1.3 Megapixel IP Camera

User Manual

Ver2.2
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1. Software Version

The IP Camera's current software version is as follows:

<table>
<thead>
<tr>
<th>Time Released</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct., 2008</td>
<td>d20081013NS</td>
</tr>
</tbody>
</table>
2. Overview

The IP Camera features a 1.3 Megapixel progressive scan image sensor that delivers unparalleled image quality. Utilizing progressive scan sensor, it produces images of rapid moving objects with minimum motion blurring. Dual streaming enables users to view both MJPEG images and MPEG-4 video to achieve superior image quality and conserve bandwidth. And with ultra high resolution, users can monitor critical areas with greater detail like never before.

2.1 Features

- 1/3” Sony Progressive scan CCD/CMOS sensor
- Dual streaming: MJPEG & MPEG-4
  - MJPEG up to 1280x960 @ 15 fps
  - MPEG-4 up to 640x480 @ 30 fps
- Day/Night function (ICR); Optional
- Power over Ethernet (802.3af)
- WDR (Wide Dynamic Range); Optional
- Motion Detection
- Digital slow shutter
- Varifocal lens 3.3~12mm
- Two-way audio support
- Up to 12x Digital Zoom
- Backlight Compensation
- Auto Exposure
- Flickerless mode
- 10/100 Ethernet with RJ-45 connector
- Low light sensitivity 0.2 lux @ F1.2
- Compact size and light weight
- Free bundled CMS software

*Features might be different from model selection.
2.2 Package Contents

The 1.3 Megapixel IP Camera's standard package contains the items as shown below. Contents will vary among different models. Please check the list as follows for details.

- C/CS Mount Lens Model (DC 12V, PoE)
  Package Contents: 1, 2, 3, 4, 5, 8, 9

- C/CS Mount Lens Model (AC 24V)
  Package Contents: 1, 3, 4, 6, 7, 8, 9

- Varifocal Lens Model (DC 12V, PoE)
  Package Contents: 1, 2, 5, 8, 9

- Varifocal Lens Model (AC 24V)
  Package Contents: 1, 6, 7, 8, 9
2.3 IP Surveillance System Architecture

The figure below illustrates the system architecture of the IP Camera. It is capable of MJPEG and MPEG-4 dual streaming for flexible application.
3. Introduction of IP Camera

This chapter will provide the camera dimensions for reference before installation. Definition of each connector on the camera’s rear board will also be specified.

3.1 Camera Dimensions

The IP Camera’s dimensions are shown as below.

**C/CS Mount Lens Model**

![C/CS Mount Lens Model Diagram]

**Varifocal Lens Model**

![Varifocal Lens Model Diagram]

3.2 Connectors on the Rear Board

The diagram below shows the IP Camera’s rear board. Definition for each connector will be given as follows.

**DC 12V/PoE Model**

![DC 12V/PoE Model Diagram]

**AC 24V Model**

![AC 24V Model Diagram]
Power LED
Green link light indicates good power connection.

Reset Button
Press and hold the button for 5 seconds, and then the camera will restart. After around 30 seconds, reconnect the camera by entering its default IP address: 192.168.0.250, in the URL bar.

DC 12V Connector
DC 12V power connection

AC 24V/DC 12V Connector (AC 24V Model)
Please refer to the table below for wiring of AC 24V and DC 12V camera with the supplied power cable.

<table>
<thead>
<tr>
<th></th>
<th>AC 24V: Power-1</th>
<th>DC 12V: Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC 24V: Earth GND</td>
<td>DC 12V: Reserved</td>
<td></td>
</tr>
<tr>
<td>AC 24V: Power-2</td>
<td>DC 12V: GND</td>
<td></td>
</tr>
</tbody>
</table>

Video/DC Switch
The switch is only functional when using an Auto Iris lens. Set the switch to “Video” if use a Video Drive lens, and set it to “DC” when using a DC Drive lens.

Auto Iris Lens Connector
For use with auto iris lens

I/O Terminal Connector
For alarm connection (see section 4.2: IP Camera Installation — Alarm Application)

Line Out & Line In / Mic In ports
For two-way audio transmission

Network (with PoE Option) Connector
RJ-45 connector for LAN connection
For the camera supporting Power over Ethernet (PoE), it can use the power from the RJ-45 cable connection.
Network LEDs
Green link light indicates good network connection.
Orange activity light flashes for network activity indication.

4. Preparations for IP Camera Setup
This chapter outlines information about system requirements for IP Camera operation, procedures of camera connection, and login to the camera.

4.1 System Requirements
To perform the IP Camera via web browser, please ensure your PC is in good network connection, and meet system requirement as described below.

<table>
<thead>
<tr>
<th>Items</th>
<th>Minimum Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Computer</td>
<td>1. Intel Pentium IV, 3 GHz or higher, Intel Core2 Duo, 2 GHz or higher</td>
</tr>
<tr>
<td></td>
<td>2. 1 GB RAM or more</td>
</tr>
<tr>
<td></td>
<td>3. AGP graphics card 64 MB RAM, Direct Draw</td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows VISTA or Windows XP</td>
</tr>
<tr>
<td>Web Browser</td>
<td>Microsoft Internet Explorer 6.0 or later</td>
</tr>
<tr>
<td>Network Card</td>
<td>10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation</td>
</tr>
<tr>
<td>Viewer</td>
<td>ActiveX control plug-in for Microsoft IE</td>
</tr>
</tbody>
</table>

4.2 Installation
Please follow the instructions below to complete IP Camera installation.

**Lens Mounting: C/CS Mount Lens Model**
If use C-Mount lens, after removing the camera’s plastic cover, users need to mount the supplied C/CS mount adapter (in the IP Camera package) to the camera. Then attach the lens onto the C/CS mount adapter, as the illustrations shown below.
Zoom/Focus Adjustment: Varifocal Lens Model
When using the varifocal lens camera, to adjust zoom/focus, please refer to the instructions as follows:

Step 1: Pull out the lens shield.

![Lens shield](image)

Step 2: Adjust zoom/focus.

![Zoom adjustment](image)

Step 3: Place the lens shield back.

Power Connection
Please refer to section 3.2 Connectors on the Rear Board for power wiring. Additionally, if using PoE, make sure Power Sourcing Equipment (PSE) is in use in the network.

Ethernet Cable Connection
Use of Category 5 Ethernet cable is recommended for network connection; to have best transmission quality, cable length shall not exceed 100 meters. Connect one end of the Ethernet cable to the RJ-45 connector of the IP Camera, and the other end of the cable to the network switch or PC.

⚠️ NOTE: In some cases, you may need use an Ethernet crossover cable when connecting the IP Camera directly to the PC.
Check the status of the link indicator and activity indicator LEDs; if the LEDs are unlit, please check LAN connection.

Green Link Light indicates good network connection. Orange Activity Light flashes for network activity indication.

**Alarm Application**
The camera equips one relay input and one relay output for alarm application. Refer to alarm pin definition below to connect alarm devices to the IP Camera if needed.

1. Output+
2. Output-
3. Input+
4. Input-

### 4.3 Accessing IP Camera
For initial access to the IP Camera, users can search the camera through the installer program: DeviceSearch.exe, which can be found in “DeviceSearch” folder in the supplied CD.

**Device Search Software Setup**
**Step 1:** Double click on the program Device Search.exe (see the icon below); its window will appear as shown below. Then click the “Device Search” button.
Step 2: The security alert window will pop up. Click “Unblock” to continue.

Device Search

Step 3: Click “Device Search” again, and all the finding IP devices will be listed in the page, as shown in the figure below. The IP Camera’s default IP address is: **192.168.0.250**.

Step 4: Double click or right click and select “Browse” to access the camera directly via web browser.
Step 5: Then the prompt window of request for entering default username and password (as shown below) will appear for login to the IP Camera.

The default login ID and password for the Administrator are:

<table>
<thead>
<tr>
<th>Login ID</th>
<th>Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin</td>
<td>1234</td>
</tr>
</tbody>
</table>

**NOTE:** ID and password are case sensitive.

**NOTE:** It is strongly advised that administrator’s password be altered for the security concerns. Refer to section 5.2.2 Security for further details.

Additionally, users can change the IP Camera’s network property, either DHCP or Static IP directly in the device finding list. Refer to the following section for changing the IP Camera’s network property.
**Example of Changing IP Camera’s Network Property**

Users can directly change an IP Camera’s network property, ex. from static IP to DHCP, in the finding device list. The way to change the IP Camera’s network property is specified below:

**Step 1:** In the finding device list, click on the IP Camera that you would like to change its network property. On the selected item, right click and select “Network Setup.” Meanwhile, record the IP Camera’s MAC address, for future identification.

![Image of Network Setup page with DHCP selected and Apply button highlighted]

**Step 2:** The “Network Setup” page will come out. Select “DHCP,” and press “Apply” button down the page.

![Image of Network Setup page with DHCP selected and Apply button highlighted]
Step 3: Click “OK” on the Note of setting change. Wait for one minute to re-search the IP Camera.

![Image of Note dialog box]

Step 4: Click the “Device Search” button to re-search all the devices. Then select the IP Camera with the correct MAC address. Double click on the IP Camera, and the login window will come out.

![Image of Device Search window]

Step 5: Enter User name and Password to access the IP Camera

**Installing DC Viewer Software Online**
For the initial access to the IP Camera, a client program, DC Viewer, will be automatically installed to your PC when connecting to the IP Camera.

If the Web browser doesn’t allow DC Viewer installation, please check the Internet security settings or ActiveX controls and plug-ins settings (see Appendix B: Internet Security Settings) to continue the process.
The Information Bar (just below the URL bar) may come out and ask for permission to install the ActiveX Control for displaying video in browser (see the figure below). Right click on the Information Bar and select “Install ActiveX Control…” to allow the installation.

Then the security warning window will pop up. Click “Install” to carry on software installation.

Click “Finish” to close the DC Viewer window when download is finished. For the detailed software download procedure, please refer to Appendix C: DC Viewer Download Procedure.

Once login to the IP Camera, users will see the Home page as shown below:
Administrator/User Privileges
“Administrator” represents the person who can configure the IP Camera and authorize users access to the camera; “User” refers to whoever has access to the camera with limited authority, i.e. entering Home and Camera setting pages.

Image and Focus Adjustment
The image displays on the Home page when successfully accessing to the IP Camera. Adjust zoom and focus as necessary to produce a clear image.
5. Configuration & Operation

The IP Camera is provided with a user-friendly browser-based configuration interface, and a free bundled CMS (Central Management System) for record and playback video. In this chapter, information about main page introduction, system related settings and camera settings will be described in detail.

For further information about CMS software, please refer to Chapter 6: CMS Software Introduction and CMS user manual.

5.1 Browser-based Viewer Introduction

The figure below shows the main page of the IP Camera user interface.

At the bottom of the main page, users can adjust video display size (x1, x1/2 and full screen), select a kind of video format (MPEG-4 and MJPEG), talk to the remote site (see 5.3.2 Security) and save MJPEG snapshots (see 5.3.9 Snapshot).
There are five tabs: Home, System, Streaming, Camera and Logout on the top panel.

**Home**
Users can monitor live video of the targeted area.

**System setting**
Administrator can set host name, system time, root password, network related settings, etc. Further details will be interpreted in section 5.3 System Related Settings.

**Streaming setting**
Administrator can modify video resolution and rotate type and select audio compression mode in this page.

**Camera setting**
Users can adjust various camera parameters, including <Exposure>, <White Balance>, <Brightness>, <Sharpness>, <Contrast> and <Digital Zoom>.

**Logout**
Click on the tab to rellogin the IP Dome Camera with another username and password.
5.2 Home Page

In the Home page, there are several function buttons right down the displayed image.

Screen Size Adjustment
Image display size can be adjusted to x1/2 and full screen.

Digital Zoom Control
In the full screen mode, users can implement digital PTZ by right clicking the mouse, rotating the mouse wheel (for zoom in/out), and drag the mouse into any direction.

Talk
Talk function allows the local site talks to the remote site. Please refer to section 5.3.2 Security: Add user > Talk/Listen for further details. This function is only open to “User” who has been granted this privilege by the Administrator.

Snapshot
Press the button, and the MJPEG snapshots will automatically be saved in the appointed place. The default place of saving snapshots is: C:\.
5.3 System Related Settings

The figure below shows all categories under the “System” tab. Each category in the left column will be explained in the following sections.

**NOTE:** The “System” configuration page is only accessible by Administrator.
5.3.1 Host Name and System Time Setting

Press the first category: <System> in the left column; the page is shown as below.

**Host Name**

The name is for camera identification. If alarm function (see 5.3.7 Application) is enabled and is set to send alarm message by Mail/FTP, the host name entered here will display in the alarm message.

**Sync With Computer Time**

Select the item, and video date and time display will synchronize with the PC’s.

**Manual**

The Administrator can set video date, time and day manually. Entry format should be identical with that shown next to the enter field.
5.3.2 Security

Click the category: <Security>, and the page is shown as the figure below.

**Root password**
Change the administrator’s password by inputting the new password in both text boxes. The input characters/numbers will be displayed as dots for security purposes. After clicking <Save>, the web browser will ask the Administrator for the new password for access. The maximum length of the password is 14 digits.

⚠️ **NOTE:** The following characters are valid: A-Z, a-z, 0-9, !#$%&’-.@^_~.

**Add user**
Type the new user's name and password and click <Add> to add the new user. Both user name and password can be up to 16 characters. The new user will be displayed in the user name list. There is a maximum of twenty user accounts. Each user can be assigned the privileges of “Camera control”, “Talk” and “Listen”.
• I/O access
  This item supports fundamental functions that enable users to view video when accessing to the camera.

• Camera control
  This item allows the appointed User to change camera parameters on the Camera Setting page.

• Talk/Listen
  Talk and Listen functions allow the appointed user in the local site (PC site) communicating with, for instance, the administrator in the remote site.

  **NOTE:** The IP Mini Fixed Dome Camera does not have Talk function.

**Manage User**

Delete user
To delete a user, pull down the user list, and select the user name you wish to delete. Then click <Delete> to remove it.

Edit user
Pull down the user list and select a user name. Click <Edit> to edit the user’s password and privilege.

  **NOTE:** It is required to enter the User password as well as select the function open to the user. When finished, click <Save> to modify the account authority.
5.3.3 Network

Click <Network> in the left column, and the page will display as shown below.

Users can choose to use fixed IP address or dynamic (DHCP) IP address. The following is descriptions for the two ways of setting IP address.
**Get IP address automatically (DHCP)**

The camera’s default setting is “**Use fixed IP address**”. Please refer to the previous section 4.3 Accessing IP Camera for login with the default IP address.

If select “**Get IP address automatically**”, after the IP Camera restarts, users can search it through the installer program: DeviceSearch.exe, which can be found in “DeviceSearch” folder in the supplied CD.

⚠️ **NOTE:** Please make the record of the IP Camera’s MAC address, which can be found in the label of the camera, for identification in the future.

**Use fixed IP address**

To setup static IP address, select “**Use fixed IP address**” and move the cursor to the IP address blank (as indicated below) and insert the new IP address, ex. 192.168.7.234; then go to the Default gateway (explained latter) blank and change the setting, ex. 192.168.7.254. Press “Save” to confirm the new setting.

![Megapixel Network Configuration](image)

When using static IP address to login to the IP Camera, users can access it either through “DeviceSearch” software (see 4.3 Accessing IP Camera) or input the IP address in the URL bar and press “Enter”.
General

- **IP address**
  This is necessary for network identification.

- **Subnet mask**
  It is used to determine if the destination is in the same subnet. The default value is “255.255.255.0”.

- **Default gateway**
  This is the gateway used to forward frames to destinations in different subnet. Invalid gateway setting will fail the transmission to destinations in different subnet.

- **Primary DNS**
  Primary DNS is the primary domain name server that translates hostnames into IP addresses.

- **Secondary DNS**
  Secondary DNS is a secondary domain name server that backups the primary DNS.

- **Web Server port**
  Web server port could be set from 1 to 65535.

Advanced

- **RTSP port**
  RTSP port could be set from 1 to 65535. (Normal Setting Port: 554, 1024 ~65535)

⚠️ **NOTE:** Be aware to choose the different port from the one set for the web server port.
5.3.4 DDNS

Dynamic Domain Name System (DDNS) allows a DNS name to be constantly synchronized with a dynamic IP address. In other words, it allows those using a dynamic IP address to be associated to a static domain name so others can connect to it by name.

Enable DDNS
Check the item to enable DDNS.

Provider
Select one DDNS host from the provider list.

Host name
Enter the registered domain name in the field.

Username/E-mail
Enter the username or e-mail required by the DDNS provider for authentication.
Password/Key
Enter the password or key required by the DDNS provider for authentication.

5.3.5 Mail

The Administrator can send an e-mail via Simple Mail Transfer Protocol (SMTP) when an alarm is triggered. SMTP is a protocol for sending e-mail messages between servers. SMTP is a relatively simple, text-based protocol, where one or more recipients of a message are specified and the message text is transferred. The configuration page is shown as follows:

Two sets of SMTP can be configured. Each set includes SMTP Server, Account Name, Password and E-mail Address settings. For SMTP server, contact your network service provider for more specific information.
5.3.6 FTP

The Administrator can set as sending alarm message to a specific File Transfer Protocol (FTP) site when an alarm is triggered. Users can assign alarm message to up to two FTP sites. The FTP setting page is shown below. Enter the FTP details, which include server, server port, user name, password and remote folder, in the fields. Press “Save” when finished.

5.3.7 Application (Alarm Settings)

The IP Camera equips one relay input and one relay output for cooperating with alarm system to catch events’ images. Refer to alarm pin definition below to connect alarm devices to the IP Camera if needed. The alarm configuration page is also shown below.
**Alarm Pin Definition**

1. Output+
2. Output-
3. Input+
4. Input-

**Alarm Switch**
The Administrator can enable or disable the alarm function.

**Alarm Type**
Select an alarm type, “Normal close” or “Normal open,” that corresponds with the alarm application.

**Alarm Output**
Define alarm output signal “high” or “low” as the normal alarm output status according to the current alarm application.

**Action (Multi-option)**
The Administrator can specify alarm actions that will take when the alarm is triggered. All options are listed as follows:
- **Enable Alarm Output**
  Select the item to enable alarm relay output.

- **Send Alarm Message by FTP/E-Mail**
  The Administrator can select whether to send an alarm message by FTP and/or E-Mail when an alarm is triggered.

- **Upload Image by FTP**
  Select this item, and the Administrator can assign a FTP site and configure various parameters as shown in the figure below. When the alarm is triggered, event images will be uploaded to the appointed FTP site.

- **Upload Image by E-Mail**
  Select this item, and the Administrator can assign an e-mail address and configure various parameters as shown in the figure below. When the alarm is triggered, event images will be sent to the appointed e-mail address.
NOTE: Make sure SMTP or FTP configuration has been completed. See section 5.3.5 Mail and 5.3.6 FTP for further details.

File Name
Enter a file name in the blank, ex. image.jpg. The uploaded image’s file name format can be set in this section. Please select the one that meets your requirements.

- **Add date/time suffix**
  File name: imageYYMMDD_HHNNSS_XX.jpg
  Y: Year, M: Month, D: Day
  H: Hour, N: Minute, S: Second
  X: Sequence Number

- **Add sequence number suffix (no maximum value)**
  File name: imageXXXXXXXX.jpg
  X: Sequence Number

- **Add sequence number suffix (limited value)**
  File Name: imageXX.jpg
  X: Sequence Number
The file name suffix will end at the number being set. For example, if the setting is up to “10,” the file name will start from 00, end at 10, and then start all over again.

- **Overwrite**
The original image in the FTP site will be overwritten by the new uploaded file with a static filename.

**Save**
After complete all the settings mentions above, please click on the Save button to save all the settings in this page.
5.3.8 Motion Detection

Motion Detection function allows detecting suspicious motion and triggering alarms when motion volume in the detected area reaches/exceeds the determined sensitivity threshold value.

In the Motion Detection setting page, there is a red frame right on the displayed image and a motion indication window on the top of the image; see the figure shown above. The red frame is for defining the motion detection area. To change the size of the area, move the mouse cursor to the edge of the red frame and draw it outward/inward. Move the mouse to the center of the red frame can shift the frame to the intended location. As for the motion indication window, when motion is detected, signals will be shown in it.

Detailed settings of Motion Detection are described as follows:

**Active Motion Detection**

You will be able to turn on/off Motion Detection in System section. Default setting is Off.
**Motion Detection Setting**

Users could adjust various parameters of Motion Detection in this section.

- **Sampling pixel interval [1-100]:**  
  The default value is 10, which means system will take one sampling pixel for every 10 pixel.

- **Detection level [1-100]:**  
  The default level is 10. The item is to set detection level for each sampling pixel; the smaller the value, the more sensitive it is.

- **Sensitivity level [1-100]:**  
  The default level is 80, which means if 20% or more sampling pixels are detected differently, system will detect motion. The bigger the value, the more sensitive it is. Meanwhile, when the value is bigger, the red horizontal line in the motion indication window will be lower accordingly.

- **Time interval (sec) [0-7200]:**  
  The default interval is 10. The value is the interval between each detected motion.

**Action (Multi-option)**

The Administrator can specify alarm actions that will take when motion is detected. All options are listed as follows:

- **Enable Alarm Output**  
  Select the item to enable alarm relay output.

- **Send Alarm Message by FTP/E-Mail**  
  The Administrator can select whether to send an alarm message by FTP and/or E-Mail when motion is detected.

- **Upload Image by FTP**  
  Select this item, and the Administrator can assign a FTP site and configure various parameters as shown in the figure below. When motion is detected, event images will be uploaded to the appointed FTP site.
**Upload Image by E-Mail**

Select this item, and the Administrator can assign an e-mail address and configure various parameters as shown in the figure below. When motion is detected, event images will be sent to the appointed e-mail address.
NOTE: Make sure SMTP or FTP configuration has been completed. See section 5.3.5 Mail and 5.3.6 FTP for further details.

File Name
The uploaded image’s filename format can be set in this section. Please select the one that meets your requirements.

Save
Click the Save button to save all the Motion Detection settings mentioned above.

The figure below shows how it is displayed when motion is detected.
## Motion Detection

### Active Motion Detection
- **Off**
- **On**

### Motion Detection Setting
- **Sampling pixel interval [1-100]**: 10
- **Detection level [1-100]**: 10
- **Sensitivity level [1-100]**: 80
- **Time interval (sec) [0-7200]**: 10

### Action
- **Enable Alarm Output**
- **Send alarm message by FTP**
- **Send alarm message by E-mail**
- **Upload Image by FTP**

### File Name:
- **Image Name**: image.jpg

### Add date/time suffix
- **Add sequence number suffix**
- **Add sequence number suffix up to 0** and then start over

**Save**
5.3.9 Snapshot

The IP Dome Camera supports MJPEG snapshot function. Users can specify a storage location for the snapshots. The default setting is: C:\. Once confirm the setting, press “Save,” and all the snapshots will be saved in the designate location.

NOTE: If the specified file folder is indicated as invalid, please check its name and ensure it not containing characters such as spaces.
5.3.10 Iris Adjustment

Users could adjust auto iris lens when different lens is selected to install on the camera. The iris adjustment page is shown below.

Please follow the steps below to adjust iris.

**Step 1:** Check if the auto iris lens is set up ready.

**Step 2:** Image a gray scale chart type 1 (Gamma = 1) over the entire screen.

**Step 3:** Press “Start” button and began to adjust iris.
5.3.11 View Log File

Click on the link to view the system log file. The content of the file provides useful information about configuration and connections after system boot-up.
5.3.12 View User Information

The Administrator can view each added user’s login information and privileges (see 5.3.2 Security).

**View User Login Information**

All the users in the network will be listed in the “User information” zone, as shown below. As the figure below shows:

**User: 4321**

It indicates that one user’s login username is: User, and password is: 4321.

**View User Privilege**

Press “get user privacy” down the page, and the Administrator can view each user’s privileges.
As the figure above shows:

**User: 1:1:0:1**

1:1:0:1 = I/O access : Camera control : Talk : Listen (see 5.3.2 Security)

- [ ] I/O access
- [x] Camera control
- [ ] Talk
- [x] Listen

Therefore, it denotes the user is granted privileges of I/O access, Camera control and Listen.
5.3.13 **View Parameters**

Click on this item to view the entire system’s parameter setting.
5.3.14 Factory Default

The factory default setting page is shown as below. Follow the instructions to reset the IP camera to factory default setting if needed.

Set Default
Click on the “Set Default” button to recall the factory default settings. Then the system will restart in 30 seconds.

⚠️ NOTE: The IP address will be restored to default.

Reboot
Click on the “Reboot” button, and the system will restart without changing current settings.
5.3.15 **Software Version**

The current software version is displayed in the software version page, which is shown as the figure below.

![Software Version Page](image-url)

- The camera firmware version is **CCD-cameraFw-1R-080108**
- The software version is **d20001013NS**
5.3.16 Software Upgrade

Software upgrade can be carried out in the “Software Upgrade” page, as shown below.

NOTE: Make sure the upgrade software file is available before carrying out software upgrade.

The procedure of software upgrade is like the following:

**Step 1:** Click “Browse” and select the binary file to be uploaded, ex. Userland.jffs2.
NOTE: Do not change the upgrade file name, or the system will fail to find the file.

Step 2: Pull down the upgrade binary file list and select the file you want to upgrade; in this case, select “userland.jffs2.”

Step 3: Press “Upgrade”. The system will first check whether the upgrade file exists or not, and then begin to upload the upgrade file. Subsequently, the upgrade status bar will display on the page. When it runs to 100%, the upgrade process is finished.
After the upgrade process is finished, the viewer will return to Home page, and operation can continue.

5.4 **Video and Audio Streaming Settings**

Press the tab "Streaming" in the top of the page, and the configurable video and audio items will display in the left column. In Streaming, the Administrator can configure specific video resolution, video compression mode, video protocol, audio transmission mode, etc. Further details of these settings will be specified in the following sections.
5.4.1 Video Resolution and Rotate Type

The video setting page is shown below:

**Video Resolution**

The IP Camera provides various video dual streaming formats like the following:

- MJPEG 1280x960 (15fps) + MPEG-4 VGA (15fps)
- MJPEG 1280x960 (15fps) + MPEG-4 QVGA (15fps)
- MJPEG 1280x960 (15fps) + MPEG-4 CIF (15fps)
- MJPEG 1280x960 (15fps) + MPEG-4 QCIF (15fps)
- MJPEG 1280x960 (15fps) + MPEG-4 Disable
- MJPEG 640x480 (30fps) + MPEG-4 VGA (30fps)
- MJPEG 640x480 (15fps) + MPEG-4 VGA (15fps)

Click “Save” to confirm the setting.

**Video Rotate Type**

Users can change video display type if necessary. Selectable video rotate types include Normal, Flip, Mirror and 180 degree. Differences among these types are illustrated as below.
Suppose the displayed image of IP camera is shown as the figure below.

To rotate the image, users can select “Flip”, for instance. Then the displayed image will be reversed as shown below.

The following is descriptions for different video rotate type.

- **Flip**
  If select <Flip>, the image will be rotated vertically.

- **Mirror**
  If select <Mirror>, the image will be rotated horizontally.

- **180 Degree**
  Selecting <180 Degree> will make the image 180° counter-/clockwise inverted.

Click “Save” to confirm the setting.
5.4.2 Video Compression

Users can select a proper MJPEG/MPEG-4 compression mode in the video compression page (see the figure below), depending on the application.

MJPEG compression settings include:
- high compression, low bitrate, low quality
- middle compression, default
- low compression, high bitrate, high quality

MPEG-4 compression settings include:
- 128 kbps, highest compression, lowest quality
- 256 kbps, default
- 512 kbps
- 1024 kbps, lowest compression, highest quality

Users can also decide whether to display compression information in Home page.

Click “Save” to confirm the setting.
5.4.3 **Video OCX Protocol**

In the Video OCX protocol setting page, users can select RTP protocol using UDP or TCP transport, for streaming media over the network. In the case of multicast networking, users can select the Multicast mode. The page is shown as follows.

Video OCX protocol setting options include:

- **RTP over UDP/RTSP(TCP)**
  Select a mode according to your data delivery requirements.

- **Multicast Mode**
  Enter all required data, including multicast IP address, MPEG-4 video port, MJPEG video port and audio port, into each blank.

Click “Save” to confirm the setting.
5.4.4 Video Frame Skip

Video frame skipping is for saving bandwidth, if necessary. The setting page is shown below.

MJPEG/MPEG-4 Frame Skip options include:
- No skipping, default
- Frame skipping at 5 frame internal (lowest frame loss rate)
- Frame skipping at 10 frame internal
- Frame skipping at 15 frame internal (highest frame loss rate)

**NOTE:** Higher frame skipping rate will decrease video smoothness.
5.4.5 Privacy Masking Function

Users can setup maximum two privacy masks in the selected areas to avoid any intrusive monitoring. The Mask setting page is shown below:

**Mask Setup**
Select either Mask1 or Mask2 in the section: **Active Mask Function**, and a red frame will come out in the displayed image. To shift the red frame (mask) to a desired position, move the mouse to the center of the frame and then left click the mouse. As for adjusting the frame size, move the mouse onto the edges of the frame to change its extent.

The mask(s) can be set with a selected color and type in the section: **Mask Setting**. After configure all the settings mentioned previously, click the “Save” button, and the mask(s) will be displayed as user-defined.

**Mask Settings Modification**
To reposition/resize a mask, draw its red frame to the new position or adjust the frame’s size. The mask’s color and type can be reselected as well. Click the “Save” button, and the rearranged mask will be displayed after few seconds.
**Mask Cancel**
Uncheck either Mask1 or Mask2 or both to cancel the mask(s).

**Help Page**
A Mask Description page is provided for your reference during privacy mask setup. Click on the question mark in the upper left corner above the displayed image (see the arrow in the figure above), and the Mask Description page will open in a new window, as shown below:

### Mask Description

**Limitation:**
- Privacy mask(s) is available under MJPEG with **1280 x 960 Resolution** only when MPEG-4 streaming is disabled.
- Privacy mask(s) supports all MPEG4 resolutions.
- Privacy mask(s) supports dual video streaming when the resolutions of both MJPEG and MPEG-4 are set at VGA.

<table>
<thead>
<tr>
<th>Video Resolution</th>
<th>Mask Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>MJPEG 1280x960 (15fps) + MPEG-4 VGA (15fps)</td>
<td>Only support mask in MPEG-4</td>
</tr>
<tr>
<td>MJPEG 1280x960 (15fps) + MPEG-4 QVGA (15fps)</td>
<td>Only support mask in MPEG-4</td>
</tr>
<tr>
<td>MJPEG 1280x960 (15fps) + MPEG-4 CIF (15fps)</td>
<td>Only support mask in MPEG-4</td>
</tr>
<tr>
<td>MJPEG 1280x960 (15fps) + MPEG-4 QCIF (15fps)</td>
<td>Only support mask in MPEG-4</td>
</tr>
<tr>
<td>MJPEG 1280x960 (15fps) + MPEG-4 Disable</td>
<td>Only support mask in MJPEG</td>
</tr>
<tr>
<td>MJPEG 640x480 (30fps) + MPEG-4 VGA (30fps)</td>
<td>Support mask in MJPEG and MPEG-4</td>
</tr>
<tr>
<td>MJPEG 640x480 (15fps) + MPEG-4 VGA (15fps)</td>
<td>Support mask in MJPEG and MPEG-4</td>
</tr>
</tbody>
</table>

- The measure of each privacy mask (Width x Height) should be less than 1/4 of screen area.

### Operation:

a. Maximum number of privacy mask is Two.

b. Total eight different colors could be selected to show on masked area(s), include Black, White, Yellow, Red, Green, Blue, Cyan, and Magenta.

c. The privacy mask can be setup as Solid or Transparency.

d. While changing video stream resolution, the size of existed privacy mask will have slight change. Users are recommended to setup privacy mask after video stream resolution has been setup.
5.4.6 Audio Mode and Bit Rate Settings

The audio setting page is shown below. In the Audio page, the Administrator can select one transmission mode and audio bit rate.

**Transmission Mode**

- **Full-duplex (Talk and Listen simultaneously)**
  
  In the Full-duplex mode, the local and remote sites can communicate with each other simultaneously, i.e. both sites can speak and be heard at the same time.

- **Half-duplex (Talk or Listen, not at the same time)**
  
  In the Half-duplex mode, the local/remote site can only talk or listen to the other site at a time.

- **Simplex (Talk only)**
  
  In the Talk only Simplex mode, the local/remote site can only talk to the other site.
- **Simplex (Listen only)**
  In the Listen only Simplex mode, the local/remote site can only listen to the other site.

- **Disable**
  Select the item to turn off the audio transmission function.

**Bit Rate**
Selectable audio transmission bit rate include 16 kbps (G.726), 24 kbps (G.726), 32 kbps (G.726), 40 kbps (G.726), uLaw (G.711) and ALAW (G.711). Both uLaw and ALAW signify 64 kbps but in different compression formats. Higher bit rate will let higher audio quality and require bigger bandwidth.

Click “Save” to confirm the setting.

### 5.5 Camera Settings

The figure below is the Camera configuration page. Details of each parameter setting are described as follows.
5.5.1 Exposure Setting

The Exposure pull-down menu is shown as follows:

The exposure is the amount of light received by the image sensor and is determined by the width of lens diaphragm opening (iris adjustment), the amount of exposure by the sensor (shutter speed) and other exposure parameters. With this item, users can define how the Auto Exposure function works.

Each exposure mode is specified as follows:

**Full Auto Mode**
In this mode, the camera’s Shutter Speed, IRIS and AGC (Auto Gain Control) control circuits work together automatically to get consistent video output level.

**Auto Flickerless (50Hz)/(60Hz) Mode**
Television scanning (PAL & NTSC) and power supply systems (AC 50 & 60 Hz) are not the same in different countries and regions. Users might find flickering situation displayed on the screens because the devices are working under different frequency systems. With Auto Flickerless function, users could reduce the symptom.

**Manual Mode**
In this mode, users can select a number between 1 and 15, which represents shutter speed ranging from 1/4 to 1/10000 sec; bigger number means slower shutter. Once change the setting, press <SET> to confirm the new setting.

**Fixed Shutter Mode**
In this mode, fixed shutter speed could be selected from the draw-down menu. The range is provided from 1.5 to 1/10000 sec. and total 17 different shutter
speed could be chose. Users could select suitable shutter speed based on the camera environment.

5.5.2 White Balance Setting

The White Balance pull-down menu is shown as follows:

A camera needs to find reference color temperature, which is a way of measuring the quality of a light source, for calculating all the other colors. The unit for measuring this ratio is in degree Kelvin (K). Users can select one of the White Balance Control modes according to the operating environment. The following table shows the color temperature of some light sources for reference.

<table>
<thead>
<tr>
<th>Light Sources</th>
<th>Color Temperature in K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloudy Sky</td>
<td>6,000 to 8,000</td>
</tr>
<tr>
<td>Noon Sun and Clear Sky</td>
<td>6,500</td>
</tr>
<tr>
<td>Household Lighting</td>
<td>2,500 to 3,000</td>
</tr>
<tr>
<td>75-watt Bulb</td>
<td>2,820</td>
</tr>
<tr>
<td>Candle Flame</td>
<td>1,200 to 1,500</td>
</tr>
</tbody>
</table>

**Auto Mode**

In this mode, white balance works within its color temperature range and calculates the best-fit white balance.

**Indoor/outdoor Mode**

Select for indoor or outdoor mode.

**Manual Mode**

In this mode, users can change the White Balance value manually. Users can select a number between 1 ~ 11, and press <SET> to confirm the new setting.
5.5.3 **Backlight Setting**

Based on various lighting situations, users could select to turn on or off the function of backlight compensation to optimize the video quality. The default value of Backlight is Off.

5.5.4 **Brightness Setting**

Users can adjust the image’s brightness by adjusting the item. To increase video brightness, select a bigger number. Press <SET> to confirm the new setting.

5.5.5 **Sharpness Setting**

Increasing the sharpness level can make the image looked sharper; especially enhance the object’s edge. Press <SET> to confirm the new setting.

5.5.6 **Contrast Setting**

Camera image contrast level is adjustable; please select ranging from 1 to 11.
5.5.7 Digital Zoom Setting

The camera’s digital zoom is adjustable from x1 to x12 at VGA resolution. Press <SET> to confirm the new setting.

5.5.8 IR Function (Optional)

With the IR function, the camera can still catch clear image at night time or in low light conditions. Users can set IR function to Auto, On or Off mode. The default setting is Auto. Press <SET> to confirm the new setting.

5.5.9 WDR Function (Optional)

The Wide Dynamic Range (WDR) function is for solving high contrast or changing light issues so that enhances better video display. Press <SET> to confirm the new setting.
5.6 Logout

Press the tab “Logout” in the top of the page, and the login window will pop up. This enables login with another user name.
6. **CMS Software Introduction**

The IP camera bundles Central Management System (CMS) software. Offering powerful functionalities via intuitive interface, it is a centralized monitoring solution of your video surveillance equipments.

It gives the user access to monitor multiple IP cameras and Digital Video Recorders (DVRs), and allows the user to simultaneously monitor 64 sites per group (up to 10 groups) within several clicks.

For further information on CMS software, please refer to the supplied CD.
## Appendix A: Technical Specifications

### C/CS Mount Lens Model

<table>
<thead>
<tr>
<th>Camera</th>
<th>1/3&quot; Sony Progressive CCD</th>
<th>1/3.8&quot; Sony Progressive CMOS</th>
<th>1/4&quot; Sony Progressive CCD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Image Sensor</strong></td>
<td>1280(H) x 960(V)</td>
<td>1280(H) x 960(V)</td>
<td>659(H) x 494(V)</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>&gt;700 TVL</td>
<td>&gt;700 TVL</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Minimum Illumination</strong></td>
<td>0.02ux @ F 1.2 (Color)</td>
<td>0.06ux @ F 1.2 (Color)</td>
<td>0.02 lux @ F 1.2 (Color)</td>
</tr>
<tr>
<td></td>
<td>0.001 lux @ F1.2 (B/W)</td>
<td>0.005 lux @ F1.2 (B/W)</td>
<td>0.001 lux @ F1.2 (B/W)</td>
</tr>
<tr>
<td><strong>Shutter Speed</strong></td>
<td>1.5~ 1/10000 sec.</td>
<td>1.5~1/15000 sec.</td>
<td>1/1.5 ~ 1/10000 sec.</td>
</tr>
<tr>
<td><strong>White Balance</strong></td>
<td>Manual / ATW (1500 ~ 15000K)</td>
<td>Manual / ATW (1500 ~ 15000K)</td>
<td>Manual / ATW (1500 ~ 15000K)</td>
</tr>
</tbody>
</table>

### Lens

| C/CS mount Lens | Video drive & DC drive (switchable) |

### Operation

<table>
<thead>
<tr>
<th>Video Compression</th>
<th>MPEG-4 / MJPEG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Video Streaming</strong></td>
<td>Simultaneous MPEG-4 and MJPEG video stream (dual stream)</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>MPEG-4: VGA, QVGA, CIF, QCIF</td>
</tr>
<tr>
<td></td>
<td>MJPEG: 1280x960(4 VGA), VGA</td>
</tr>
<tr>
<td><strong>Frame Rate</strong></td>
<td>MPEG-4 30fps@VGA, MJPEG 15fps@1280x960</td>
</tr>
<tr>
<td></td>
<td>MPEG-4 30fps@VGA, MJPEG 30fps@VGA</td>
</tr>
</tbody>
</table>

### Image Setting

| Brightness | Manual |
| Exposure | Auto / Manual |
| Sharpness | Manual |
| Contrast | Manual |
| **White Balance** | Auto / Manual / Indoor / Outdoor |
| **Digital Zoom** | 1x ~ 12x |
| **Rotation** | Flip, Mirror, and 180° Rotate |

### Audio

| Two-way Audio | Line out, Line in/Mic in |
| Compression | G.711 / G.726 |

### Alarm

| Input | 5V 10kΩ pull up |
| Output | Photo relay output 300VDC/AC |

### Network

<p>| Interface | 10/100 Ethernet (RJ-45) |
| Protocol | TCP/IP, UDP, RTP, RTSP, HTTP, ICMP, FTP, SMTP, DHCP and IGMP |
| Password Levels | User and Administrator |
| Internet Browser | Internet Explorer (6.0+) |</p>
<table>
<thead>
<tr>
<th>Mechanical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lens Mounting</td>
<td>C/CS mount / Varifocal board mount</td>
</tr>
<tr>
<td>Connectors</td>
<td></td>
</tr>
<tr>
<td>Power DC Jack</td>
<td></td>
</tr>
<tr>
<td>Ethernet RJ-45</td>
<td></td>
</tr>
<tr>
<td>Audio Stereo phone jack, ø 3.5mm</td>
<td></td>
</tr>
<tr>
<td>Alarm 4 pins terminal block, pitch 3.5mm</td>
<td></td>
</tr>
<tr>
<td>Auto Iris Video drive &amp; DC drive</td>
<td></td>
</tr>
<tr>
<td>LED Indicator</td>
<td>Power, Link, ACT</td>
</tr>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0°C ~ 50°C</td>
</tr>
<tr>
<td>Humidity: 10% to 90%, no condensation</td>
<td></td>
</tr>
<tr>
<td>Power Source</td>
<td>DC12V/PoE/AC24V</td>
</tr>
<tr>
<td>Power Consumption</td>
<td></td>
</tr>
<tr>
<td>4.2W (max. 350mA@DC12V)</td>
<td>3W (max. 250mA@DC12V)</td>
</tr>
<tr>
<td>Certificate</td>
<td>CE, FCC, RoHS compliant</td>
</tr>
<tr>
<td>Dimension</td>
<td>125 x 70 x 52 mm (L x W x H) (w/o lens)</td>
</tr>
<tr>
<td>Weight</td>
<td>250 g (0.55 lb)</td>
</tr>
</tbody>
</table>
## Varifocal Lens Model

<table>
<thead>
<tr>
<th>Camera</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Sensor</td>
<td>1/3&quot; Sony Progressive CCD</td>
<td>1/3.8&quot; Sony Progressive CMOS</td>
</tr>
<tr>
<td>Picture Elements</td>
<td>1280(H) x 960 (V)</td>
<td>1280(H) x 960 (V)</td>
</tr>
<tr>
<td>Resolution</td>
<td>&gt;700 TVL</td>
<td>&gt;700 TVL</td>
</tr>
<tr>
<td>Minimum Illumination</td>
<td>0.2 lux @ F1.2</td>
<td>0.6 lux @ F1.2</td>
</tr>
<tr>
<td>Shutter Speed</td>
<td>1.5~ 1/10000 sec.</td>
<td>1.5~1/15000 sec.</td>
</tr>
<tr>
<td>White Balance</td>
<td>Manual / ATW (1500 ~ 15000K)</td>
<td></td>
</tr>
</tbody>
</table>

### Lens

<table>
<thead>
<tr>
<th>Varifocal Lens</th>
<th>Max Aperture</th>
<th>Lens Focal Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide F1.4, Tele F2.9</td>
<td>F= 3.3 ~ 12 mm</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Angle of View</th>
<th>Diagonal</th>
<th>Horizontal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide end</td>
<td>125.7° / 89.8°</td>
<td></td>
</tr>
<tr>
<td>Tele end</td>
<td>29.9° / 23.9°</td>
<td></td>
</tr>
</tbody>
</table>

| Iris Control                | Auto/Manual      |                   |

### Operation

<table>
<thead>
<tr>
<th>Video Compression</th>
<th>MPEG-4 / MJPEG</th>
<th></th>
</tr>
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<tr>
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</tr>
<tr>
<td>Resolution</td>
<td>MPEG-4: VGA, QVGA, CIF, QCIF</td>
<td>MJPEG: 1280x960(4 VGA), VGA</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>MPEG-4 30fps@VGA, MJPEG 15fps@1280x960</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Image Setting</th>
<th>Brightness</th>
<th>Manual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure</td>
<td>Auto / Manual</td>
<td></td>
</tr>
<tr>
<td>Sharpness</td>
<td>Manual</td>
<td></td>
</tr>
<tr>
<td>Contrast</td>
<td>Manual</td>
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<td>White Balance</td>
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<td>Digital Zoom</td>
<td>1x ~ 12x</td>
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<tr>
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<td>Flip, Mirror, and 180° Rotate</td>
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<tr>
<td>Two-way Audio</td>
<td>Line out, Line in/Mic in</td>
<td></td>
</tr>
<tr>
<td>Compression</td>
<td>G.711 / G.726</td>
<td></td>
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</tbody>
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<tr>
<th>Audio</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>5V 10kΩ pull up</td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td>Photo relay output 300VDC/AC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network</th>
<th>10/100 Ethernet (RJ-45)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Protocol</td>
<td>TCP/IP, UDP, RTP, RTSP, HTTP, ICMP, FTP, SMTP, DHCP and IGMP</td>
<td></td>
</tr>
<tr>
<td>Password Levels</td>
<td>User and Administrator</td>
<td></td>
</tr>
<tr>
<td>Internet Browser</td>
<td>Internet Explorer (6.0+)</td>
<td></td>
</tr>
<tr>
<td>User Account</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>----</td>
<td></td>
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</tbody>
</table>

**Mechanical**

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<td>RJ-45</td>
</tr>
<tr>
<td>Audio</td>
<td>Stereo phone jack, 3.5mm</td>
</tr>
<tr>
<td>Alarm</td>
<td>4 pins terminal block, pitch 3.5mm</td>
</tr>
<tr>
<td>Auto Iris</td>
<td>Video drive &amp; DC drive</td>
</tr>
</tbody>
</table>

**LED Indicator**

| Power, Link, ACT |

**General**

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<thead>
<tr>
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<th>0°C ~ 50°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity: 10% to 90%, no condensation</td>
<td></td>
</tr>
<tr>
<td>Power Source</td>
<td>DC12V/PoE/AC24V</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>4.2W (max. 350mA@DC12V)</td>
</tr>
<tr>
<td></td>
<td>3W (max. 250mA@DC12V)</td>
</tr>
<tr>
<td>Certificate</td>
<td>CE, FCC, RoHS compliant</td>
</tr>
<tr>
<td>Dimension</td>
<td>164.5 x 72.5 x 52 mm (L x W x H)</td>
</tr>
<tr>
<td>Weight</td>
<td>310 g (0.68lb)</td>
</tr>
</tbody>
</table>
Appendix B: Internet Security Settings

If ActiveX control installation is blocked, please either set Internet security level to default or change ActiveX controls and plug-ins settings.

**Internet Security Level: Default**

**Step 1:** Start the Internet Explorer (IE).

**Step 2:** Select <Tools> from the main menu of the browser. Then Click <Internet Options>.

![Internet Options Dialog Box]

**Step 3:** Click the <Security> tab, and select <Internet>.

![Security Tab in Internet Options]

**Step 4:** Down the page, press “Default Level” (see the figure above) and click “OK” to confirm the setting. Close the browser window, and open a new one later when accessing the IP Camera.
ActiveX Controls and Plug-ins Settings

Step 1~3: Refer to the previous section above.
Step 4: Down the page, press “Custom Level” (see the figure below) to change ActiveX controls and plug-ins settings.

The Security Settings screen is displayed as below:
**Step 5:** Under “ActiveX controls and plug-ins”, set ALL items (as listed below) to <Enable> or <Prompt>.

<table>
<thead>
<tr>
<th>ActiveX controls and plug-ins settings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Automatic prompting for ActiveX controls</td>
</tr>
<tr>
<td>2. Binary and scrip behaviors</td>
</tr>
<tr>
<td>3. Download signed ActiveX controls</td>
</tr>
<tr>
<td>4. Download using ActiveX controls</td>
</tr>
<tr>
<td>5. Initialize and script ActiveX not marked as safe</td>
</tr>
<tr>
<td>6. Run ActiveX controls and plug-ins</td>
</tr>
<tr>
<td>7. Script ActiveX controls marked safe for scripting</td>
</tr>
</tbody>
</table>

**Step 6:** Click <OK> to accept the settings and close the <Security> screen.

**Step 7:** Click <OK> to close the Internet Options screen.

**Step 8:** Close the browser window, and restart a new one later for accessing the IP Camera.
Appendix C: DC Viewer Download Procedure

The procedure of DC Viewer software download is specified as follows.

**Step 1:** In the DC Viewer installation page, click “Next” for starting installing.

**Step 2:** Setup starts. Please wait for a while until the loading bar runs out.
Step 3: Click “Finish” to close the DC Viewer installation page.

Then, the IP Camera’s Home page will display as follows:
Appendix D: Back Focus Adjustment

When to adjust back focus
Back Focus refers to the distance from the rear lens element to the camera focal plane. In most cases, it is required to adjust back focus only when the camera’s lens cannot hold focus throughout its zoom range.

What requirements
Tools required when carrying out back focus adjustment include:
1. Back focus adjuster (in the IP Camera’s package)
2. Test chart / contrasting object

How to adjust back focus
Step 1: Set the camera on a stable mount, with the test chart or object at least 75 feet (23 meters) away (or as far as possible).
Step 2: Make sure the iris is wide open. Therefore, it is advised to keep the environment in low light condition.
Step 3: Adjust the focus to infinite far (\(\infty\)).
Step 4: Turn the zoom to the extreme telephoto position, and then focus on the subject.
Step 5: Set the zoom to wide-angle position.
Step 6: Loosen the back focus ring’s retaining screw with the supplied adjuster, and adjust the back focus ring for sharp picture.

Step 7: Repeat steps 3 ~ 6 until focus can stay the same throughout the zoom range.
Step 8: Tighten the back focus ring’s retaining screw to fix the ring.