

This way is to use software file on user's PC to upgrade(Regarding procedure, refer to remote firmware upgrade.).

In case of upgrade sequence, choose new software file with "Search" button and press "Upgrade" button. Restart the camera after upgrade completion message. In case of local upgrade, it does not care firmware version.

4) System Restart

This is the function to restart the camera system.

Chapter 5.
IP Finder & DDNS Server Setting

Chapter 5. IP Finder & DDNS Server Setting

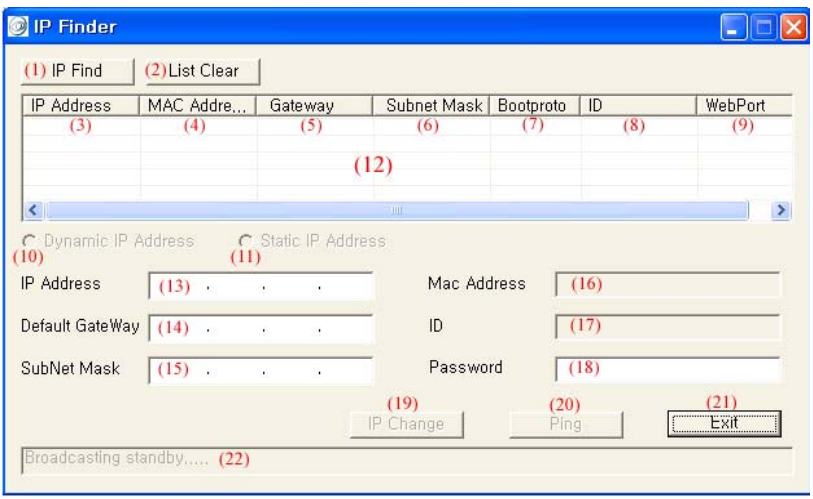
5.1 Use of IP finder

This program is the utility to find out the unit connected to local network. It is useful for the application of the unit connected by DHCP function.

It can provide you the information such as IP address, MAC, web port for easy installation and use.

5.1.1 Run IP finder program

Double click "IP Finder" file to open the program, [Pic. 5–1] will be shown.



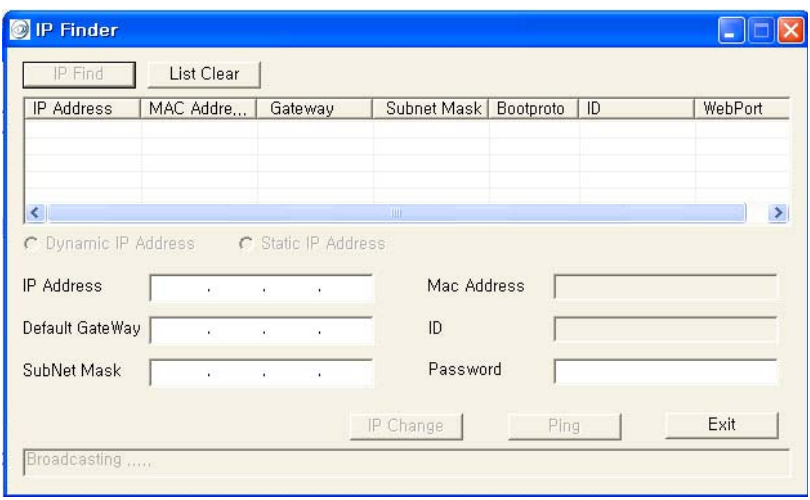
[Pic. 5–1] IP Finder

Description of IP finder function

No	Description	No	Description
1	Find IP	12	List of the unit
2	Delete the list	13	Input IP address
3	IP address of the unit	14	Input Gateway
4	MAC information of the unit	15	Input SubNet Mask
5	Gateway	16	MAC address information
6	Subnet Mask	17	Administrator ID
7	Static IP/Dynamic IP	18	Administrator password
8	Administrator ID	19	Change the information to setting values on 13,14,15
9	Port number to connect to web	20	Test of communication(Ping)
10	Set dynamic IP	21	Exit the program
11	Set static IP	22	Status of the program

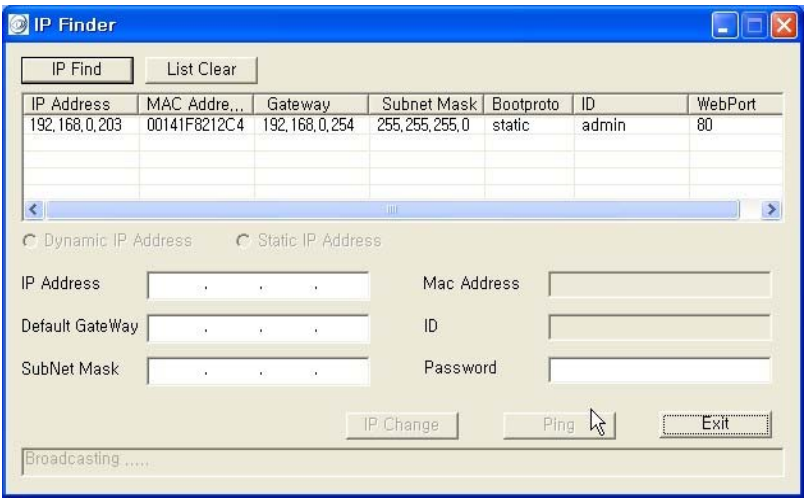
5.1.2 Find IP address

Click IP Find button to find IP address of the unit on local network.



[Pic. 5–2] IP Finding

Below picture will be shown, after IP Finding complete.

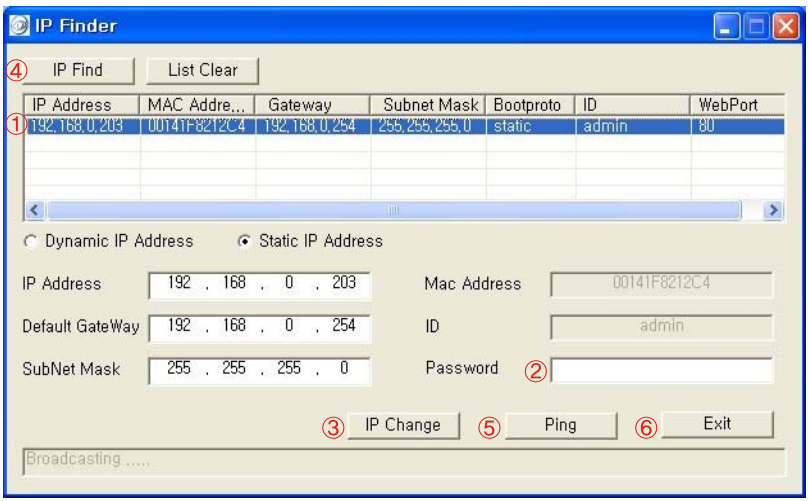


[Pic. 5–3] IP Finding completed

You can connect easily by inputting the information of IP address and web port. In addition, you can get the information of MAC address required on registration of server.

5.1.3 Change IP address

After finding IP address, if you want to change IP address, Gateway or Subnet Mask, double click IP address you want to change and [Pic. 5–4] will be shown.



[Pic. 5–4] Change of IP address

〈Procedure〉

① Double click IP address you want to change.

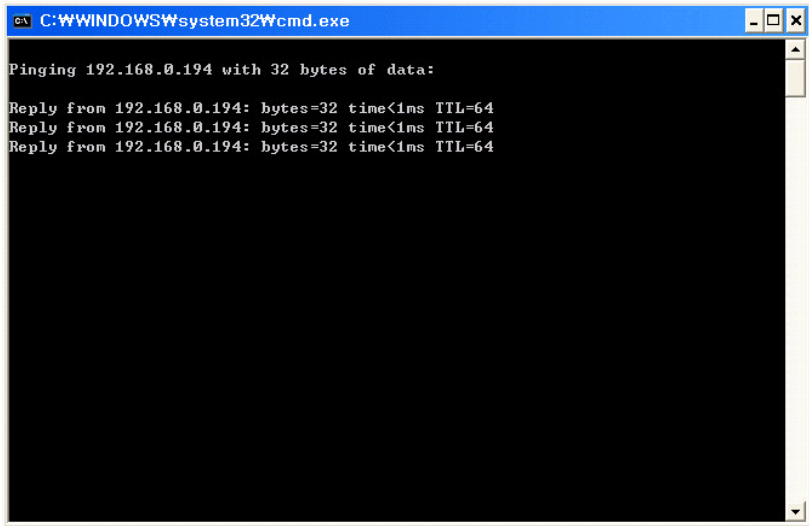
② Input Password(Password •••••).

③ Click IP Change button to change the information.

④ Click IP Find button one more time to check the changed information.

⑤ Double click the changed IP address and click Ping button to check.

⑥ Click Exit button to exit the program.


C:₩WINDOWS₩system32₩cmd.exe
Pinging 192.168.0.194 with 32 bytes of data:
Reply from 192.168.0.194: bytes=32 time<1ms TTL=64
Reply from 192.168.0.194: bytes=32 time<1ms TTL=64
Reply from 192.168.0.194: bytes=32 time<1ms TTL=64

[Pic. 5-5] Ping

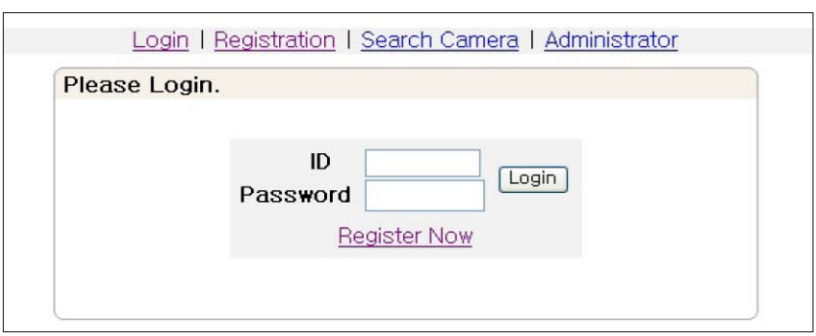
5.2 Use of DDNS server

Run web browser and input http://ipcctvlink.com in URL and click "Enter", then [Pic. 5–6] will appear as follows.

[Pic. 5–6] DDNS server

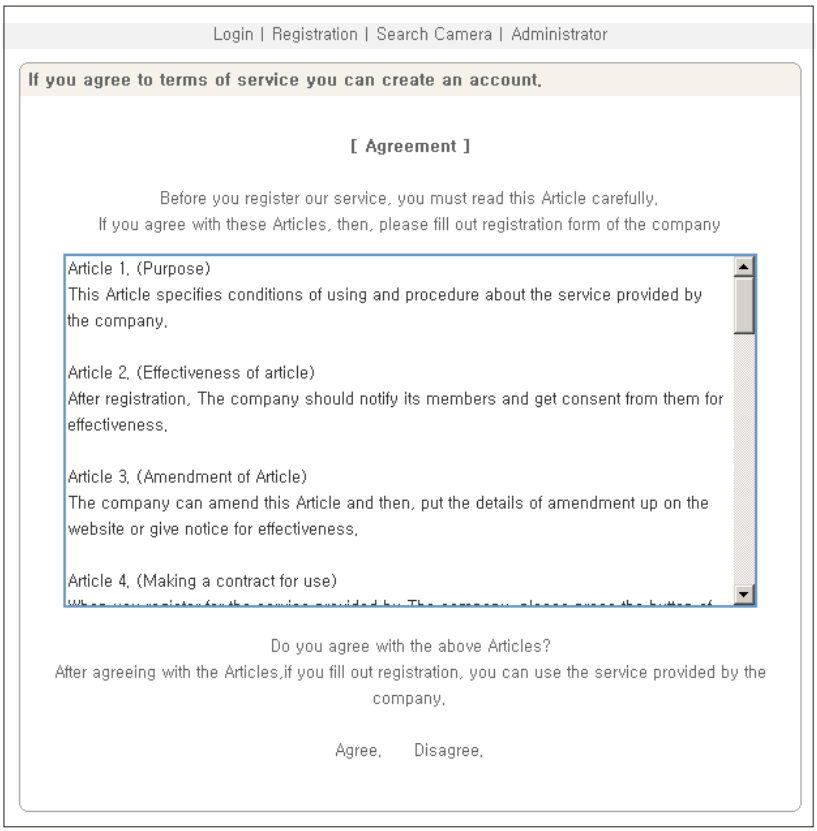
Click the language on [Pic. 5–6] user want to use(KOREAN / ENGLISH).

5.2.1 User registration



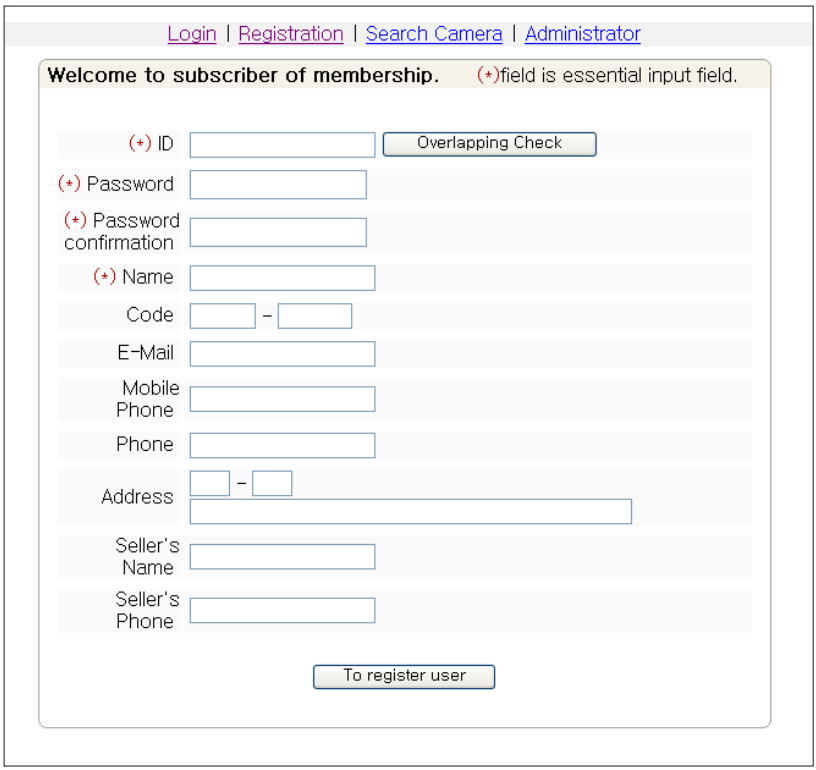
[Pic. 5–7] User login

Click "Register Now" in [Pic. 5–7].



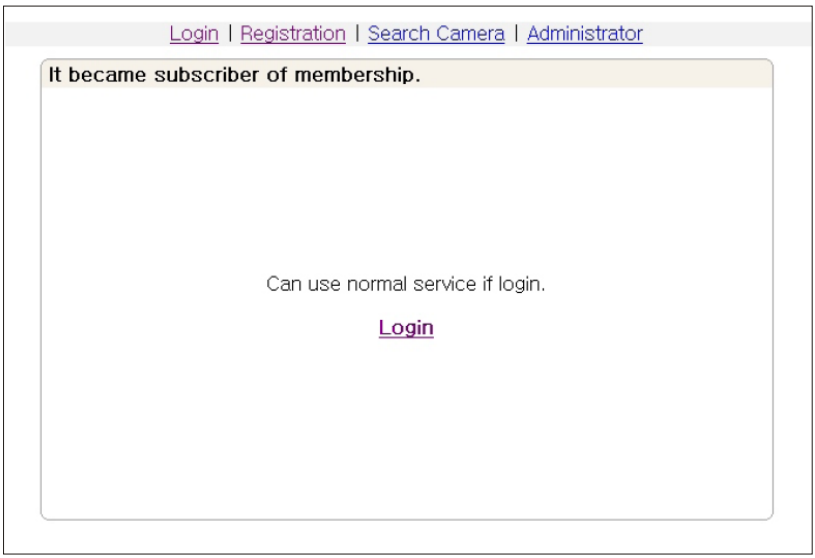
[Pic. 5-8] Agreement

Read the agreement carefully and click "Agree" in case to agree, and go to the next page.



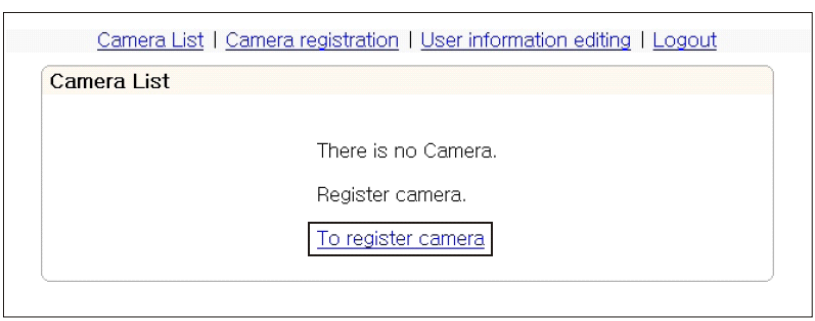
[Pic. 5–9] User registration

The part marked with (*) is mandatory. User ID is to be double–checked overlapping. Then click "To register user".



[Pic. 5–10] User registered

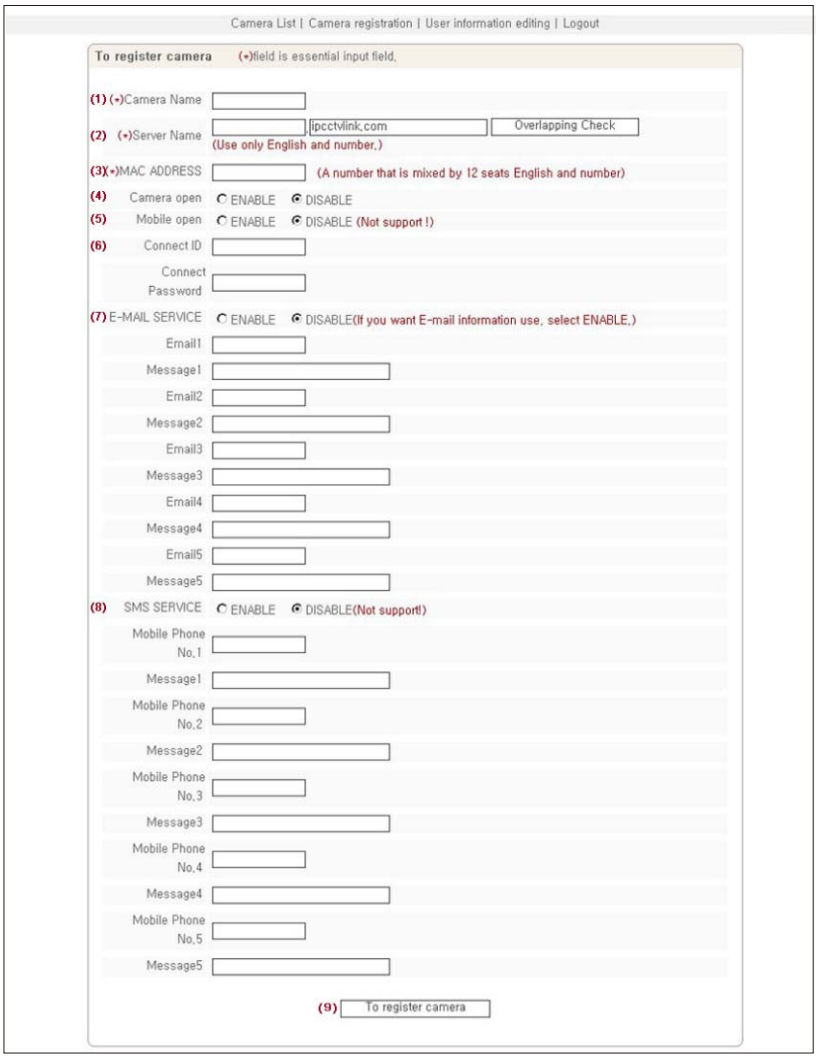
If [Pic. 5–10] appears, User Registration has successfully completed.
Click "Login" and input user ID and password to connect to DDNS server.



[Pic. 5–11] Log–in succeeded

5.2.2 Camera registration

Click "To register camera" in [Pic. 5–11] to go to Camera Registration Page.



[Pic. 5–12] Camera registration

(1) Input name of the camera you want to use, which will be applied only in DDNS server.

(2) Server name is to input domain name to connect to the camera.
It is recommended to give the name easy to understand and remember as a domain name because it is available to connect to the unit by domain name in case not knowing IP address of the camera. Domain name should not be duplicated. Register it after checking whether it is duplicated or not.

〈Caution〉 Please don't include special letter to domain name

(3) It is MAC address given to the camera and checked by IP finder program or Administrator's page.

(4) This is to check whether the camera is opening to the public or not.

(5) This is for the function to connect to monitor or control video of the camera on mobile phone. (This function is not available now.)

(6) ID and Password to connect to the camera on mobile phone.(This function is not available now.)

(7) This is the function to send the set message to E-mail address set by user upon alarm.

(8) This is the function to send the set message(SMS) from DDNS server to mobile phone number set by user upon alarm.(This function is not available now.)

(9) Click "Camera Registration" to save the registered information after input of all information.

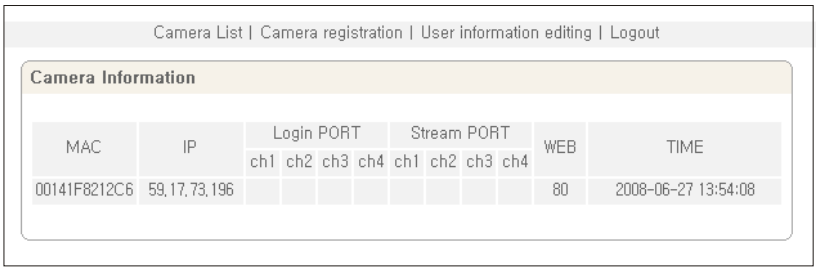
[Reference] SMS and mobile monitoring functions are not available for this model.

5.2.3 List of camera

Input the registered User ID and password to connect to DDNS server on [Pic. 5-2]. [Pic. 5-13] shows the registered list of the camera.

[Pic. 5-13] Camera information

(1) Upon clicking on "Name"(ex: test01), will show the camera Information. "Time" is the latest time for the camera to report to DDNS Server, MAC information, IP address and PORT.

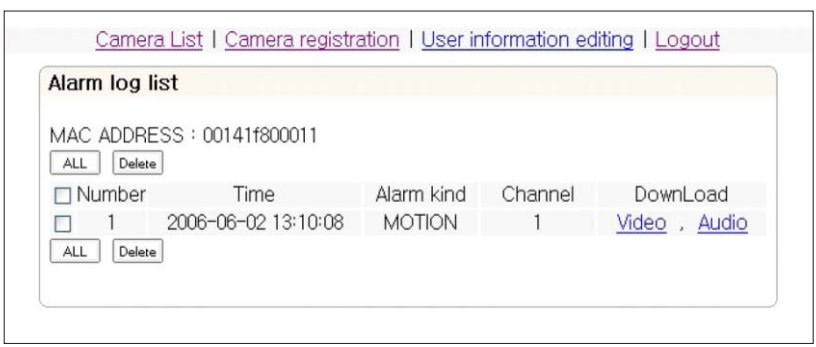


[Pic. 5–14] Camera information

(2) On clicking "Editing" on [Pic. 5–13], the page of "Camera Registration" to change the information of camera registered, will appear. Change the information and click "Camera Change" to save the new information.
"MAC" is not changeable. To change "Server Name", double–check is required.

(3) Upon clicking "Connect" on [Pic. 5–13], the main page will appear.

(4) Upon clicking "View" of "Alarm Log" on [Pic. 5–13], event information transmitted to DDNS server is to be displayed. Event information is to be saved up to 30. In case of full saving up to 30, it overwrites the oldest one.



[Pic. 5–15] Alarm log list

"Alarm Log List" shows the information of a channel, alarmed time, type of alarm. It is available to delete the log file. The camera sends the recorded files, dividing into video file and audio files, to DDNS Server. In case there is no recorded file, the message will show "No File". In case the file has not sent to DDNS server yet, the

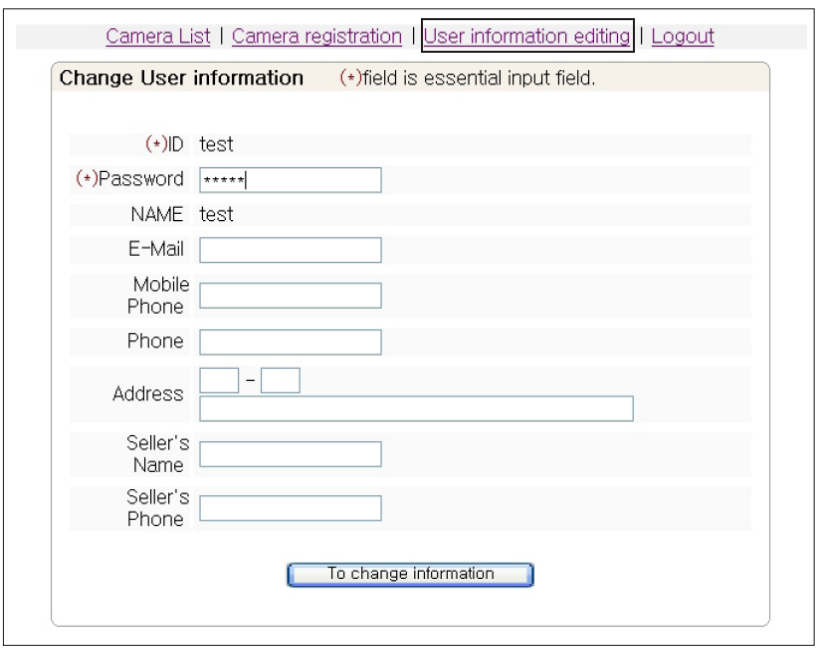
message "Upload" will be shown. If video and audio have been downloaded in "Download" of [Pic. 5–15], user can download and see the recorded file. There are differences on transmission time according to the network environment.(This function is not valid.)

(5) "Delete" of [Pic. 5–13] is to delete the camera from the list.

[Reference] · Downloaded video file can be played by supplied player, with the CMS.
· Audio is not available for this model.

5.2.4 Change of User's information

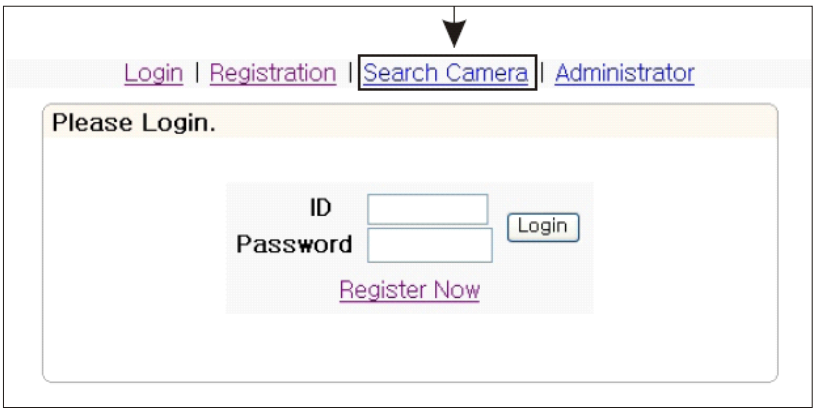
On clicking "User information editing" in upper menu of [Pic. 5–13], [Pic. 5–16] will appear the page to change user's information.



[Pic. 5–16] Change user's information

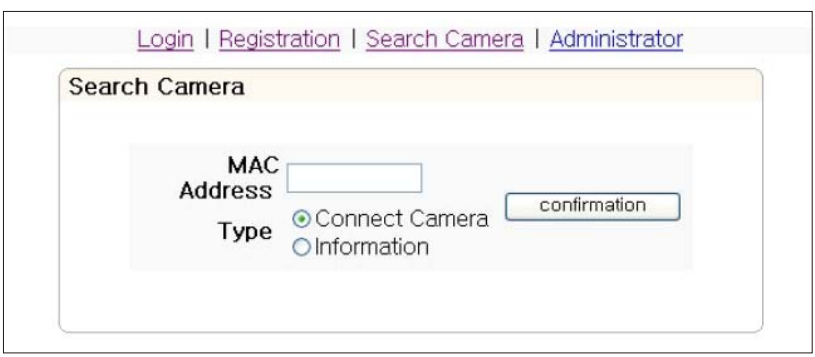
Save User's information by clicking "To change information" after changing user's information.

5.2.5 Search camera



[Pic. 5–17] Login page

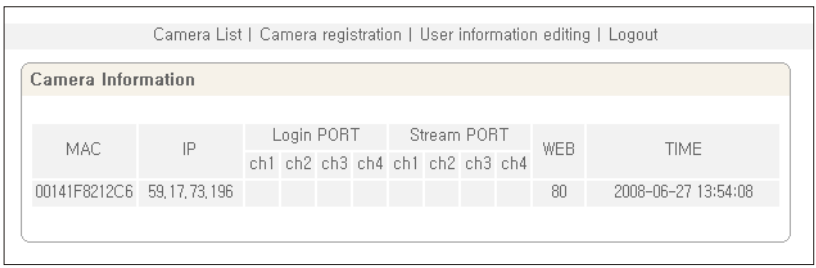
"Serarch Camera" of [Pic. 5–17] is the function to see information or connect directly to the camera without user registration in DDNS Server. Upon clicking "Serarch Camera", [Pic. 5–18] will appear.



[Pic. 5–18] Search camera

"Type" on [Pic. 5–18] is to select "Connect Camera" to connect directly to the camera using MAC Address, and then to input MAC Address and click "Confirmation", then the camera will be directly connected.

If user want to see information of the camera by MAC address, select "Information" and input MAC address of the camera to see information on, and click "Confirmation". Then information of the camera will be shown as [Pic. 5–18].



[Pic. 5–18] See information

Chapter 6.
Basic Network

Chapter 6. Basic Network

This chapter is the basic explanation for installation.

6.1 Allocate IP address

All hosts connected to internet have the exclusive number called IP address.

Communication among hosts is available by using it. There are two ways to allocate IP address. IP address is fixed by the way of static IP address whenever connected to internet. This way is easy to control network, but hard to use IP address effectively.

IP address is changeable by the way of dynamic IP address whenever connected to internet. This way is hard to control network, but easy to use IP address effectively.

In case of dynamic IP address, DHCP function should be supported by IP sharing device or server.

[Reference] Host means not only PC but PDA, mobile phone, and all devices using internet.

6.2 Public IP / Private IP

Public IP is the exclusive IP that you can connect anywhere internet is available. Private IP is the way for a private person to give IP address to host by IP sharing device or server. In this case, IP sharing device uses only one public IP. Private IP is allocated such as 192.168.xxx.xxx, and can not be used as public IP.

6.3 Leased line environment

Usually company, university, or research center uses leased line. They use many public IP address. In this environment, static IP and dynamic IP are all available.

Please check from network administrator which way is available(Refer to Check Network and Installation Type).

It can not be available by fire wall. In this case, ask network administrator if open port or not.

6.4 Broadband modem(ADSL, Cable, Fiber Optic modem) environment

Home, store, small office use one broadband modem(DSL, cable modem), and use one public IP address normally. In order to use several PC through one public IP address, the user in most cases use IP sharing device.

We recommend using an IP router(IP sharing device) for installation. There may be a case in no need of router, but most people use the unit and other PC 1set or more. When using the router, connect the router and input IP address of the unit(IP address of the unit is set as 192.168.1.8 on ex-factory) in DMZ menu.

If the user cannot use the DMZ function because there is no DMZ menu in the router or some other reasons, go into Port Forwarding or NAT menu on the router and map the port of the unit one by one.

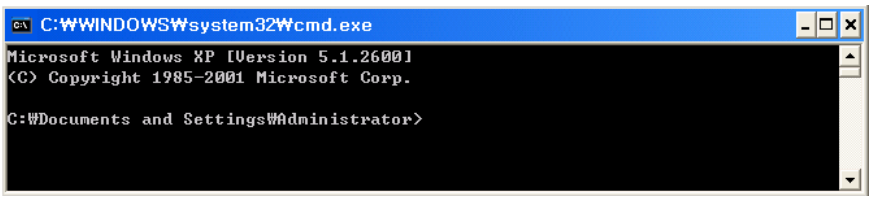
6.5 Ping test

Ping is the test to check response among the devices connected with network.

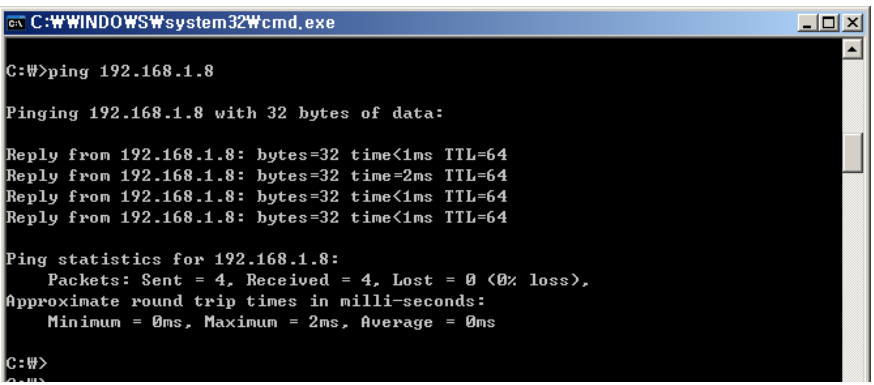
Input "Ping IP address" to command window of PC and check response.

In case of Ping failure, there is some communication problem between the devices.

By firewall, this test can not be available.

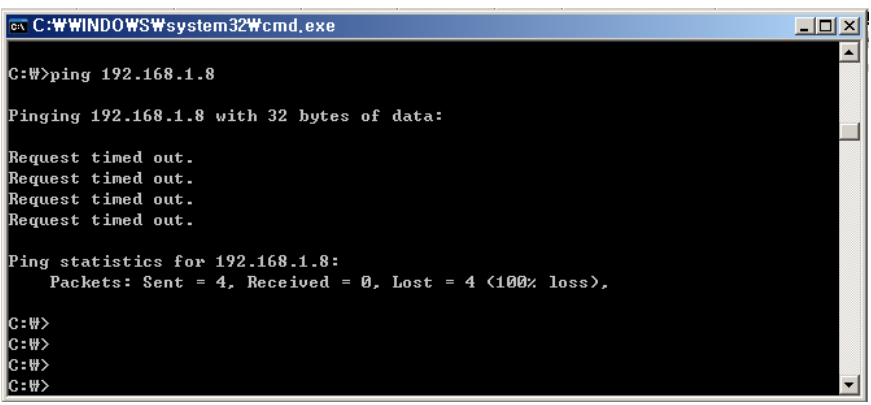


③–1



[Ping Success]

③–2



[Ping Failure]

Chapter 7.
Appendix

Chapter 7. Appendix

7.1 Basic setting table

Item	Default(Basic setting)	Remarks
Network		
Static IP / Dynamic IP	Static IP	
IP Server	Enable	
IP address	192.168.1.8	
Gateway	192.168.1.1	
Subnet Mask	255.255.255.0	
Web Connection Port	80	· Do not duplicate the same Port. · Use the number under 9999 of port.
Authentication Control Port Video Streaming Port	9000	
ID and password		
Administrator ID/Password	admin/admin	
User ID/Password	root/root, guest/guest	
Domain of Related Server		
IP Server	ipcctvlink.com	Domain of server to connect to register IP.
Alarm Server	ipcctvlink.com	Domain of server to connect to send. Event upon detection of sensor or motion.
Upgrade Server	ipcctvlink.com	Domain of server to connect to download upgraded program.
Plug-in Download Server	ipcctvlink.com	Active-x
Video setting		
Compressed Resolution	MPEG : VGA, MJPEG : QVGA	If the camera is not support QVGA, base value of JPEG is VGA.
Frame Rate	NTSC : VGA 30fps, QVGA 15fps PAL : VGA 25fps, QVGA 12.5fps	
Bit Rate	512kbps	
Other setting		
Time Zone	Asia/Seoul(Korea)	

[Reference] In case to reset hardware and network setting, ID and password of user and Administrator will be automatically returned to the above default value.

7.2 To solve problem

7.2.1 Booting

Check if power plug is connected correctly.

※Use 12V DC, 500mA regulated power supply.

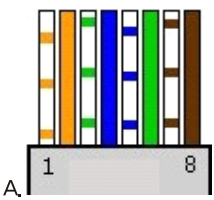
7.2.2 Network cable(LAN cable) and cable connection check

Check whether direct LAN Cable or cross cable according to use.

① Cable check

[Direct Cable]

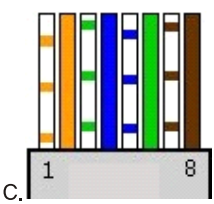
Hold each end of both side and check if same color's cable is connected to same location in RJ45 jack or not.(Connection with IP sharing device or cable modem)



A, B, C
[1] White and Orange
[2] Orange
[3] White and Green
[4] Blue
[5] White and Blue
[6] Green
[7] White and Brown

[Cross Cable]

Hold each end of both side and check whether 1, 2(Tx+, Tx–) and 3, 6(Rx+, Rx–) are cross or not.(Connection with PC)



D
[1] White and Green
[2] Green
[3] White and Orange
[4] Blue
[5] White and Blue
[6] Orange
[7] White and Brown

② Network Link check

After supplying power, check if Link LED twinkles or not when the camera connects with User PC(or HUB).

If Link LED doesn't twinkle, cable is not connected correctly.

7.3 Troubleshooting by type

7.3.1 Cannot connect with network

Check with "7.2.2 Network cable(LAN cable) and cable connection check". [PING Test]

① In case camera uses Static/Public IP : input "Ping IP address" to command window of PC and check response.

② In case camera uses dynamic/public IP : If user cannot find camera's IP address, reset hardware and connect PC with the camera through cross cable and ping test by entering "192.168.1.8".

③ In case camera uses private IP through IP sharing device : Do ping test of private IP address set for camera in PC that is connected in the local network through IP sharing device.

[Reference] Please refer to "PING Test of Basic Network".

If "ping test"get response, network setting for camera is done correctly.

Ping test is okay but there is no connection, check with "7.3.2 check port setting".

7.3.2 Check port setting

If user can't connect with camera even though "Ping test" is okay, please check port setting by the following steps.

The unit uses 3 ports as follow.

· Web Connection Port : Port 80 TCP

· Authentication, Control and video streaming port : Port 9000 TCP

① Not available to connect to web

If it is not available even to connect to web, check web connection port because web connection port may be set with other number is not "80".

Use IP Finder program.(Default value of web port is "80".)

[Reference] Web port "80" can not be available in some internet service.
In this case, go to the administrator's page and change the web port.

② Problem in video monitoring

In case there is problem in video monitoring even though there is no problem in web connection, check if "Authentication and Control Port" and "Video Streaming

Port" of the unit is set on IP sharing device(Refer to the manual of IP sharing device regarding Port forwarding).

[Reference] It is strongly recommended to register the number under 9999 of port.
Port Number more than "10,000" can not be available in some network.

Chapter 8. Troubleshooting

Problem	Solution
Nothing appears on the screen.	Check if the power cord and line connection between the camera and monitor are connected properly.
The image on the screen is dim	Check whether the window is stained. If dirty, clean the lens with soft and clean cloth.
The image on the screen flickers	Dose the camera face to the sun directly or fluorescent light? Change the camera position.
The contrast on the screen is too weak	Adjust the contrast feature of the monitor. If the camera is exposed under too strong light, change the camera position solution.

※If you can not solve the problem, please contact an authorized technician.

[Warranty Card]

PRODUCT NAME		NETWORK CAMERA		TERM OF THE GUARANTEE
MODEL NO.				
DATE OF PURCHASE				FOR ONE YEAR AFTER THE DATE OF PURCHASE
CUSTOMER	NAME		P/N	
	ADDRESS			
SELLER	NAME		P/N	
	ADDRESS			

The history of after-sales service		
YEAR	PROBLEM	PERSON IN CHARGE

※This product will be under warranty for one year after the date of purchase.

Please read this manual carefully before installing and using the camera.
Be sure to keep the manual handy for later reference.