
Interactive Services-Indoor Camera



SMC1010W

User Manual

Table of Contents

CHAPTER 1 INTRODUCTION.....	1
Overview	1
Physical Details - Network Camera	4
Package Contents	6
CHAPTER 2 BASIC SETUP	7
System Requirements.....	7
Installation - Network Camera.....	8
Setup using the Windows Wizard	9
CHAPTER 3 VIEWING LIVE VIDEO	14
Overview	14
Requirements.....	14
Connecting to a Camera on your LAN.....	14
Connecting to a Camera via the Internet	16
Viewing Live Video	18
CHAPTER 4 ADVANCED VIEWING SETUP	20
Introduction	20
Adjusting the Video Image	20
Viewing the live Video on your cell phone.....	23
Controlling User Access to the Video Stream	25
Making Video available from the Internet.....	26
Viewing Live Video via the Internet	29
Motion Detection Alerts	30
CHAPTER 5 WEB-BASED MANAGEMENT	32
Introduction	32
Connecting to Network Camera.....	32
Welcome Screen.....	33
Administration Menu.....	34
System Screen	35
Network Screen.....	37
Wireless Screen (Wireless Model Only)	40
DDNS Screen	42
Video & Audio Screen.....	44
Video Access Screen	47
User Database Screen.....	49
Motion Detection Screen	50
E-Mail Screen	51
FTP Screen.....	53
HTTP Screen	54
Event Trigger Screen	55
Maintenance Screen	57
Status Screen.....	59
Log Screen.....	61
CHAPTER 6 WINDOWS VIEWING/RECORDING UTILITY	62
Overview	62
Installation	62
System Tray Icon.....	63
Main Screen	63
Camera Setup	64

Monitor Program - for Streams Live Viewing	68
Recorder Program - for Streams Recording	70
CHAPTER 7 TROUBLESHOOTING	75
Overview	75
Problems	75
APPENDIX A SPECIFICATIONS	77
Network Camera	77
Regulatory Approvals	77
Copyright Notice	78
APPENDIX B STREAMING VIDEO/AUDIO SOLUTION	93
Overview	93
Streaming Video/Audio through Internet Camera	93

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Chapter 1

Introduction



This Chapter provides details of the Network Camera's features, components and capabilities.

Overview

The Network Camera has an Integrated Microcomputer and a high quality CMOS digital-Image-Sensor, enabling it to display high quality live streaming video over your wired LAN, the Internet, and for the Network Camera, an 802.11g Wireless LAN.

Using enhanced MPEG-4 technologies, the Network Camera is able to stream high quality video and audio directly to your PC. The high compression capabilities of MPEG-4 reduce network bandwidth requirements to amazingly low levels.

A convenient and user-friendly Windows program is provided for both viewing and recording video. If necessary, you can even view video using your Web Browser, on a variety of software platforms.

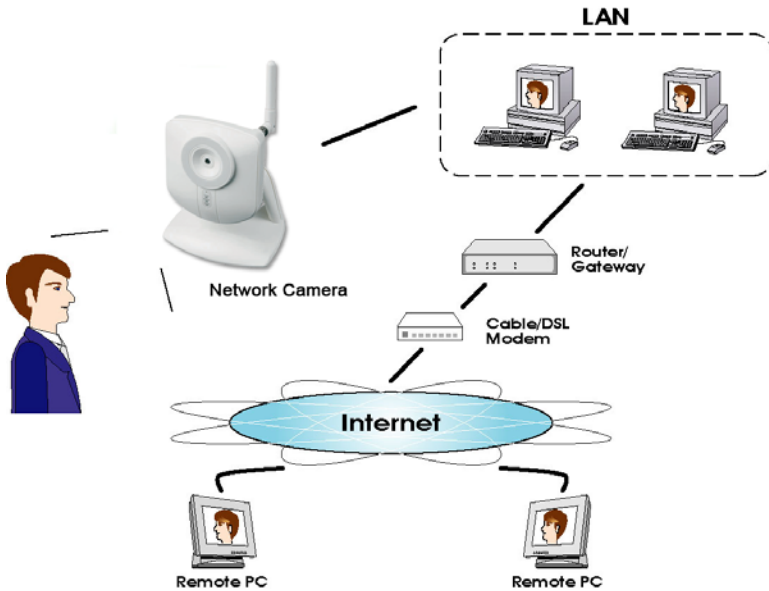


Figure 1: Network Camera

Features

- **Standalone Design.** The Network Camera is a standalone system with built-in CPU and Video encoder. It requires only a power source and a connection to your LAN or Wireless LAN.
- **Dual Video Support.** The Network Camera can support both MEPEG4 and MJEPG video for different image compression.

- ***Stream Live Video to Multiple Users.*** The MPEG4 encoder and HTTP server built into the camera generate a ready-to-view video stream. Just connect to the camera using your Web browser or the provided Windows utility to view live video.
- ***Suitable for Home, Business or Public Facilities.*** Whether for Home, Business or Public Facility surveillance, or just for entertainment and fun, the Network Camera has the features you need.
- ***Multi-Protocol Support.*** Supporting TCP/IP networking, SMTP (E-mail), HTTP and other Internet related protocols, the Network Camera can be easily integrated into your existing network.
- ***Easy Configuration.*** A Windows-based Wizard is provided for initial setup. Subsequent administration and management can be performed using a standard web browser. The administrator can configure and manage the Network Camera via the LAN or Internet.
- ***Viewing/Recording Utility.*** A user-friendly Windows utility is provided for viewing live video. For periods when you are absent, or for scheduled recording, this application also allows you to record video to an ASF file on your PC. The recorded files are in a standard Windows Media format, and thus usable by a wide variety of programs if required.
- ***Motion Detection.*** This feature can detect motion in the field of view. The Network Camera will compare consecutive frames to detect changes caused by the movement of large objects. This function only works indoors due to the sensitivity of the CMOS sensor. When motion is detection, an E-mail alert can be sent, or some other action may be triggered.
- ***Flexible Scheduling.*** You can limit access to the video stream to specified times using a flexible scheduling system. The Motion Detection feature can also have its own schedule, so it is active only when required.
- ***Syslog Support.*** If you have a Syslog Server, the Network Camera can send its log data to your Syslog Server.
- ***Audio Support.*** You can listen as well as look! Audio is encoded with the video if desired. You can use either the built-in microphone or an external microphone.

Internet Features

- ***User-definable HTTP port number.*** This allows Internet Gateways to use "port mapping" so the Network Camera and a Web Server can share the same Internet IP address.
- ***DDNS Support.*** In order to view video over the Internet, users must know the Internet IP address of the gateway used by the Network Camera. But if the Gateway has a dynamic IP address, DDNS (Dynamic DNS) is required. Since many existing Gateways do not support DDNS, this function is incorporated into the Network Camera.
- ***NTP (Network-Time-Protocol) Support.*** NTP allows the Network Camera to calibrate its internal clock from an Internet Time-Server. This ensures that the time stamp on Video from the Network Camera will be correct.

Security Features

- ***User Authentication.*** If desired, access to live video can be restricted to known users. Users will have to enter their username and password before being able to view the video stream. Up to 5 users can be entered.
- ***Password-Protected Configuration.*** Configuration data can be password protected, so that it only be changed by the Network Camera Administrator.

Wireless Features (Wireless Model Only)

- **Standards Compliant.** The Network Camera complies with the IEEE802.11g (DSSS) specifications for Wireless LANs.
- **Supports both 802.11b and 802.11g Standards.** The Network Camera supports both 802.11b and 802.11g standards.
- **Speeds to 54Mbps.** All speeds up to the 802.11g maximum of 54Mbps are supported.
- **Wired and Wireless Network Support.** The Network Camera supports either wired or wireless transmission.
- **WEP Support.** Full WEP support (64/128 Bit) on the Wireless interface is provided.
- **WPA/WPA2 Support.** The WPA Personal/WPA2 Personal standard is also supported, allowing advanced encryption of wireless data.
- **WPS Support.** WPS (Wi-Fi Protected Setup) can simplify the process of connecting any device to the wireless network by using the push button configuration (PBC) on the Wireless Access Point, or entering a PIN code if there's no button.

Physical Details - Network Camera

Front - Network Camera

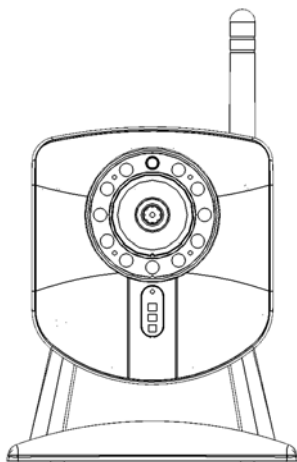


Figure 2: Front Panel

Privacy Button	On (Green) - The privacy button is activated. Off - The privacy button is not in use.
Lens	No physical adjustment is required or possible for the lens, but you should ensure that the lens cover remain clean. The image quality is degraded if the lens cover is dirty or smudged.
Microphone	The built-in microphone is mounted on the front.
Reset Button	This button is recessed; you need a pin or paper clip can be used to depress it. It can be activated at any time the camera is in the "ready" mode. <ul style="list-style-type: none">• Reset to manufacturer default valued and reboot. When pressed and held over 10 seconds, the settings of Network Camera will be set to their default values. <p>Note:</p> <p>After this procedure is completed, the <i>Power</i> LED will blink three times to confirm that the reset was completed successfully.</p>
Power LED (Green)	On - Power on. Off - No power. Blinking - The <i>Power</i> LED will blink during start up. This will take 15 to 20 seconds.

**Network LED
(Green, Amber)**

On (Green) - Wireless or LAN connection is available.

Off - Wireless or LAN is not connected or camera is not sending/receiving data.

Blinking (Green) - Data is being transmitted or received via the LAN or Wireless connection.

On (Amber) - If the LED is on, the WPS is not processing successfully.

Blinking (Amber) - WPS function is being processed.

Rear - Network Camera

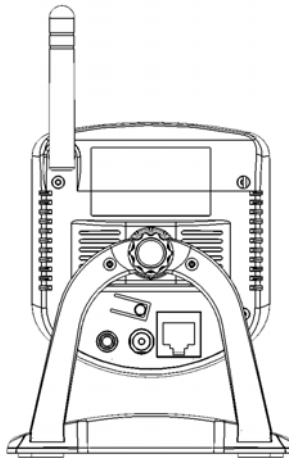


Figure 3: Rear Panel

Antenna

Attach the supplied antenna here. The antenna is adjustable; best results are usually obtained with the antenna positioned vertically.

Speaker out

If required, an external speaker can be plugged in here.

Power Input

Connect the supplied 5V power adapter here. Do not use other power adapters; doing so may damage the camera.

LAN port

Use a standard LAN cable to connect your Network Camera to a 10/100BaseT hub or switch.

Note:

- Plugging in the LAN cable will disable the Wireless interface. Only 1 interface can be active at any time.
- The LAN cable should only be connected or disconnected when the camera is powered OFF. Attaching or detaching the LAN cable while the camera is powered on does NOT switch the interface between wired and wireless.

**WPS Button
(Wireless Model
Only)**

Push the WPS button on the device and on your other wireless device to perform WPS function that easily creates an encryption-secured wireless connection automatically.

- **WPS PBC Mode.** When pressed and released (less than 3 seconds), the Network Camera will be in the WPS PBC mode (Auto link mode).
- **WPS Pin Code Mode.** When pressed and held for over 3

seconds, the Network Camera will be in the WPS Pin Code mode.

Package Contents

The following items should be included: If any of these items are damaged or missing, please contact your dealer immediately.

1. Network Camera
2. Antenna (Wireless Model Only)
3. Power adapter
4. Installation CD-ROM
5. Quick Installation Guide

Chapter 2

Basic Setup



This Chapter provides details of installing and configuring the Network Camera.

System Requirements

- To use the wired LAN interface, a standard 10/100BaseT hub or switch and network cable is required.
- To use the Wireless interface on the wireless model, other Wireless devices must be compliant with the IEEE802.11b or IEEE802.11g specifications. All Wireless stations must use compatible settings.



The default Wireless settings are:

- Mode: Infrastructure**
- SSID: ANY**
- Wireless Security: Disabled**
- Domain: USA**
- Channel No.: Auto**

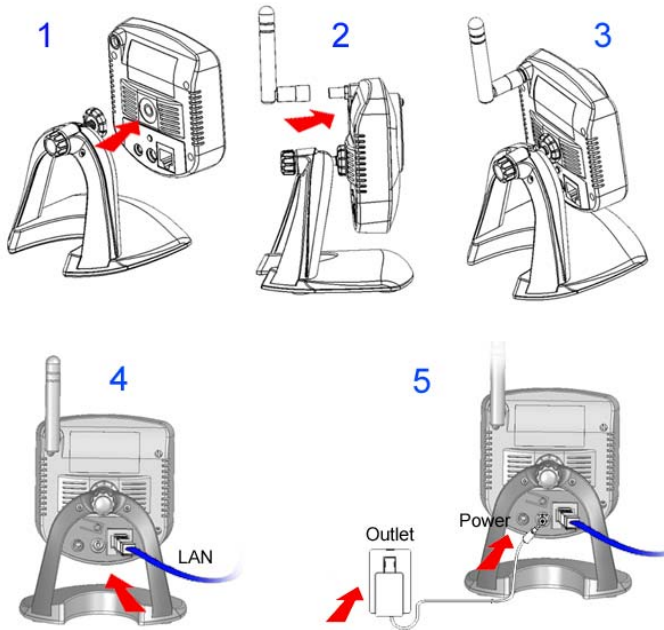


Figure 4: Installing Diagram

Installation - Network Camera

1. Assemble the Camera

Screw the supplied antenna to the mounting point on the rear.

Attach the Camera Mount to the camera.

2. Connect the LAN Cable

Connect the Network Camera to a 10/100BaseT hub or switch, using a standard LAN cable.



Note

For the Wireless Model, this will disable the Wireless Interface. The Wireless and LAN interfaces cannot be used simultaneously. Using the LAN interface is recommended for initial configuration. After the Wireless settings are correct, the Wireless interface can be used.

The first time you connect to the camera, you should connect the LAN cable and configure the Network Camera with appropriate settings. Then you can unplug the LAN cable and power off the camera. The Network Camera will be in wireless interface when you power on the camera again.

3. Power Up

Connect the supplied 5V power adapter to the Network Camera and power up. Use only the power adapter provided. Using a different one may cause hardware damage.

4. Check the LEDs

- The *Power* LED will turn on briefly, then start blinking. It will blink during startup, which takes 15 to 20 seconds. After startup is completed, the *Power* LED should remain ON.
- The *Network* LED should be ON.

For more information, refer to *Physical Details - Network Camera* in Chapter 1.

Setup using the Windows Wizard

Initial setup should be performed using the supplied Windows-based setup Wizard. This program can locate the Network Camera even if its IP address is invalid for your network. You can then configure the Network Camera with appropriate TCP/IP settings for your LAN.

Subsequent administration can be performed with your Web browser, as explained in *Chapter 5 - Web-based Management*.

Setup Procedure

1. Insert the supplied CD-ROM into your drive. If the setup program does not start automatically, run **NetworkCamera.exe** in the root folder.
 - You will see the *Welcome* screen shown below.
 - Click the *Setup Camera* button to start the setup Wizard



Figure 5: Welcome Screen

2. The next screen, shown below, will list all the Network Cameras on your LAN.

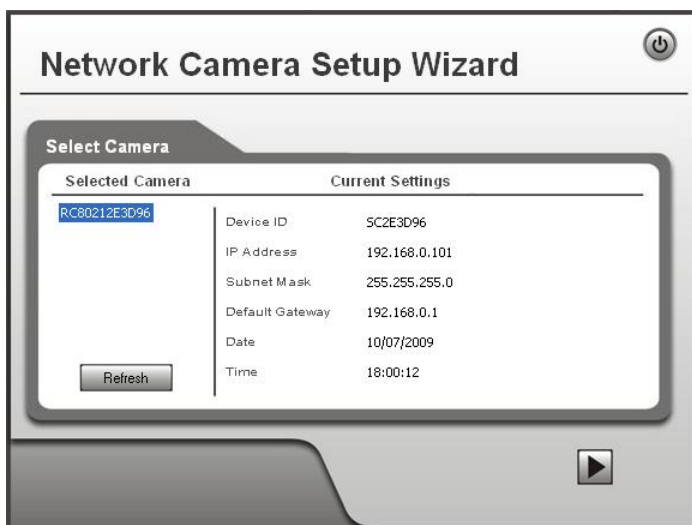


Figure 6: Camera List Screen

- Select the desired Camera from the list on the left. The current settings for the selected Camera will be displayed in the table on the right.
 - Click *Next* to continue.
3. You will be prompted to enter the *Administrator Name* and *Administrator Password*, as shown below.
- If using the default values, enter **administrator** for the name, and leave the password blank.
 - Otherwise, enter the *Administrator Name* and *Administrator Password* set on the *Maintenance* screen.



Figure 7: Password Dialog

4. This screen allows you to enter a suitable **Description**, and set the correct **Time Zone**, **Date**, and **Time**. Make any desired changes, then click *Next* to continue.



Figure 8: Camera Settings

5. On the following **IP Address Settings** screen, shown below, choose *Fixed IP Address*, *Dynamic IP Address* or *PPPoE*.

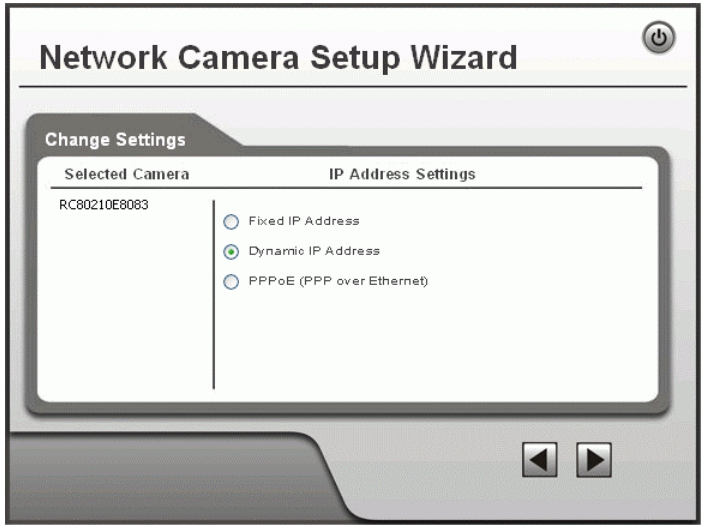


Figure 9: Fixed or Dynamic IP Selection

- *Fixed IP Address* is recommended, and can always be used.
- *Dynamic IP Address* can only be used if your LAN has a DHCP Server.
- *PPPoE (PPP over Ethernet)* is the most common login method, widely used with DSL modems.

Click *Next* to continue.

6. If you chose *Fixed IP Address*, the following **TCP/IP Settings** screen will be displayed.



Figure 10: TCP/IP Settings

- Enter an unused **IP Address** from within the address range used on your LAN.
- The **Subnet Mask** and **Default Gateway** fields must match the values used by PCs on your LAN.
- The **Primary DNS** address is required in order to use the E-mail alert or Dynamic DNS features. Enter the DNS (Domain Name Server) address recommended by your ISP.
- The **Secondary DNS** is optional. If provided, it will be used if the Primary DNS is unavailable.

Click *Next* to continue.

7. If you chose *PPPoE*, the following **PPPoE Settings** screen will be displayed.

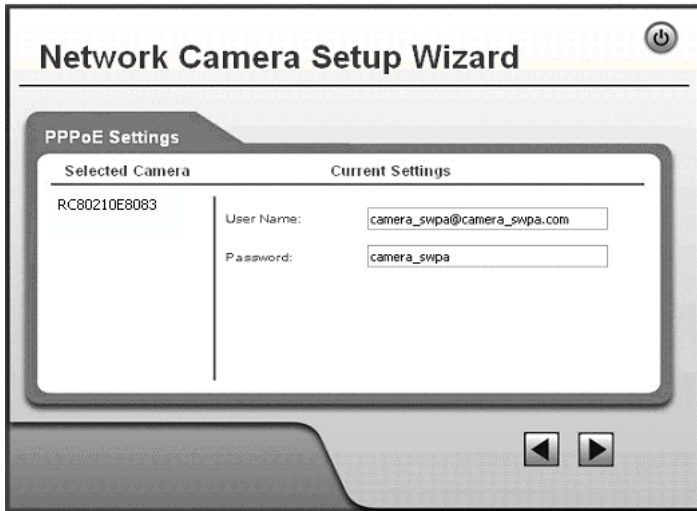


Figure 11: PPPoE Settings Screen

- Enter the **User Name** provided by your ISP.
- Enter the **Password** for the user name above.

Click *Next*.

8. The next screen, shown below, displays all details of the Network Camera.
 - Click *Next* if the settings are correct
 - Click *Back* to modify any incorrect values.



Figure 12: Save Settings

9. Click *OK* to confirm that you want to save the new settings. If you want to cancel your changes, click *Cancel*.



Figure 13: Confirm Screen

10. After clicking *OK*, you will see the screen below.



Figure 14: Final Screen

Clicking the *Install Utility* button will install the Viewing/Recording utility described in *Chapter 6 - Windows Viewing/Recording Utility*.

11. Click *Exit* to end the Wizard.
Setup is now complete.

Chapter 3

3

Viewing Live Video

This Chapter provides basic information about viewing live video.

Overview

After finishing setup via the Windows-based Wizard, all LAN users can view live video using Internet Explorer on Windows.

This Chapter has details of viewing live video using Internet Explorer.

But many other powerful features and options are available:

- To view multiple cameras simultaneously, or record video (either interactively or by schedule), you should install the Windows Viewing/Recording utility. Refer to **Chapter 6 - Windows Viewing/Recording Utility** for details on installing and using this program.
- The camera administrator can also adjust the Video Stream, and restrict access to the video stream to known users by requiring viewers to supply a username and password. See **Chapter 4 - Advanced Viewing Setup** for details.
- To make Live Video from the camera available via the Internet, your Internet Gateway or Router must be configured correctly. See *Making Video available from the Internet* in **Chapter 4 - Advanced Viewing Setup** for details.

Requirements

To view the live video stream generated by the Network Camera, you need to meet the following requirements:

- Windows 98/98SE, Windows 2000, Windows XP.
- Internet Explorer 6 or later.

Connecting to a Camera on your LAN

To establish a connection from your PC to the Network Camera:

1. Use the Windows utility to get the IP address of the Network Camera.
2. Start Internet Explorer.
3. In the Address box, enter "HTTP://" and the IP Address of the Network Camera.
4. When you connect, the following screen will be displayed.

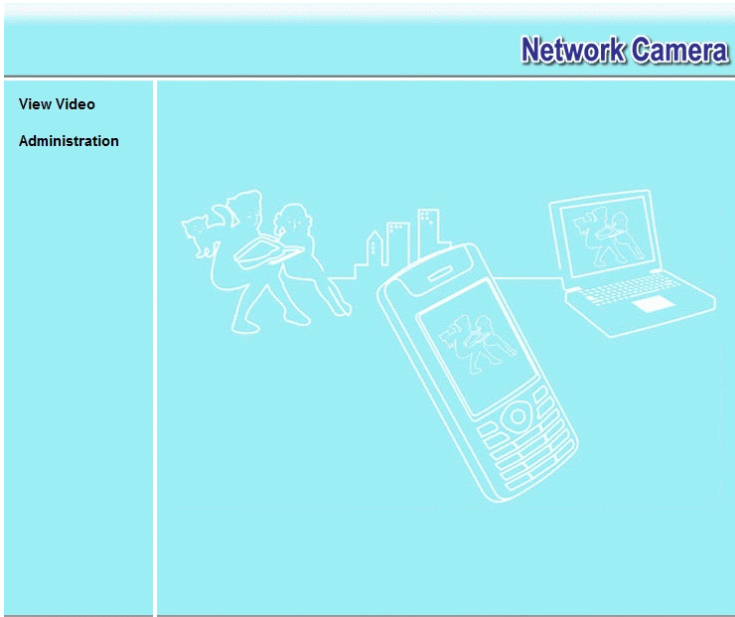


Figure 15: Home Screen

5. Click *View Video*.
6. If the Administrator has restricted access to known users, you will then be prompted for a username and password.
Enter the name and password assigned to you by the Network Camera administrator.
7. The first time you connect to the camera, you will be prompted to install an ActiveX component (OCX or CAB file), as in the example below.

You must install this ActiveX component (OCX or CAB file) in order to view the Video stream in Internet Explorer.

Click the "Yes" button to install the ActiveX component.



Figure 16: ActiveX OCX Prompt

8. Video will start playing automatically. There may be a delay of a few seconds while the video stream is buffered.

Connecting to a Camera via the Internet

You can NOT connect to a camera via the Internet unless the camera Administrator has configured both the camera and the Internet Gateway/Router used by the camera.

See *Making Video available from the Internet* in **Chapter 4 - Advanced Viewing Setup** for details of the required configuration.

Also, you need a broadband Internet connection to view video effectively. Dial-up connections are NOT supported.

To establish a connection from your PC to the Network Camera via the Internet:

1. Obtain the following information from the Administrator of the camera you wish to connect to:
 - Internet IP Address or Domain Name of the camera.
 - Port number for HTTP connections.
 - Login (username, password) if required.
2. Start Internet Explorer.
3. In the Address box, enter the following:

```
HTTP://Internet_Address:port_number
```

Where `Internet_Address` is the Internet IP address or Domain Name of the camera, and `port_number` is the port number used for HTTP (Web) connections to the camera.

Examples using an IP address:

```
HTTP://203.70.212.52:1024
```

Where the Internet IP address is 203.70.212.52 and the HTTP port number is 1024.

Example using a Domain Name:

```
HTTP://mycamera.dyndns.tv:1024
```

Where the Domain name (using DDNS in this example) is `mycamera.dyndns.tv` and the HTTP port number is 1024.

- When you connect, the following screen will be displayed.

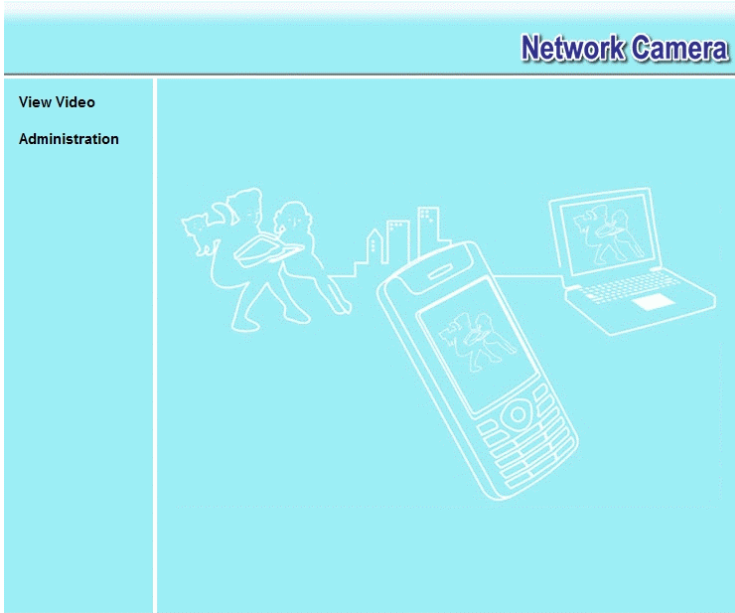


Figure 17: Home Screen

- Click *View Video*.
- If the Administrator has restricted access to known users, you will then be prompted for a username and password.
Enter the name and password assigned to you by the Network Camera administrator.
- The first time you connect to the camera, you will be prompted to install an ActiveX component (OCX or CAB file), as in the example below.
You must install this ActiveX component (OCX or CAB file) in order to view the Video stream in Internet Explorer.
Click the "Yes" button to install the ActiveX component.



Figure 18: ActiveX OCX Prompt

- Video will start playing automatically. There may be a delay of a few seconds while the video stream is buffered.

Viewing Live Video

After installing the ActiveX component, you will be able to view the live video stream in its own window, as shown below.

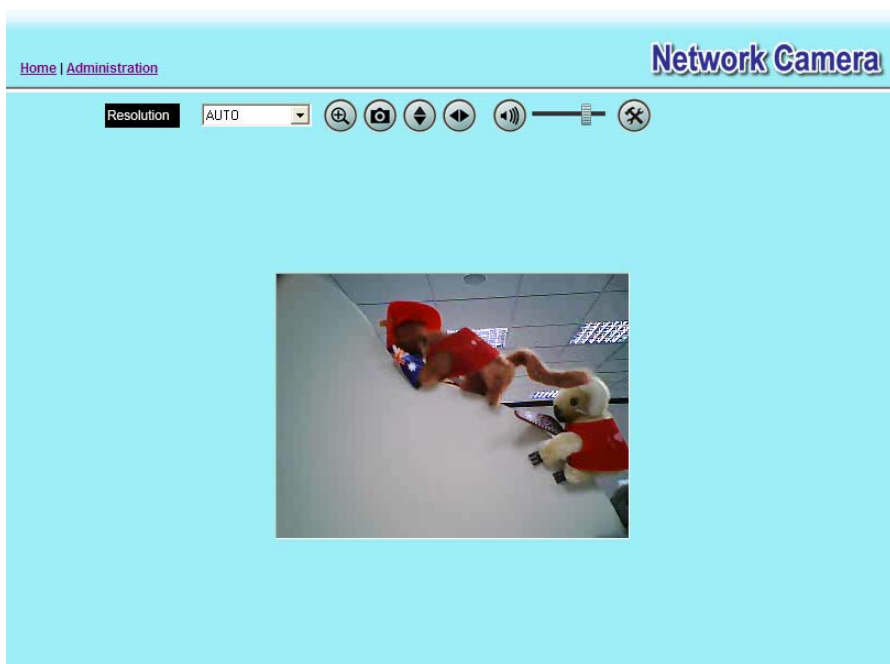


Figure 19: View Video Screen

There are a number of options available on this screen, accessed by select list, button or icon. See the table below for details.

Note: The options can only be configured while using IE browser. Other browsers can just view the video rather than configuration.

General Options

These options are always available, regardless of the type of camera you are connected to.



Resolution. Use this drop-down list to select the desired video size.



Zoom. A digital zoom feature is available. To zoom in on a section of the window, click this icon. Then use your mouse to select the section you want to magnify. Click the icon again to disable the zoom feature.



Snapshot. Click this to take a single JPEG "snapshot" image of the current video.



Flip. Click this to have the image swapped top-to-bottom.



Mirror. Click this to have the image swapped left-to-right.



Audio On. This icon is displayed if audio is On. Click on the icon to turn audio Off.



Volume. If audio is enabled, use this slider to adjust the volume.



Setup. Select the desired setup format from the drop-down list.

Chapter 4



Advanced Viewing Setup

This Chapter provides information about the optional settings and features for viewing video via the Network Camera. This Chapter is for the Camera Administrator only.

Introduction

This chapter describes some additional settings and options for viewing live Video:

- Adjusting the video image
- Controlling user access to the live video stream
- Making video available from the Internet
- Using the *Motion Detection* feature

Adjusting the Video Image

If necessary, the Network Camera Administrator can adjust the Video image.

To Adjust the Video Image:

1. Connect to the Web-based interface of the Network Camera. (See *Chapter 5 - Web-based Management* for details.)
2. Select *Administration*, then *Video Image*. You will see a screen like the example below.

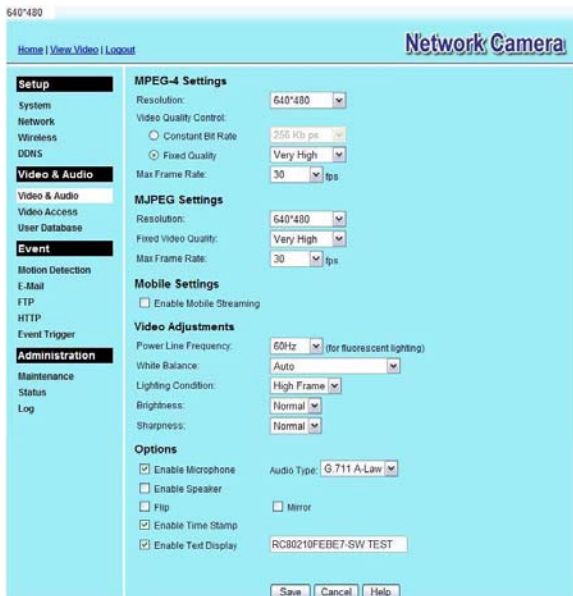


Figure 20: Video Image Screen

3. Make the required adjustments, as explained below, and save your changes.

MPEG-4 Settings	
Resolution	Select the desired video resolution format. The default resolution is set to 640*480.
Video Quality Control	<ul style="list-style-type: none"> • Constant Bit Rate: Select the desired bit rate. The default is set to 256 Kbps. • Fixed Quality: Select the desired option. The default fix quality is set to Very High.
Max. Frame Rate	<p>Select the desired Maximum bandwidth for the video stream. Note that you can specify EITHER the Bandwidth OR the Frame Rate, not both. If the Bandwidth is defined, the frame rate will be adjusted as necessary to achieve the specified frame rate.</p> <p>The default value for bandwidth is 30.</p>
MJPEG Settings	
Resolution	Select the desired video resolution format. The default resolution is set to 640*480.
Fixed Video Quality	Select the desired fix quality. The default fix quality is set to Very High.
Max. Frame Rate	<p>Select the desired Maximum bandwidth for the video stream. Note that you can specify EITHER the Bandwidth OR the Frame Rate, not both. If the Bandwidth is defined, the frame rate will be adjusted as necessary to achieve the specified frame rate.</p> <p>The default value for bandwidth is 30.</p>
Mobile Settings	
Enable Mobile Streaming	Enable streaming video for the mobile device by checking this checkbox.
Resolution	The default resolution is set to 160x120.
Video Quality Control	<ul style="list-style-type: none"> • Constant Bit Rate: Select the desired fix bit rate. • Fixed Quality: Select the desired option. The default fix quality is set to Normal.
Max. Frame Rate	Select the desired Maximum bandwidth for the video stream.
Access Code	Enter the code for accessing the live video from camera through cell phone connection.
Video Adjustment	
Power Line Frequency	Select the power line frequency (50Hz or 60Hz) used in your region, to improve the picture quality under florescent lighting.
White Balance	Select the desired option to match the current environment and lighting.
Lighting Condition	Select the desired option to match the current lighting condition.
Brightness	If necessary, you can adjust the brightness to obtain a better image. For example, if the camera is facing a bright light, the image may be too dark. In this case, you can increase the brightness.

Sharpness	Select the desired option for the sharpness. You can select a Sharpness value between -3 and 3.
Options	
Microphone	Enable audio by checking this checkbox. Using Audio will increase the bandwidth requirements slightly.
Audio Type	Select the desired audio type.
Speaker	Enable speaker sound by checking this checkbox.
Flip	This setting will have the image swapped top-to-bottom.
Mirror	This setting will have the image swapped left-to-right.
Time Stamp	If enabled, the current time will be displayed on the Video image.
Text Display	Enable this setting if you want text to be displayed on the Video image, and enter the desired text - up to 20 characters. This feature is often used to identify each camera when multiple cameras are installed.

Viewing the live Video on your cell phone

The live streaming of the Network Camera can even be viewed from a compatible cell phone, so you can keep an eye on things almost everywhere you go. It's just as easy as following the required steps.

To Adjust the Mobile Settings

1. Connect to the Web-based interface of the Network Camera. (See *Chapter 5 - Web-based Management* for details.)
2. Select *Administration*, then *Video & Audio*. You will see a screen like the example below.

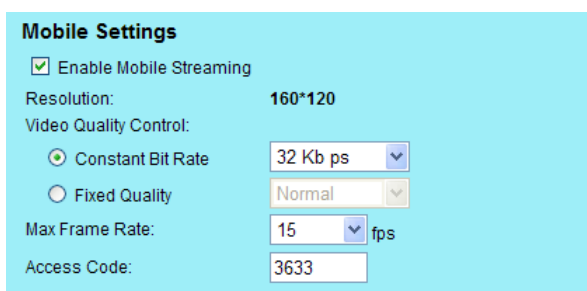


Figure 21: Mobile Settings

3. Check the checkbox of **Enable Mobile Streaming** and configure the related settings in the Mobile Settings section, as explained below. Save your changes.

Mobile Settings	
Enable Mobile Streaming	Enable streaming video for the mobile device by checking this checkbox.
Resolution	The default resolution is set to 160x120.
Video Quality Control	<ul style="list-style-type: none">• Constant Bit Rate: Select the desired fix bit rate.• Fixed Quality: Select the desired option. The default fix quality is set to Normal.
Max. Frame Rate	Select the desired Maximum bandwidth for the video stream.
Access Code	Enter the code for accessing the live video from camera through cell phone connection.

Connecting Cell Phone to the Network Camera

A number of different mobile handsets are compatible with the Network Camera. Follow the suggested steps (steps may differ according to the mobile phone you use).

Before connecting to the cell phone, please make sure the following:

- Mobile phone should be supported by 3GPP protocol.
- Camera Web management - RTSP port number needs to be entered. Default is 554.
- Access code: 8 digits (0~9)

Steps:

1. Start IE
2. Select *Add Bookmark*
3. Click *Edit*
4. Enter desired value for *Subject* or leave it blank
5. Enter the camera's IP address into the Address box.
RTSP://Internet_Address:port_number
6. Click *Play*

Controlling User Access to the Video Stream

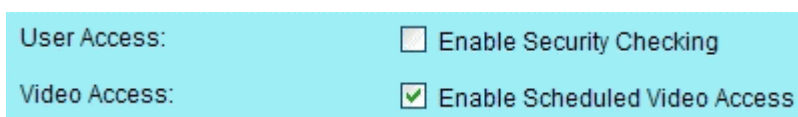
By default, anyone can connect to the Network Camera and view live Video at any time. If desired, you can limit access to scheduled times, and also restrict access to known users.

To Control User Access to Live Video:

1. Connect to the Web-based interface of the Network Camera. (See *Chapter 5 - Web-based Management* for details.)
2. Select *Administration*, then *Video Access*.
3. Set the desired options for **Access**.

Access

If the Video Access is disabled, users cannot connect using either their Web Browser or the Windows utility. However, viewing video is still possible by logging in as the Administrator.



User Access:	<input type="checkbox"/> Enable Security Checking
Video Access:	<input checked="" type="checkbox"/> Enable Scheduled Video Access

Figure 22: Controlling User Access

See *Chapter 5 - Web-based Management* for further details about using the *Video Access* and *User Database* screens.

Making Video available from the Internet

If your LAN is connected to the Internet, typically by a Broadband Gateway/Router and Broadband modem, you can make the Network Camera available via the Internet. You will need to configure your Router or Gateway to allow connections from the Internet to the camera.

Router/Gateway Setup

Your Router or Gateway must be configured to pass incoming TCP (HTTP) connections (from Internet Viewers) to the Network Camera. The Router/Gateway uses the *Port Number* to determine which incoming connections are intended for the Network Camera.

This feature is normally called *Port Forwarding* or *Virtual Servers*, and is illustrated below. The Port Forwarding/Virtual Server entry tells the Router/Gateway that incoming TCP connections on port 1024 should be passed to the Network Camera. If necessary, check the user manual for your Router/Gateway for further details.

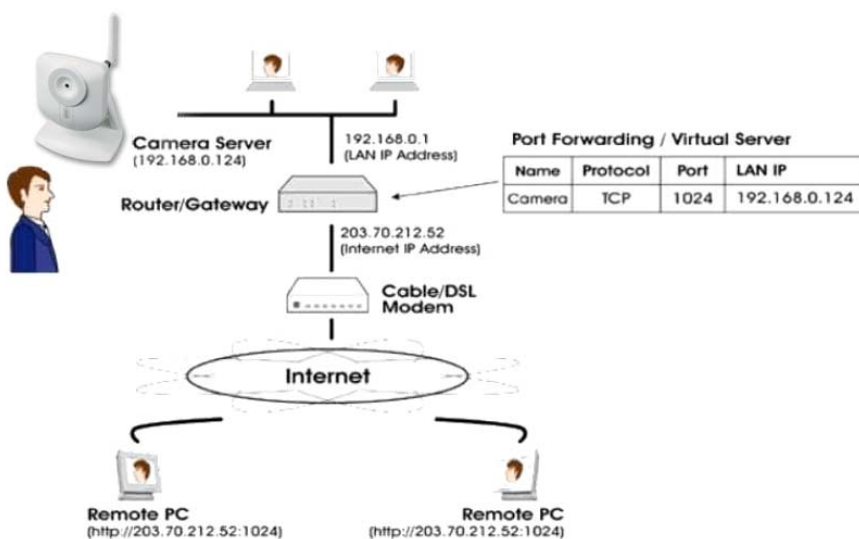


Figure 23: Connecting via the Internet



The "Port" for the *Port Forwarding / Virtual Server* entry above is the "Secondary Port" number specified on the *Network* screen of the Network Camera.

Network Camera Setup

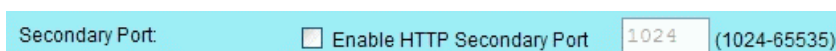
The Network Camera configuration does NOT have to be changed, unless:

- You wish to change the port number from the default value (1024).
- You wish to use the DDNS (Dynamic DNS) feature of the Network Camera.

HTTP Port Configuration

Normally, HTTP (Web) connections use port 80. Since the Network Camera uses HTTP, but port 80 is likely to be used by a Web Server, you can use a different port for the Network Camera. This port is called the *Secondary Port*.

The default *Secondary Port* is 1024. If you prefer to use a different port number, you can specify the port number on the Network Camera's *Network* screen, as shown below.



The screenshot shows a configuration interface for the Network Camera. It features a light blue header bar. On the left, the text 'Secondary Port:' is displayed. To its right is an unchecked checkbox labeled 'Enable HTTP Secondary Port'. Further right is a text input field containing the number '1024', followed by a range indicator '(1024-65535)'.

Figure 24: Network Screen

See *Chapter 5 - Web-based Management* for further details on using the *Network* screen.



Viewers need to know this port number in order to connect and view live Video, so you must inform viewers of the correct port number.

DDNS (Dynamic DNS)

Many internet connections use a "Dynamic IP address", where the Internet IP address is allocated whenever the Internet connection is established.

This means that other Internet users don't know the IP address, so can't establish a connection.

DDNS is designed to solve this problem, by allowing users to connect to your LAN using a domain name, rather than an IP address.

To use DDNS:

1. Register for the DDNS service with a supported DDNS service provider. You can then apply for, and be allocated, a Domain Name.
2. Enter and save the correct DDNS settings on the *DDNS* screen of the Network Camera.
3. Both Router and Camera should use the same port number for DDNS service.

Home | View Video | Logout **Network Camera**

Setup

System

Network

Wireless

DDNS

Video & Audio

Video & Audio

Video Access

User Database

Event

Motion Detection

E-Mail

FTP

HTTP

Event Trigger

Administration

Maintenance

Status

Log

Enable DDNS

Service Provider:

Domain (Host) Name:

Account/E-Mail:

Password/Key:

Check WAN IP Address:

Starting at Hour(s) Minute(s)

Figure 25: DDNS Screen

4. Operation is then automatic:

- The Network Camera will automatically contact the DDNS server whenever it detects that the Internet IP address has changed, and inform the DDNS server of the new IP address.
- Internet users can then connect to the camera using the Domain Name allocated by the DDNS service provider.

Example: <http://normanyu123456789.dyndns.org:6016>

normanyu123456789.dyndns.org is domain host name. 6016 is the port number.

Viewing Live Video via the Internet

Clients (viewers) will also need a broadband connection; dial-up connections are NOT recommended.

Viewing Live Video Using your Web Browser

If using your Web browser, you need to know the Internet IP address (or the Domain name) of the camera's Router/Gateway, and the correct port number.

Enter the Internet address of the Router/Gateway, and its port number, in the *Address* (or *Location*) field of your Browser.

Example - IP address:

HTTP://203.70.212.52:1024

Where the Router/Gateway's Internet IP address is 203.70.212.52 and the "Secondary Port" number on the Network Camera is 1024.

Example - Domain Name:

HTTP://mycamera.dyndns.tv:1024

Where the Router/Gateway's Domain name is mycamera.dyndns.tv and the "Secondary Port" number on the Network Camera is 1024.

Viewing Live Video with the Viewing/Recording Utility

If using the Windows Viewing/Recording Utility, the details of the Network Camera must be entered on the *Camera Setup* screen.

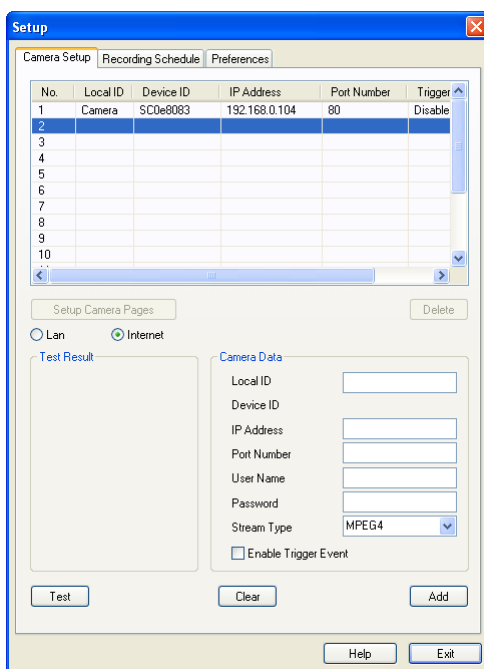


Figure 26: Add Camera from Internet

See *Chapter 6 - Window Viewing/Recording Utility* for full details on using the Windows Viewing/Recording utility.

Motion Detection Alerts

The *Motion Detection* feature can generate an Alert when motion is detected.

The Network Camera will compare consecutive frames to detect changes caused by the movement of large objects.

But the motion detector can also be triggered by:

- Sudden changes in the level of available light
- Movement of the camera itself.

Try to avoid these situations. The motion detection feature works best in locations where there is good steady illumination, and the camera is mounted securely. It cannot be used outdoors due to the sensitivity of the CMOS sensor.

Note: The Motion Detection settings can only be configured while using IE browser.

To Use Motion Detection Alerts

Using the Web-based interface on the Network Camera, select the *Motion Detection* screen, then configure this screen as described below.

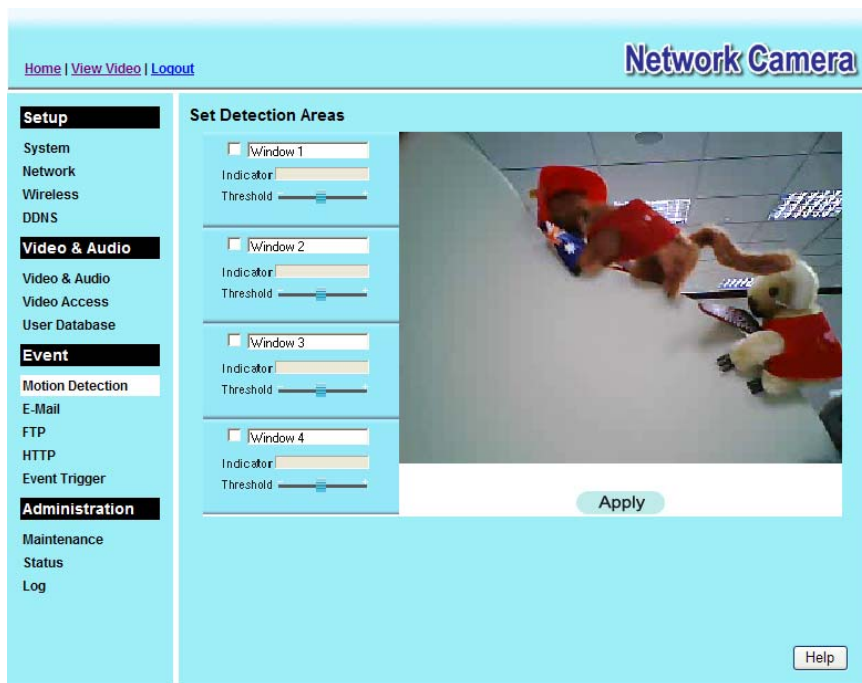


Figure 27: Motion Detection

1. Enable the *Motion Detection* feature.
2. Set the area or areas of the video image to be examined for movement. You can define up to 4 areas, and set the motion threshold individually for each area.
3. If using a schedule, define the desired schedule in *Event Trigger* screen.
4. Save your changes.
5. Select the *E-Mail* screen to have alerts sent by E-mail:
 - Enable and enter at least one (1) E-mail address
 - Select or enter the desired options for *Video Attachment*, *Show "From" as* and *Subject* fields.

- Enter details of the SMTP Server used to send the E-mail.



If the Motion Detection feature is enabled, but E-Mail is not enabled, then the only action when motion is detected is to log this event in the system log.

Chapter 5

5

Web-based Management

This Chapter provides Setup details of the Network Camera's Web-based Interface. This Chapter is for the Camera Administrator only.

Introduction

The Network Camera can be configured using your Web Browser. The Network Camera must have an IP address which is compatible with your PC.

The recommended method to ensure this is to use the supplied Windows-based Wizard, as described in *Chapter 2 - Basic Setup*.

Connecting to Network Camera

- If you have run the Windows-based setup Wizard, the final screen provided a button *Web UI*. Clicking this button will immediately connect to the Network Camera, using your Web Browser.
- If using only your Web Browser, use the following procedure to establish a connection from your PC to the Network Camera:
- Once connected, you can add the Network Camera to your Browser's *Favorites* or *Bookmarks*.

Connecting using your Web Browser

1. Use the Windows utility to get the IP address of the Network Camera.
2. Start your WEB browser.
3. In the Address box, enter "HTTP://" and the IP Address of the Network Camera.
4. You will then be prompted for a username and password.
 - If using the default values, enter **administrator** for the name, and leave the password blank.
 - Otherwise, enter the *Administrator ID* and *Administrator Password* set on the *Maintenance* screen.

Welcome Screen

When you connect, the following screen will be displayed.

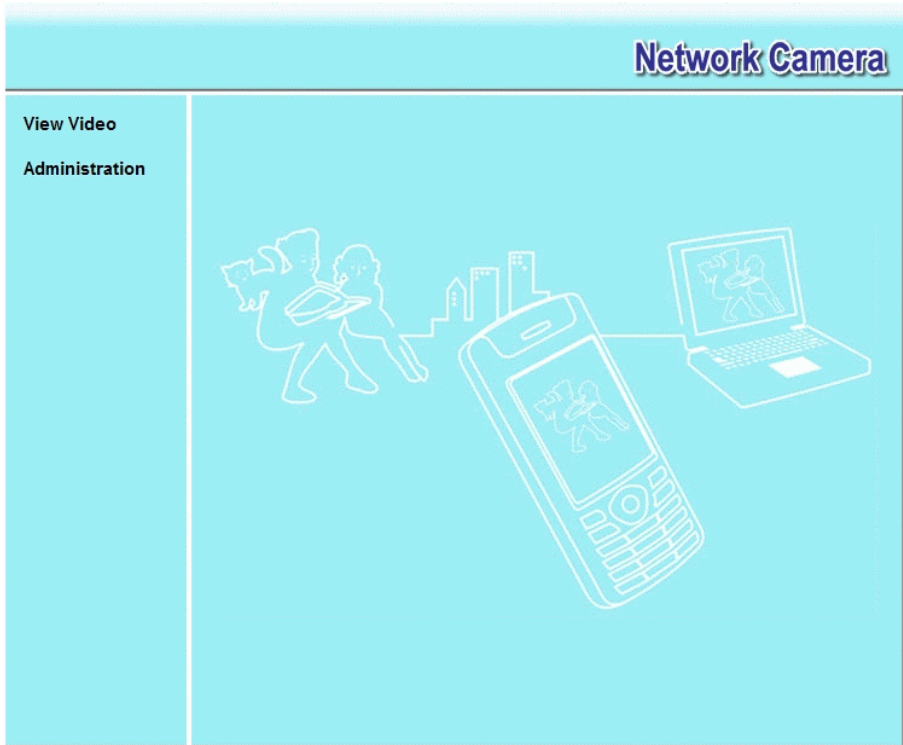


Figure 28: Welcome Screen

The menu options available from this screen are:

- **View Video** - View live Video using your Web Browser. See *Chapter 3 - Viewing Live Video* for details.
- **Administration** - Access the Administration menu.

Administration Menu

Clicking on *Administration* on the menu provides access to all the settings for the Network Camera.

The *Administration* menu contains the following options:

Setup

- System
- Network
- Wireless (Wireless Model Only)
- DDNS

Video Stream

- Video & Audio
- Video Access
- User Database

Event

- Motion Detection
- E-Mail
- FTP
- HTTP
- Event Trigger

Administration

- Maintenance
- Status
- Log

System Screen

After clicking *Administration* on the main menu, or selecting *System* on the *Administration* menu, you will see a screen like the example below.

Home | View Video | Logout

Network Camera

Setup

- System
- Network
- Wireless
- DDNS

Video & Audio

- Video & Audio
- Video Access
- User Database

Event

- Motion Detection
- E-Mail
- FTP
- HTTP
- Event Trigger

Administration

- Maintenance
- Status
- Log

System Settings

Device ID: SC0e8083

Camera Name: RC80210E8083

Description:

Date & Time

Date Format: MM/DD/YYYY

Current Date & Time: 07/22/2008 21:04:41

Time Zone: (GMT-08:00) Pacific Time (US & Canada); Tijuana

Adjust for daylight saving

Network Time Protocol: Enable

NTP Server Address: clock.via.net

Update: Every Day at 00 : 00 (hh:mm)

Options

LED Operation: Enable

Privacy Button: Enable

Figure 29: System Screen

Data - System Screen

System Settings	
Device ID	This displays the ID for the Network Camera.
Camera Name	Enter the desired name for the Network Camera.
Description	This field is used for entering a description, such as the location of the Network Camera.
Date & Time	
Date Format	<p>Select the desired date format, it will also be used to display the date and time as an overlay on the video image.</p> <p>The abbreviations used to predefine the date formats are list as follows:</p> <ul style="list-style-type: none"> • YYYY-MM-DD = Year-Month-Day, e.g. 2006-01-31 • MM/DD/YYYY = Month/Day/Year, e.g. 01/31/2006 • DD/MM/YYYY = Day/Month/Year, e.g. 31/01/2006

Current Date & Time	<p>This displays the current date and time on the camera.</p> <p>If it's not correct, click the Change button to modify the date/time settings. This button will open a sub-screen where you have 2 options:</p> <ul style="list-style-type: none"> • Set the camera's date and time to match your PC. • Enter the correct date and time.
Time Zone	<p>Choose the Time Zone for your location from the drop-down list.</p> <p>If your location is currently using Daylight Saving, enable the Adjust for daylight saving checkbox.</p> <p>You must UNCHECK this checkbox when Daylight Saving finishes.</p>
Network Time Protocol	<p>Enable or disable the Time Server feature as required.</p> <p>If Enabled, the Network Camera will contact a Network Time Server at regular intervals and update its internal timer.</p>
NTP Server Address	<p>Enter the address for the desired NTP server.</p>
Update	<p>The Schedule determines how often the Network Camera contacts the NTP Server.</p> <p>Select the desired options.</p>
LED Operation Privacy Button	<p>Enable this if you want to use this function.</p> <p>If Enabled, click the <i>Privacy</i> button will stop uploading the stream without turning the camera off. Click the button one more time to continue uploading. The default is Enabled.</p>

Network Screen

This screen is displayed when the *Network* menu option is clicked.

The screenshot shows the 'Network Screen' for a 'Network Camera'. The interface has a light blue background and a sidebar on the left with various menu options. The main content area is divided into sections for different network settings.

Navigation: Home | View Video | Logout

Network Camera

Setup

- System
- Network**
- Wireless
- DDNS
- Video & Audio**
- Video & Audio
- Video Access
- User Database
- Event**
- Motion Detection
- E-Mail
- FTP
- HTTP
- Event Trigger
- Administration**
- Maintenance
- Status
- Log

Internet Connection Type: Obtain Address Automatically (DHCP)

DNS Server Address: Obtain DNS server address automatically
 Use the following DNS server address

Secondary Port: Enable HTTP Secondary Port 1024 (1024-65535)

RTP/RTSP:

- RTSP Port:** 554 (554,1024-65535)
- RTP Data Port:** 5000 (mobile phone only)
- Max RTP Data Packet:** 1400 bytes (400-1400)

Multicast RTP/RTSP: Enable Multicast

- Video Address:** 224.2.0.1
- Video Port:** 2240 (1024-65534; Even Value)
- Audio Address:** 224.2.0.1
- Audio Port:** 2242 (1024-65534; Even Value)
- Time to Live:** 16 (1-255)

UPnP: Enable Discovery
 Enable Traversal (Port Mapping)

QoS: Enable QoS Mode (for Video and Audio)

Buttons: Save Cancel Help

Figure 30: Network Screen

Data - Network Screen

Network	
Internet Connection Type	<p>There are 3 connection types:</p> <ul style="list-style-type: none"> • Obtain Address Automatically (DHCP): If selected, the Network Camera will obtain its IP address and related information from a DHCP Server. Only select this option if your LAN has a DHCP Server. • Static IP Address: If selected, you must assign the following data to the Network Camera. <ul style="list-style-type: none"> • IP Address - Enter an unused IP address from the address range used on your LAN. • Subnet Mask - Use the same value as PCs on your LAN. • Default Gateway - Use the same value as PCs on your LAN. • PPPoE (PPP over Ethernet): This is the most common login method, widely used with DSL modems. Normally, your ISP will have provided some software to connect and login. This software is no longer required, and should not be used. <ul style="list-style-type: none"> • Username - The user name (or account name) provided by your ISP. • Password - Enter the password for the login name above.
Obtain DNS server address automatically	<p>If selected, the Network Camera will use the DNS address or addresses provided by the DHCP server. This option is only available if the IP address setting is <i>Obtain an IP address Automatically</i>.</p>
Use the following DNS server address	<p>Primary DNS server - Use the same value as PCs on your LAN. Normally, your ISP will provide this address.</p> <p>Secondary DNS server - This is optional. If entered, this DNS will be used if the Primary DNS does not respond.</p>
Secondary Port	<p>This sets the port number for HTTP (Web) connections to the Camera, whether for administration or viewing video.</p> <p>The secondary port can be used for DDNS, other service and when more than 2 cameras are in use.</p> <p>If enabled, you can connect using either port 80 or the Secondary port. You must enter the Secondary port number (between 1024 to 65535) in the field provided.</p> <p>Note that when using a port number which is not 80, you must specify the port number in the URL. For example, if the Camera's IP address was 192.168.1.100 and the Secondary port was 1024, you would specify the URL for the Camera as follows:</p> <p style="text-align: center;">http://192.168.1.100:1024</p>

RTP/RTSP	<p>The RTSP (Real Time Streaming Protocol), a standard for connected client(s) to control streaming data (MPEG-4) over the World Wide Web. Enter the RTSP Port number (between 1024 and 65535) in the field provided. The default RTSP Port is 554.</p> <p>The RTP (Real Time Transport Protocol), an Internet protocol for transmitting real-time data such as audio and video.</p> <p>Max RTP Data Packet field will let users limit the size of the file. Enter the desired value between 400 and 1400.</p> <p>Note: RTSP and RTP settings are for Mobile phone only.</p>
Multicast RTP/RTSP	
Enable Multicast	Enable the feature as required.
Video Address	Enter the address of video.
Video Port	Enter the desired value (between 1024 to 65534) in the field provided. The number you entered must be even values.
Audio Address	Enter the address of the audio.
Audio Port	Enter the desired value (between 1024 to 65534) in the field provided. The number you entered must be even values.
Time to Live	Enter the desired length of time, if the packets fail to be delivered to their destination within. The Time to Live you entered must be in-between 1 to 255.
UPnP	
Enable Discovery	If enabled, the Network Camera will broadcast its availability through UPnP. UPnP compatible systems such as Windows XP will then be able to detect the presence of the Network Camera.
Enable Traversal	If enabled, HTTP connections (from your Web Browser or the Viewer and Recorder utility) can use secondary port instead of port 80 (the standard HTTP port) to access the camera.
QoS	
Enable QoS Mode	If enabled, the throughput level (for Video and Audio) is guaranteed through QoS (Quality of Service).

Wireless Screen (Wireless Model Only)

This screen is displayed when the *Wireless* menu option is clicked.

Figure 31: Wireless Screen

Data - Wireless Screen

Wireless Network	
WSC PIN Code	It displays the WSC PIN code number for the camera.
Network Type	This determines the type of wireless communication used by the Network Camera. <ul style="list-style-type: none"> • If you have an Access Point, select <i>Infrastructure</i>. • Otherwise, select <i>Ad-hoc</i>.
SSID	This must match the value used by other devices on your wireless LAN. The Default is ANY . Note! The SSID is case sensitive.
Domain	Select your region from the drop-down list.
Channel No.	<ul style="list-style-type: none"> • In <i>Infrastructure</i> mode, this setting is ignored. The Network Camera will use the Channel set on the Access Point. • For <i>Ad-hoc</i> mode, select the Channel you wish to use on your Network Camera. Other Wireless stations should use the same setting. • If you experience interference (shown by lost connections and/or slow data transfers) you may need to experiment with different channels to see which one is the best.

Security	
Security System	<p>Select the desired option, and then enter the settings for the selected method:</p> <ul style="list-style-type: none"> • Disabled - No security is used. Anyone using the correct SSID can connect to your network. This is default. • WEP - The 802.11b standard. Data is encrypted before transmission, but the encryption system is not very strong. • WPA/WPA2 Personal - Like WEP, data is encrypted before transmission. WPA is more secure than WEP, and should be used if possible. WPA Personal is the version of WPA which does NOT require a Radius Server on your LAN.
WEP	
Authentication Type	<p>Normally this can be left at the default value of "Automatic." If that fails, select the appropriate value - "Open System" or "Shared Key." Check your wireless card's documentation to see what method to use.</p> <p>Note: In <i>Infrastructure</i> mode, either setting will normally work, since most Access Points can use both methods.</p>
WEP Encryption	<p>Select the WEP Encryption level:</p> <ul style="list-style-type: none"> • 64 Bit Keys (10 Hex chars) • 128 Bit Keys (26 Hex chars) • 64 Bit Keys (5 ASCII chars) • 128 Bit Keys (13 ASCII chars)
Passphrase	<p>Enter a word or group of printable characters in the Passphrase box and click the "Generate Key" button to automatically configure the WEP Key(s). If encryption strength is set to 64-bit, then each of the four key fields will be populated with key values. If encryption strength is set to 128-bit, then only the selected WEP key field will be given a key value.</p>
WEP Keys	<ul style="list-style-type: none"> • Use the radio buttons to select the default key. • Enter the key value you wish to use. Other stations must have the same key values. • Keys must be entered in Hex. Hex characters are the digits (0 ~ 9) and the letters A ~ F. • Click <i>Clear Keys</i> to set the Keys to be blank.
WPA/WPA2 Personal	
Shared Key	<p>Enter the key value. Data is encrypted using a key derived from the network key. Other Wireless Stations must use the same network key. The PSK must be from 8 to 63 characters in length.</p>

DDNS Screen

Many Internet connections use a "Dynamic IP address", where the Internet IP address is allocated whenever the Internet connection is established.

This means that other Internet users don't know the IP address, so can't establish a connection.

DDNS is designed to solve this problem, as follows:

- You must register for the DDNS service with a DDNS service provider. The DDNS Service provider will allocate a Domain Name to you upon request.
- The DDNS settings on the **DDNS** screen above must be correct.
- The Network Camera will then contact the DDNS server whenever it detects that the Internet IP address has changed, and inform the DDNS server of the new IP address. (The *Check WAN IP Address* determines how often the Network Camera checks if the Internet IP address has changed.)

This system allows other internet users to connect to you using the Domain Name allocated by the DDNS service provider.

This screen is displayed when the **DDNS** menu option is clicked.

Figure 32: DDNS Screen

Data - DDNS Screen

DDNS	
Enable DDNS	Enable or disable the DDNS function, as required. Only enable this feature if you have registered for the DDNS Service with a DDNS Server provider.
Service Provider	Choose a service provider from the list.

Web Site Button	Click this button to open a new window and connect to the Web site for the selected DDNS service provider.
Domain (Host) Name	Enter the Domain Name (Host Name) allocated to you by the DDNS Server provider.
Account/E-Mail	Enter the login name for the DDNS account.
Password/Key	Enter the password for the DDNS account.
Check WAN IP Address	<p>Set the schedule for checking if the Internet IP address has changed. If the IP address has changed, the DDNS Server will be notified.</p> <p>NOTE: If the DDNS Service provided some software to perform this IP address update or notification, you should NOT use this software. The update is performed by the camera.</p>

Video & Audio Screen

This screen is displayed when the *Video & Audio* menu option is clicked.

If Mobile Streaming is enabled:

1. Mobile phone should be supported by 3GPP protocol.
2. Enter 554 for RTSP port number in the Network screen.
3. Enter the following address in the URL:
RTSP:// Router IP address / Access Code
4. Select 15 fps for Max Frame Rate.

The screenshot shows the 'Video & Audio' configuration page for a Network Camera. The page has a light blue background and a sidebar on the left with navigation links. The main content area is titled 'Video & Audio' and contains several sections of settings:

- MPEG-4 Settings:** Resolution (640*480), Video Quality Control (Constant Bit Rate: 256 Kbps, Fixed Quality: Very High), Max Frame Rate (30 fps).
- MJPEG Settings:** Resolution (640*480), Fixed Video Quality (Very High), Max Frame Rate (30 fps).
- Mobile Settings:** Enable Mobile Streaming.
- Video Adjustments:** Power Line Frequency (60Hz), White Balance (Auto), Lighting Condition (High Frame), Brightness (Normal), Sharpness (Normal).
- Options:** Enable Microphone, Enable Speaker, Flip, Enable Time Stamp, Enable Text Display, Audio Type (G.711 A-Law), Mirror (), and a text field containing 'RC80210FEBE7-SW TEST'.

At the bottom of the main area are 'Save', 'Cancel', and 'Help' buttons.

Figure 33: Video & Audio Screen

Data - Video & Audio Screen

MPEG-4 Settings	
Resolution	Select the desired video resolution format. The default resolution is set to 640*480.
Video Quality Control	<ul style="list-style-type: none"> • Constant Bit Rate: Select the desired bit rate. The default is set to 256 Kbps. • Fixed Quality: Select the desired option. The default fix quality is set to Very High.

Max. Frame Rate	Select the desired Maximum bandwidth for the video stream. Note that you can specify EITHER the Bandwidth OR the Frame Rate, not both. If the Bandwidth is defined, the frame rate will be adjusted as necessary to achieve the specified frame rate. The default value for bandwidth is 30 .
MJPEG Settings	
Resolution	Select the desired video resolution format. The default resolution is set to 640*480.
Fixed Video Quality	Select the desired fix quality. The default fix quality is set to Very High.
Max. Frame Rate	Select the desired Maximum bandwidth for the video stream. Note that you can specify EITHER the Bandwidth OR the Frame Rate, not both. If the Bandwidth is defined, the frame rate will be adjusted as necessary to achieve the specified frame rate. The default value for bandwidth is 30 .
Mobile Settings	
Enable Mobile Streaming	Enable streaming video for the mobile device by checking this checkbox.
Resolution	The default resolution is set to 160x120.
Video Quality Control	<ul style="list-style-type: none"> • Constant Bit Rate: Select the desired fix bit rate. • Fixed Quality: Select the desired option. The default fix quality is set to Normal.
Max. Frame Rate	Select the desired Maximum bandwidth for the video stream.
Access Code	Enter the 8-digit code (0~9) for accessing the live video from camera through cell phone connection.
Video Adjustment	
Power Line Frequency	Select the power line frequency (50Hz or 60Hz) used in your region, to improve the picture quality under florescent lighting.
White Balance	Select the desired option to match the current environment and lighting.
Lighting Condition	Select the desired option to match the current lighting condition.
Brightness	If necessary, you can adjust the brightness to obtain a better image. For example, if the camera is facing a bright light, the image may be too dark. In this case, you can increase the brightness.
Sharpness	Select the desired option for the sharpness. You can select a Sharpness value between -3 and 3.
Options	
Microphone	Enable audio by checking this checkbox. Using Audio will increase the bandwidth requirements slightly.
Audio Type	Select the desired audio type.
Speaker	Enable speaker sound by checking this checkbox.
Flip	This setting will have the image swapped top-to-bottom.

Mirror	This setting will have the image swapped left-to-right.
Time Stamp	If enabled, the current time will be displayed on the Video image.
Text Display	Enable this setting if you want text to be displayed on the Video image, and enter the desired text - up to 20 characters. This feature is often used to identify each camera when multiple cameras are installed.

Video Access Screen

This screen is displayed when the *Video Access* option is clicked.

The screenshot shows the 'Video Access' configuration page for a Network Camera. The page has a light blue background and a navigation menu on the left. The main content area is divided into several sections:

- User Access:** Contains a checkbox for 'Enable Security Checking'.
- Video Access:** Contains a checkbox for 'Enable Scheduled Video Access'.
- Access Schedule:** Features a large empty rectangular box and a 'Delete' button below it.
- Add New Schedule:** Includes a 'Day' dropdown menu (set to 'Every day'), 'Start Time' and 'End Time' fields with hour and minute dropdowns (both set to '00'), and 'Add' and 'Clear' buttons.

At the bottom of the main content area are 'Save', 'Cancel', and 'Help' buttons.

Figure 34: Video Access Screen

Data - Video Access Screen

User Access	
Enable Security Checking	<ul style="list-style-type: none"> If disabled (default) - No login required. Users do not have to provide a username and password when they connect to the camera for viewing video. If enabled - Require login. Users will be prompted for a username and password when they connect to the camera for viewing video. The camera administrator must use the "User Database" menu option to create the desired users.
Video Access	
Enable Scheduled Video Access	<ul style="list-style-type: none"> If enabled - Viewing video is available during the scheduled periods, and unavailable at other times. If this option is selected, you need to define a schedule. If no schedule is defined, this option is always disabled. If disabled - The option will remain disabled until you enable it. <p>Note that regardless of which setting is chosen, the Administrator can ALWAYS access the camera and view live video.</p>
Access Schedule	
Scheduled Periods	This displays all periods you have entered into the database. If you have not entered any periods, this list will be empty.

Delete	Use the Delete button to delete the selected item in the list.
Add New Schedule	
Day	Choose the desired option for the period.
Start Time	Enter the start time using a 24 hr clock.
End Time	Enter the end time using a 24 hr clock.
Add	Click this button to add a new period.
Clear	Use this button to clear the input fields.

User Database Screen

This screen is displayed when the *User Database* option is clicked.

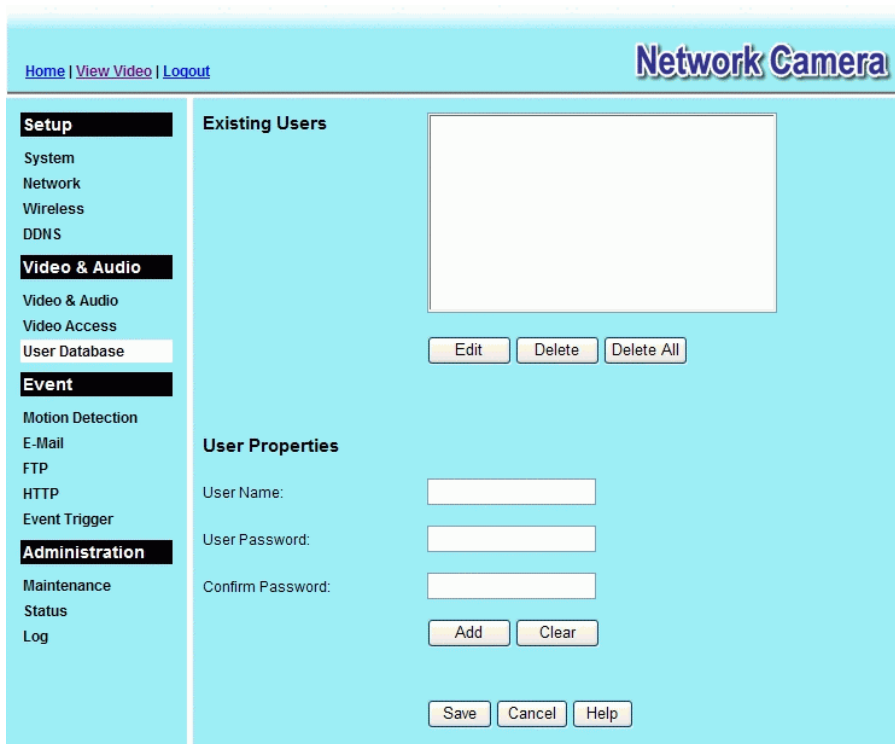


Figure 35: User Database Screen

Data - User Database Screen

Existing Users	
User List	This displays all users you have entered into the User database. If you have not entered any users, this list will be empty. The maximum number of users is 20.
Edit, Delete, Delete All	Use these buttons to manage the user database.
User Properties	
User Name	Enter the name for the user here. <ul style="list-style-type: none"> Spaces, punctuation, and special characters must NOT be used in the name. The name is case insensitive (case is ignored), so you can not have 2 names which differ only by case.
User Password	The password for this user.
Confirm Password	Re-enter the password for the user, to ensure it is correct.
Add Button	Click this button to add a new user, using the data shown on screen.
Clear Button	Use this button to clear the input fields, ready to add a new user.

Motion Detection Screen

This screen is displayed when the *Motion Detection* option on the *Event* menu is clicked.



Figure 36: Motion Detection Screen

Data - Motion Detection Screen

Motion Detection	
Set Detection Areas	<p>You can set the full screen or selected areas of the video image to be examined.</p> <p>Note: Motion detection can be triggered by rapid changes in lighting condition, as well as by moving objects. For this reason, it should only be used indoors.</p>
Indicator/Threshold	<p>Administrator needs to adjust the relation between indicator and threshold for each area.</p>

E-Mail Screen

This screen is displayed when the *E-Mail* option on the *Event* menu is clicked.

The screenshot shows the 'E-Mail' configuration screen for a Network Camera. The interface includes a navigation menu on the left with categories like Setup, Video & Audio, Event, and Administration. The 'E-Mail' option is selected under the 'Event' category. The main configuration area is split into three sections: 'Primary SMTP Server', 'Secondary SMTP Server', and 'E-Mail Setup'. Each section has several input fields and a 'Port' dropdown set to '25'. The 'E-Mail Setup' section has three checkboxes for additional email addresses and a 'Subject' field. At the bottom, there are 'Save', 'Cancel', and 'Help' buttons.

Figure 37: E-Mail Screen

Data - E-Mail Screen

Primary/Secondary SMTP Server	
SMTP Server Address	Enter the address of the SMTP (Simple Mail Transport Protocol) Server to be used to send E-Mail.
Authentication	Select the desired Authentication type for the SMTP Server.
SMTP Login name	Enter your login name for the SMTP Server.
SMTP Password	Enter your password for the SMTP Server.
POP server name	Enter the name for the POP Server.
Show "From" as	Enter the E-Mail address to be shown in the "From" field when the E-Mail is received.
Secondary SMTP	Check the box to upload to the Secondary SMTP if the camera can not connect to the primary SMTP.

E-Mail Setup**E-mail Address**

Enter at least one (1) E-Mail address; the 2nd and 3rd addresses are optional. The E-Mail alert will be sent to the E-Mail address or addresses specified here.

Subject

Enter the desired text to be shown as the "Subject" for the E-Mail when it is received. Subject can not exceed 48 alphanumeric characters.

FTP Screen

This screen is displayed when the *FTP* option on the *Event* menu is clicked.

The screenshot shows the 'FTP Screen' in a web interface. The top navigation bar includes 'Home', 'View Video', and 'Logout'. The main title is 'Network Camera'. The left sidebar has several menu categories: 'Setup' (System, Network, Wireless, DDNS), 'Video & Audio' (Video & Audio, Video Access, User Database), 'Event' (Motion Detection, E-Mail, FTP, HTTP, Event Trigger), and 'Administration' (Maintenance, Status, Log). The 'FTP' option under 'Event' is highlighted. The main content area is divided into two sections: 'Primary FTP' and 'Secondary FTP'. Each section contains the following fields: 'FTP Server' (text input), 'Port' (text input with '21' pre-filled), 'Login Name' (text input), 'Password' (text input), and 'File Path Name' (text input). There is also a checkbox for 'Enable Passive Mode' in each section. Below the 'Secondary FTP' section, there is a checkbox labeled 'Secondary FTP (enable this if the camera can not connect to the primary FTP)'. At the bottom of the form, there are three buttons: 'Save', 'Cancel', and 'Help'.

Figure 38: FTP Screen

Data - FTP Screen

Primary/Secondary FTP	
FTP Server	Enter the address of the FTP Server.
Port	Enter the Port of the FTP Server to be connected.
Login name	Enter your login name for the FTP Server.
Password	Enter your password for the FTP Server.
Enable Passive Mode	Check the box to enable the Passive mode feature of the FTP.
File Path Name	Enter the file path/name of the FTP.
Secondary FTP	Check the box to upload to the Secondary FTP if the camera can not connect to the primary FTP.

HTTP Screen

This screen is displayed when the *HTTP* option on the *Event* menu is clicked.

The screenshot shows the 'HTTP Notification' configuration screen. On the left is a navigation menu with categories: Setup, Video & Audio, Event, and Administration. The 'Event' menu is expanded, and 'HTTP' is selected. The main area contains the following configuration options:

- Enable:** A checkbox that is currently unchecked.
- URL:** A text input field.
- Proxy Server Name:** A text input field with the label '(optional)' to its right.
- Port Number:** A text input field containing the value '80'.
- Method:** A dropdown menu with 'POST' selected.

At the bottom of the form are three buttons: 'Save', 'Cancel', and 'Help'.

Figure 39: HTTP Screen

Data - HTTP Screen

HTTP Notification	
Enable	Enable this checkbox to use the HTTP Notification.
URL	Enter the URL of your HTTP notification server.
Proxy Server Name	Specify the proxy server name in the provided field if the camera needs to pass through a Proxy Server to do the HTTP notification.
Port Number	Enter the port number for the proxy server.
Method	<p>Select the desired method of form data encoding.</p> <ul style="list-style-type: none"> Get - It should be used if and only if the form processing is independent, which typically means a pure query form. Generally it is advisable to do so. Post - If there are problems related to long URLs and non-ASCII character repertoires, which can make it necessary to use "POST" even for independent processing.

Event Trigger Screen

This screen is displayed when the *Event Trigger* option on the *Event* menu is clicked.

Figure 40: Event Trigger Screen

Data - Event Trigger Screen

Event Schedule	
Schedule List	<p>The Event Schedule shows all of the event types currently configured in the Network Camera, along with various information about their configuration, as listed below:</p> <ul style="list-style-type: none"> • Name - the descriptive event name set by the user. • Effective Time Frame - shows when the event at a set time will be triggered. • Trigger by - shows what kind trigger activate the event. • Action - shows what kind of the actions will be issued when the event been triggered
New Schedule	
Effective Time Frame	Choose the desired option for the period.
Start Time	Choose the desired start time using a 24 hr clock.
End Time	Choose the desired end time using a 24 hr clock.
Trigger Event	
Motion Detection	If enabled, movement in a motion detection window can be used to trigger events.

Interval	Select the desired option for the events interval. (* "0" = No Delay)
Actions	<ul style="list-style-type: none"> • E-Mail - If checked, an E-Mail (with "Attachment") will be delivered to the SMTP server. (SMTP Server must be configured on the E-Mail page.) • FTP - If checked, an FTP upload will be activated to the FTP server. (FTP servers must be configured on the FTP page.) • HTTP - If checked, an Instant Messaging (IM) will be delivered to the Jabber server. (Jabber server must be configured on the Instant Messaging page.)
Attachment Type	<ul style="list-style-type: none"> • JPEG Image: Frame Rate - Select the desired capture rate (1~5) for the JPEG image here. Pre/Post Capture - Select the desired length. The snapshot(s) of the JPEG image depends on this setting, and also the file size and degree of compression. • Video: Video Format - Select the desired type for the video file. Pre/Post Capture - Select the desired length. The size of the file depends on this setting, and also the Video size and degree of compression. <p>Note: The total length of Pre/Post Capture is 5 seconds that is limited by the flash size.</p>

Maintenance Screen

Home | [View Video](#) | [Logout](#) **Network Camera**

Setup
System
Network
Wireless
DDNS

Video & Audio
Video & Audio
Video Access
User Database

Event
Motion Detection
E-Mail
FTP
HTTP
Event Trigger

Administration
Maintenance
Status
Log

Administrator Login
Administrator ID:
Administrator Password:
Verify Password:

Firmware Upgrade
Upgrade File:

Backup & Restore
Backup Configuration File:
Restore Configuration File:

Restore Factory Defaults:
Restart Camera:

Figure 41: Maintenance Screen

Data - Maintenance Screen

Administrator Login	
Administrator ID	Enter the name for the Administrator here. Spaces, punctuation, and special characters must NOT be used in the name.
Administrator Password	The password for the Administrator.
Verify Password	Re-enter the password for the Administrator, to ensure it is correct.
Firmware Upgrade	
Upgrade File	Click the "Browse" button and browse to the location on your PC where you stored the Firmware file. Select this file.
Start	Click this button to start the Firmware. When the upgrade is finished, the Network Camera will restart, and this management connection will be unavailable during the restart.
Clear File Name	This does NOT stop the Upgrade process if it has started. It only clears the input for the "Upgrade File" field.

Backup & Restore	
Backup Configuration File	Click <i>Backup</i> button to save the current configuration information to a text file. It is suggested to backup the configuration file, in order to restore the camera easily.
Restore Configuration File	Click <i>Restore</i> button to reinitialize the camera to load the new updated software. Do this after loading the upgrade file.
Clear File Name	This does NOT stop the Restore process if it has started. It only clears the input for the "Restore Configuration File" field.
Restore Factory Defaults	Click <i>Defaults</i> button to reloads all default settings on the camera.
Restart Camera	Click <i>Restart</i> button to restarts the camera.

Status Screen

Figure 42: Status Screen

Data - Status Screen

System	
Device Name	This shows the name of the Network Camera.
Description	This shows the description of the Network Camera, such as location.
F/W version	The version of the current firmware installed.
Network	
MAC Address	The current IP address of the Network Camera.
IP Address	The IP Address of the Network Camera.
Network Mask	The network mask associated with the IP address above.
Gateway	The IP Address of the remote Gateway associated with the IP Address above.
Wireless (Wireless Model Only)	
WSC PIN Code	It displays the current WSC PIN code.

Network Type	This shows the Network Type currently in use (Ad-hoc or Infrastructure).
SSID	This displays the wireless SSID.
Channel	This shows the wireless channel currently used.
Security	The current security setting for Wireless connections.
Signal Strength	This shows the strength of the signal.
MPEG-4/MJPEG	
Resolution	The image size of the video stream.
Video Quality	This displays the image quality of the video stream.
Frame Rate	This displays the frame rate of the video stream.
Buttons	
Refresh	Update the log and any other data on screen.

Log Screen

This screen displays a log of system activity.

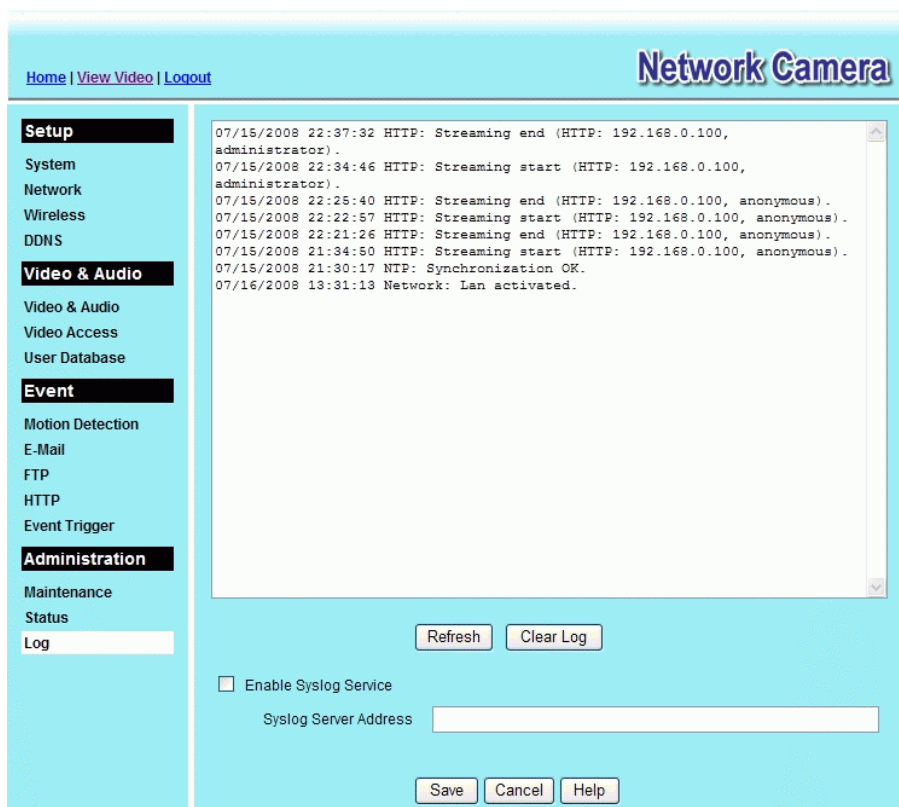


Figure 43: Log Screen

Data - Log Screen

Log	
System Log	This is a log of system activity.
Refresh Button	Click this to update the data shown on screen.
Clear Log	Click this button to restart the log.
Enable Syslog Service	Check the box to enable the System Log Server feature.
Syslog Server Address	Enter the address of the Syslog Server.

Windows

Viewing/Recording Utility

This Chapter describes how to use the supplied Utilities package to view and listen the live streams generated by the Network Camera.

Overview

The Utilities package includes following four functions:

- Monitor - to view/listen the live streams.
- Recorder - to record the live streams.
- Playback - to view the previous recordings.
- Configuration - to configure the Utilities such as adding camera, making recording schedules and setting required parameters, etc..

The Utilities must be installed in the Windows before they can be configured.

Installation

1. Insert the supplied CD-ROM into your drive. If the setup program does not start automatically, run **NetworkCamera.exe** in the root folder. You will see the *Welcome* screen shown below.



Figure 44: Welcome Screen

2. Click the *Install Utility* button to start the installation of the Utilities package.
3. Follow the prompts to complete the installation.

- After the installation, double click the Monitor icon on the desktop or click Monitor menu item in the Windows main program menu to launch the Utilities.

System Tray Icon

When started, the program will create an icon in the Windows system tray on the taskbar, as shown below.



Figure 45: System Tray Icon

You can right click the icon and it will provides a menu which allows you to launch Playback program, view the recording schedule details or even exit the Utilities package.

Main Screen

When Utilities launched, the Monitor Manager screen like the example below will be displayed.

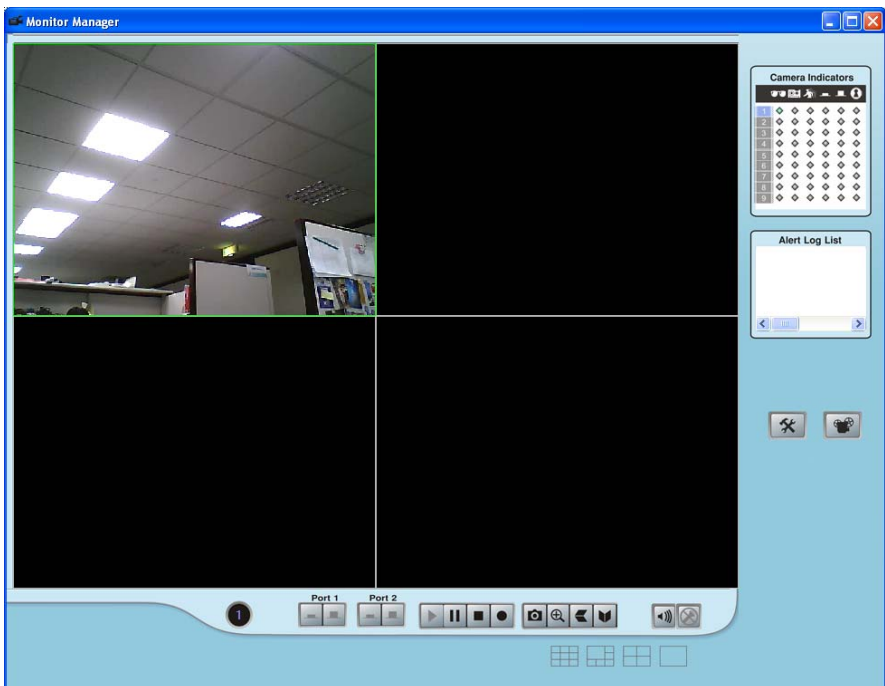


Figure 46: Main Screen

If no cameras have been defined and added to the Utilities, no video will be displayed. Utilities should be configured first to view the camera streams. See the following section for information on defining a camera. Note that each Camera is given a number (Channel Number).

Camera Setup

To define a camera and associate it with a *Channel Number*.

1. Click the *Setup* button on the main screen. You will see a screen like the example below.

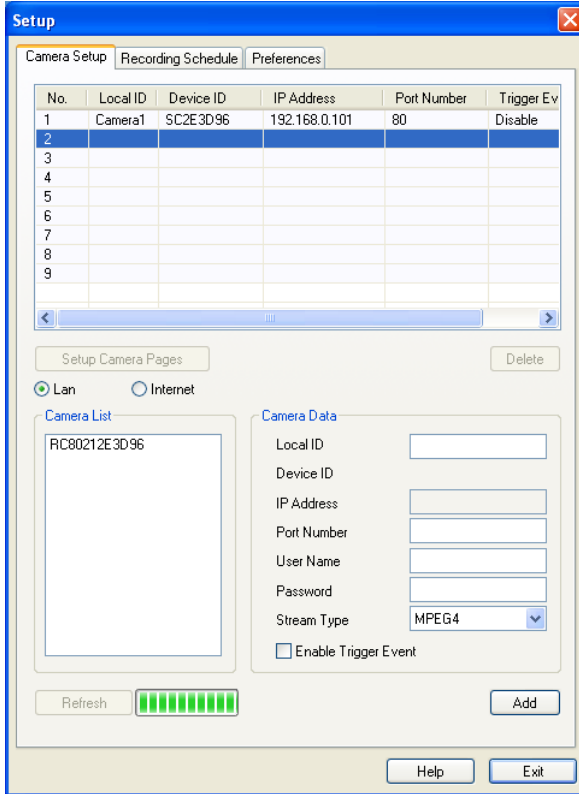


Figure 47: Camera Setup Screen

2. Select the desired *Channel* number in the left (*No.*) column.
3. There are 2 radio buttons, for *LAN* or *Internet*. The default is *LAN*. See the following section for details of the *Internet* option.
 - The *LAN* panel, on the left, displays all available Network Cameras found on your LAN automatically. This list can be updated by clicking the *Refresh* button. The progress bar appears for initial use or clicking the *Refresh* button.
 - The *Camera Data* panel, on the right, displays the data for the selected camera.
4. To associate a camera with the current *Channel*:
 - Select a camera in the list on the left.
 - It is required to enter the unique value of *Local ID*.
 - Check that the *Camera Data* shown on the right is correct. Enter associated User Name and Password.
Note: The **IP Address**, **Port Number**, **User Name** and **Password** can only be modified in the WEB UI instead of Camera Setup screen. You can click the *Setup Camera Pages* button to the WEB UI screens.
 - Click the *Add* button. The camera will now appear in the *Channel List*.

Camera Data - LAN

Local ID	This is the name you gave to this camera. This field must be entered.
Device ID	This is the default name for the Wireless Network Camera, and cannot be changed.
IP Address	The current IP address of the Wireless Network Camera.
Port Number	This will normally display "80". Only change this if requested to do so by the Wireless Network Camera Administrator.
Login	<p>The camera Administrator can require that users provide a username and password before being allowed to view the live video.</p> <ul style="list-style-type: none">• If the Administrator has not enabled this option, the <i>Login</i> fields can be left blank.• Otherwise, you must enter the username and password allocated to your by Administrator.
Stream Type	Select the desired type from the drop-down list.
Setup Camera Pages	Click this button to connect the Web-based interface of the Camera
Enable Trigger Event	Check this if you want the Utilities to enable motion triggered recording. Note: Event trigger setting in the camera must also be enabled to let the event triggered recording of Utilities take effect.



You can add the same Camera twice, once for the LAN (using the LAN IP address), and again for the Internet (using the Internet IP address). This will allow viewing the camera whether you are on the same LAN as the camera or in a remote location.

Adding Cameras on the Internet

If the Wireless Network Camera you wish to add is not on your LAN, but is available via the Internet, click the *Internet* button. You will see a screen like the example below.

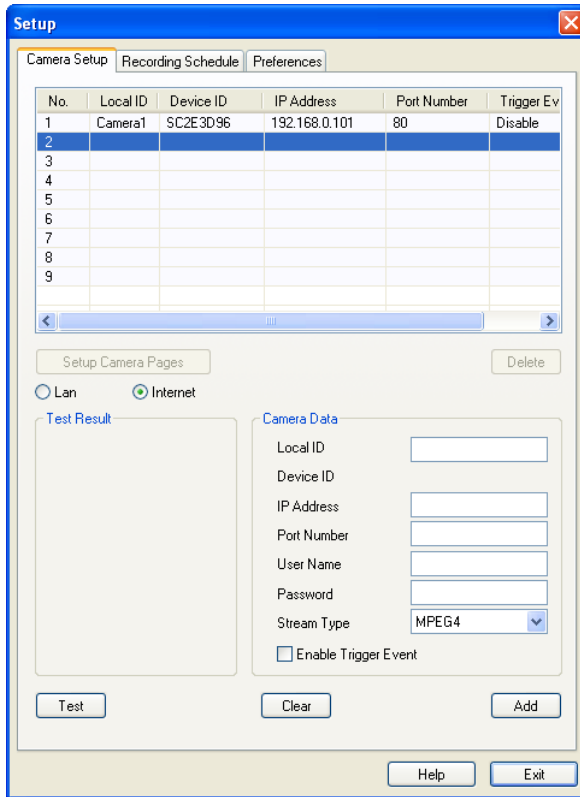


Figure 48: Add Camera from Internet

To associate a camera with the current *Channel*:

1. Enter the Local ID, IP Address, Port Number, User Name and Password in the *Camera Data* section manually.
2. Click the *Test* button to check that a connection and login can be performed successfully. Note that if the remote LAN does not currently have an Internet connection, or the remote camera is not on-line, the test will fail because no connection is possible.
3. Click the *Add* button. The camera will now appear in the *Channel List*.

Camera Data - Internet

Local ID	This is the name you gave to this camera. This field must be entered.
Device ID	This is the default name for the Wireless Network Camera, and cannot be changed. This field will be displayed automatically once a connection to the Wireless Network Camera has been established.
IP Address	Enter the Domain Name or Internet IP address of the desired Wireless Network Camera.

Port Number	Enter the port number used by the Wireless Network Camera for connections via the Internet. The Camera Administrator can advise you of the port to use. The default value is 1024.
Login	<p>The camera Administrator can require that users provide a username and password before being allowed to view the live video.</p> <ul style="list-style-type: none"> • If the Camera Administrator has not enabled this option, the <i>Login</i> fields can be left blank. • Otherwise, you must enter the username and password allocated to you by the Camera Administrator.
Stream Type	Select the desired type from the drop-down list.
Setup Camera Pages	Click this button to connect the Web-based interface of the Camera
Enable Motion Detection	<p>Check this if you want the Utilities to enable motion triggered recording.</p> <p>Note: Event trigger setting in the camera must also be enabled to let the event triggered recording of Utilities take effect.</p>

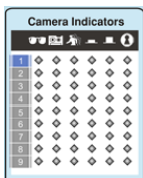


You can add the same Camera twice, once for the LAN, and again for the Internet. This will allow viewing the camera whether you are on the same LAN as the camera or in a remote location.

Monitor Program - for Streams Live Viewing

You can view live video in the Monitor screen. The built-in software can let you view up to 9 cameras on a single computer screen at one central location.

The following table lists the icons displayed on the Monitor screen:



Channel (Camera) Selection.

Use this to select the desired Channel (Camera) by clicking on the top row. This panel also indicates the status of the camera.

- The **First column** indicates if the associated channel number has a configured camera or not.
Blue indicates a camera has been configured for the channel.
Gray indicates no camera is configured for the channel.
User can drag a blue button to a desired viewport to let the camera stream be displayed in the desired viewport.
- The **View** column indicates if the camera stream is being viewed.
Green indicates the configured camera is being viewed.
Gray indicates that no camera is configured or the configured camera is not connected to the Monitor.
- The **Instant Record** column indicates if a recording is in progress.
Gray indicates no recording.
Red indicates recording is in progress.
- The **Motion Detection** column indicates if Motion event detected in the associated channel.
Yellow indicates Motion Detection is in progress.
Gray indicates this feature is not enabled.
- The **I/O** columns indicate if there is any I/O type triggered event detected in the port 1/2.
Yellow indicates there is an I/O type trigger event detected.
Gray indicates there is no new I/O type trigger event detected.
When user clicks on the Alert Log List, all the trigger event indicators such as motion, I/O for the associated focused channel will turn to gray.
- The **PIR** column indicates if there is any PIR triggered event detected.
Yellow indicates there is a PIR trigger event detected.
Gray indicates there is no new PIR trigger event detected.



Alert Log List.

It displays the list of triggered events, if any, for the focused viewport.



Setup. Click this button to open the Utilities configuration program.



Playback. Click this button to launch the Playback program, which allows you to browse through the previously saved recordings. Please see the "Playback Program - for Streams Playback" section for details.



Channel Indicator. This indicates the current channel (camera).



Play. Use this to re-start viewing, after using the *Stop* or *Pause* button.



Pause. Use this to temporarily stop the playing of focused viewport.



Stop. This will terminate the connection to the camera, halting both the viewing and the instant recording (if in progress).



Record. Click this to start recording the current stream. While recording, this button will be red. To stop recording, click the Stop button. To pause the playing, press Pause button.



Snapshot. Click this to take a still image of the current video stream. The image format could be BMP or JPEG depending on user's selection.



Zoom Camera. A digital zoom-in feature is available. To zoom in a viewport:

1. Click this icon. Then move the mouse to the area to be magnified.
2. Left click the mouse to magnify the viewport to x2 rate.
3. Repeat steps 1) and 2) to magnify the viewport to x4 rate.
4. Click the icon again to back to normal viewport display rate.



Flip Video. Click this to have the image swapped top-to-bottom.



Mirror Video. Click this to have the image swapped left-to-right.



Sound On/Off. To turn On/Off the audio volume for the camera in focused viewport.



Microphone On/Off. To turn On/Off the audio upload function for the camera in the focused viewport.



Volume. If Sound/Microphone is enabled, you can right click the icon, then drag and drop to raise or lower the volume.



Screen Layout. Use this to select the number of Channels (Cameras) to be displayed on screen. Up to 9 cameras can be displayed.

Recorder Program - for Streams Recording

You can record the streams from camera by pressing the Record button in the Monitor program as mentioned in the "Monitor Program - for Streams Live viewing" section or by making schedules to let the recording happen on the arranged time period.

All the recorded streams are stored in files with a proprietary format and can be viewed via Playback program in the Utilities package.

If you want to change the default settings of recording parameters before doing any recording, please see the "Preferences" section for details.

Recording Schedule

To make recording schedules, click the Recording Schedule tab on the Setup screen. You will see a screen like the example below.

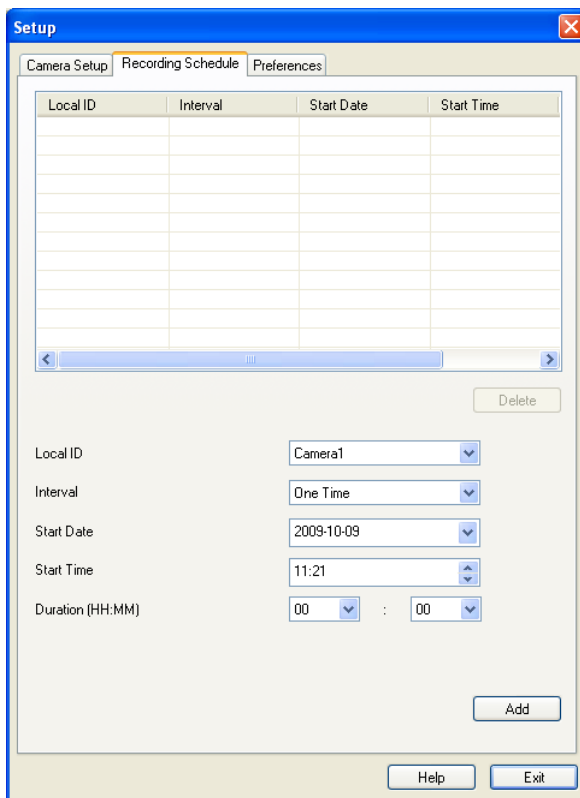


Figure 49: Recording Schedule

If necessary, change these settings to suit your environment. Please follow the steps below to make a schedule for recording:

1. Select a camera from the available camera list labeled Local ID.
2. Select a recording type from the Interval list box.
3. Select the recording time range from Start Date, Start Time and Duration list boxes.
4. Press Add button to add the schedule. There are up to ten schedules could be added for each camera.

You will see all the schedules in the recording list.

Preferences

Clicking the *Preferences* tab on the Configuration program to make change of default Utilities parameter settings.

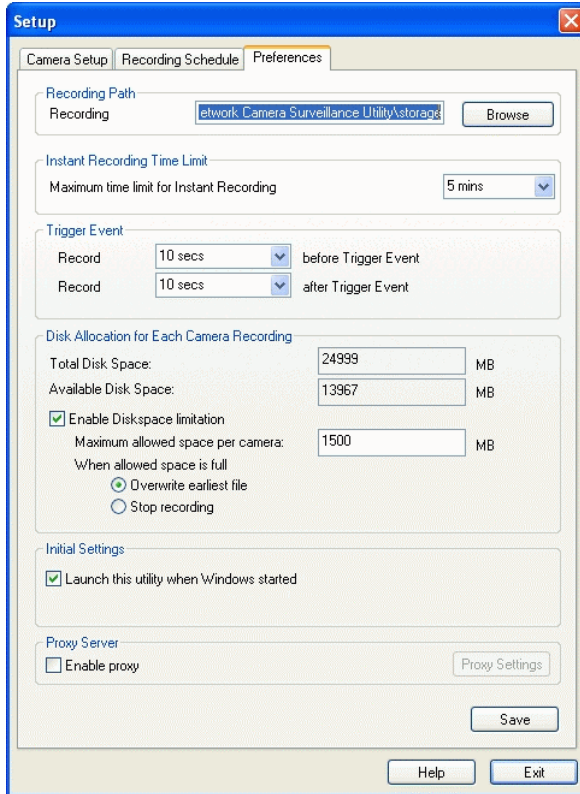


Figure 50: Preferences Screen

Data - Preferences

Recording Paths	
Recording	This is the Drive and Folder on your PC/Notebook where recorded files will be placed. You need a drive which has large amounts (Gigabytes) of free space. Click the Browse button to select the drive and folder if you want to change the default path. Note that file names for the recordings are automatically assigned, using an internal date-time coding rule.
Instant Recording Time Limit	
Maximum time limit for Instant Recording	This sets the maximum time period of a recording which is started by clicking the Record button on the Monitor main screen. If the recording is not stopped manually before the arranged time period elapsed, it will be terminated automatically when the end time hit.
Trigger Event	
Record before Trigger Event	Set the time so that the Recorder will make a pre-recording for at most the specified time range while a triggered event detected.

Record after Trigger Event	Set the time so that the Recorder will make a post-recording for at most the specified time range while a detected triggered event ends.
Disk Allocation for Each Camera Recording	
Total Disk Space	This displays the total size of the selected disk.
Available Disk Space	This displays the available space of the selected disk for storing recordings.
Enable Disk space limitation	Enable this if you wish to limit the disk space used by video recordings.
Maximum Allowed Space	Enter the maximum amount of disk space assigned to each camera for stream recordings.
When allowed space is full.	<p>Select the desired option for the behavior when the disk space limit is reached.</p> <ul style="list-style-type: none"> • Overwrite earliest file. The Recorder will overwrite the oldest file if the space is not enough for further recording. • Stop Recording. If the disk space limit is reached, no further recording is done.
Initial Settings	
Launch this utility when Windows started	Check this to have this utility start when Windows starts.
Proxy Server	
Enable proxy	If enabled, click the <i>Proxy Settings</i> button to configure the proxy server/exception list settings. Enter the address and port number for the proxy server in the proxy sub-screen.

Playback Program - for Recordings Playback

To access the saved recordings of the Cameras, click Playback button in the Monitor main screen, then you will see a screen like following.

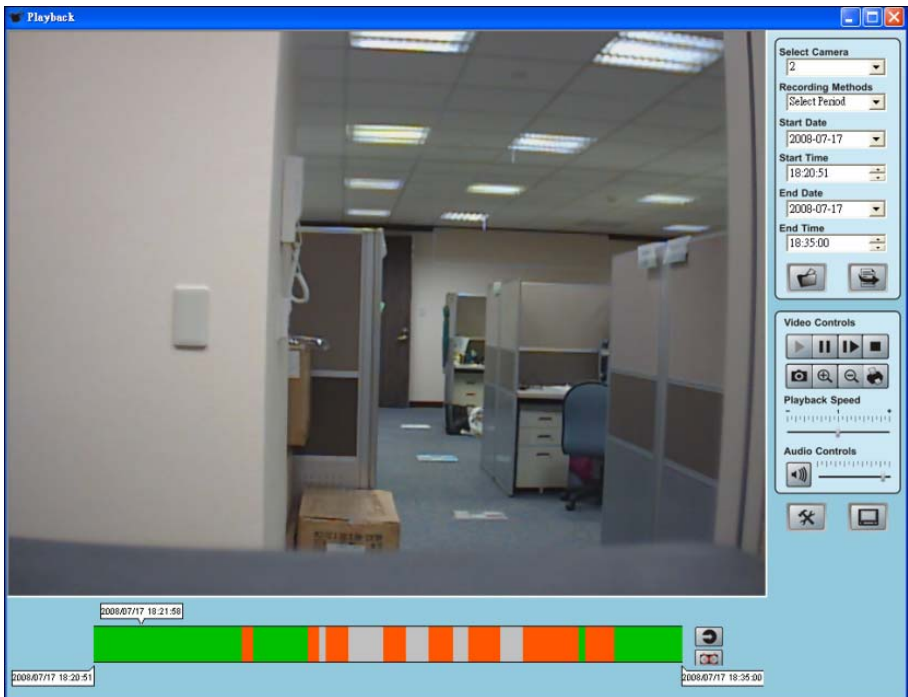


Figure 51: Playback Screen

Searching Recorded Streams Files

Select Camera. Select the desired camera from the list.

Recording Methods. Select the type of the recorded file from the drop-down list that you wish to view.

Start Date/Time. The start date and time the recordings will be searched

End Date/Time. The end date and time the recordings will be searched.

Load other Cameras. Click this button to load other recordings made from cameras outside of the current folder where the Utilities was installed.

Submit. Click this button to confirm the file searching criteria then the Playback will display a list of files matched with the search criteria on the recording bar.

Play. Use this to re-start viewing, after using the Stop or Pause button.

Pause. Use this to temporarily stop playing.

Frame by Frame. Playback will display the video stream in a one-frame per mouse clicking mode.

Stop. This will stop playing the recording.

Snapshot. Click this to take a still image of the current video.

Zoom In. To zoom in on a section of the window, click this icon.

Zoom Out. To zoom out on a section of the window, click this icon.

Print. Click this to print the current video stream.

Playback Speed. To play a recorded file, select the desired speed.

Audio Control. To play a recorded file, select the desired volume.

Delete Video. To delete a recorded file, select the file and click this button.

Recording Bar. It displays the recordings that match your requests.

- Green color indicates the schedule and instant recordings.
- Orange color indicates Motion triggered recordings.
- Blue color indicates I/O triggered recordings.
- Gray color indicates no recording found.

Available Operation on Recording Bar.

It is possible to drag an area on the Recording Bar to narrow the time range selection.

Chapter 7



Troubleshooting

This chapter covers the most likely problems and their solutions.

Overview

This chapter covers some common problems that may be encountered while using the Network Camera and some possible solutions to them. If you follow the suggested steps and the Network Camera still does not function properly, contact your dealer for further advice.

Problems

Problem 1: I can't connect to the Network Camera with my Web Browser to configure it.

Solution 1: It is possible that your PC's IP address is not compatible with the IP address of the Network Camera.
Use the Windows utility to configure the Network Camera with a valid IP address.

Problem 2: The Windows utility doesn't list any Network Cameras.

Solution 2: Check the following:

- The Network Camera is installed, LAN connections are OK, it is powered ON and startup is complete.
- Ensure that your PC and the Network Camera are on the same network segment. (If you don't have a router, this must be the case.)
- Ensure that your PC has the TCP/IP network protocol loaded. In Windows, this is done by using *Control Panel-Network*.
 - If an entry for TCP/IP -> Network card is not listed, use *Add - Protocol - Microsoft - TCP/IP* to add it.
 - You then need to select the new entry (TCP/IP -> Network card), click *Properties*, and configure the *IP Address* tab.
 - If your LAN has a DHCP Server, you can select "Obtain an IP Address automatically". Otherwise, you must select "Specify an IP Address", and enter values for *IP Address*, *Subnet Mask*, and *Gateway*. All devices on your LAN must use compatible values. Remember that each device needs a **unique** IP Address, and the **same** Subnet Mask.

Problem 3 When I try to connect to the Network Camera, I get prompted for a user name and password.

Solution 3 You SHOULD be prompted for a user name and password if trying to access the *Administration* menu.
Enter the *Administrator ID* and *Password* set on the *Maintenance* screen.
If you are just trying to view Video, the User Name/Password prompt

indicates that the Administrator has restricted access to specified users. Ask the Administrator for your User Name and Password.

Problem 4 **I can't connect to the Network Camera using a Wireless connection.**

Solution 4 1) If a LAN cable is connected to the LAN port, the Wireless interface is disabled. Only one interface can be active.

2) Check that your PC and the Network Camera have compatible Wireless settings.

- Mode (Infrastructure or Ad-hoc) must be correct.
- ESSID must match.
- WEP settings must match.
- In Ad-hoc mode, the Channel should match, although this is often not required.

Problem 5 **Video quality may suddenly deteriorate.**

Solution 5 This can happen when an additional viewer connects to the Network Camera, overloading the camera or the available bandwidth. The image size and quality can be adjusted to cater for the required number of viewers and the available bandwidth.

Problem 6 **The motion detection feature doesn't send me any E-mail.**

Solution 6 It may be that the SMTP (Simple Mail Transport Protocol) server used by the camera to send the E-Mail will not accept mail. (This is to prevent spam being sent from the server.). Try using a different SMTP server, or contact your ISP to see if SMTP access is being blocked.

Problem 7 **Using the motion detection feature, I receive E-Mails which don't show any moving objects.**

Solution 7 The motion detection feature doesn't actually detect motion. It compares frames to see if they are different. Major differences between frames are assumed to be caused by moving objects.

But the motion detector can also be triggered by:

- Sudden changes in the level of available light
- Movement of the camera itself.

Try to avoid these situations. The motion detection feature works best in locations where there is good steady illumination, and the camera is mounted securely. This feature can NOT be used if the camera is outdoors.

Problem 8 **The image is blurry.**

Solution 8 Try cleaning the lens, or adjusting the *Video Quality Control* setting on the *Video Image* screen. Video created by the lower settings will contain less detail; this is the trade-off for using less bandwidth.

Appendix A

Specifications



Network Camera

Model	SMC1010W
Dimensions	90mm (W) * 35mm (H) * 90mm (D)
Operating Temperature	0° C to 40° C
Storage Temperature	10° C to 80° C
Frequency Range	2412~2462MHz
Antenna Specification	Omni Antenna / Gain: 1.8 dBi
Modulation Technique	IEEE 802.11b mode:DSSS(1,2,5.5 and 11 Mbps) IEEE 802.11g mode:OFDM(6,9,12,18,24,36,48 and 54 Mbps)
Number of Channels	IEEE 802.11b/g mode:11 Channels
Power Adapter	5V=1A DC External

Regulatory Approvals

CE Approvals

The Network Camera and the Ethernet Network Camera meet the guidelines of the European Union and comply with the 99/5/EEC and RTTE 99/5EG directives, including the following standards:

- EN60950
- EN300 328-2
- EN301 489-1
- EN301 489-17

This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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Package source codes	License
bootloader	GPL
arm-linux 2.6.5	GPL
arm-linux-gcc 3.4.1 library	LGPL
DM9000 lan driver	GPL
Busy-box	GPL
boa-0.94.13a	GPL
ez-ipupdate	GPL
dhcpcd-1.3.22	GPL
boa-0.94-13e11	GPL
WPA_supPLICANT	GPL
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cron license

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Version 2, June 1991

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

IEEE 802.11b or 802.11g operation of this product in the Canada is firmware-limited to channels 1 through 11.

RSS-GEN 7.1.4:

User Manual for Transmitters with Detachable Antennas The user manual of transmitter devices equipped with detachable antennas shall contain the following information in a conspicuous location:

This device has been designed to operate with the antennas listed below, and having a maximum gain of [1.8] dB. Antennas not included in this list or having a gain greater than [1.8] dB are strictly prohibited for use with this device. The required antenna impedance is [50] ohms.

RSS-GEN 7.1.5

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

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Version 2.1, February 1999

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Appendix B



Streaming Video/Audio Solution

Overview

Streaming video is a sequence of "moving images" that are sent in compressed form over the Internet and displayed by the viewer as they arrive. With streaming, a Web user does not have to wait to download a large file before seeing the video or hearing the sound. Instead, the media is sent in a continuous stream and is played as it arrives.

Streaming Video/Audio through Internet Camera

To snapshot a JPEG image from the Internet Camera with specified resolution and quality:

[http://<ip>/img/snapshot.cgi?\[size=<value>\]\[&quality=<value>\]](http://<ip>/img/snapshot.cgi?[size=<value>][&quality=<value>])

Size = 1(160*128)

2(320*240)

3(640*480)

Quality = 1(Very low)

2(Low)

3(Normal)

4(High)

5(Very high)

To stream M-JPEG video from the Internet Camera (M-JPEG mode only)

<http://<ip>/img/mjpeg.cgi> or http://<ip>/img/main_mjpeg.htm

To stream video through the RTP/RTSP protocol from Internet Camera (MPEG-4 mode only)

<rtsp://<ip>/img/media.sav>

Note: Users need to specify the desired protocol in the players.

To snapshot a JPEG image (160*128, very low quality) through a mobile phone:

<http://<ip>/img/mobile.cgi>