NetComm®
Broadband Solutions

User Guide

NS380 and NS380W
Pan/Tilt Internet Camera

Contents

Introduction

Thank you for purchasing the NS380/NS380W Pan/Tilt Internet Camera, a camera device that can be connected directly to an Ethernet or Fast Ethernet network. Compared to the conventional PC Camera, the Pan/Tilt Internet Camera features a built-in CPU and web-based solutions that can provide a cost-effective solution to transmit real-time high-quality video images and sounds for monitoring. The Pan/Tilt Internet Camera can be managed remotely, accessed and controlled from any PC/Notebook over the Intranet or Internet via a web browser. The simple installation procedures and web-based interface allow you to integrate it into your network easily. With comprehensive applications supported, the Pan/Tilt Internet Camera is your best solution for remote monitor, high quality, and high performance video images.The NS380W also features wireless transmission based on the IEEE 802.11g standard.

About This Guide

This manual provides instructions and illustrations on how to use your Pan/Tilt Internet Camera and includes:

- **Introduction**, provides the general information on the camera.
- **Hardware Installation**, describes the hardware installation procedure for the camera.
- **Security**, explains the security feature of the camera.
- **Application of the Camera**, provides the illustrations of the camera's applications.
- **Using the Camera**, guides you through the configuration using the web browser.
- **IPView Pro**, helps you to install and use the software.

Please note that the illustrations or setting values in this manual are FOR YOUR REFERENCE ONLY. The actual settings and values depend on your system and network. If you are not sure about the respective information, please ask your network administrator or MIS staff for help.

Features and Benefits

Simple To Use

The Pan/Tilt Internet Camera is a standalone system with built-in CPU requiring no special hardware or software such as PC frame grabber cards. The Pan/Tilt Internet Camera supports both ActiveX mode (for Internet Explorer users) and Java mode (for Internet Explorer and Netscape Navigator users). Therefore, all that is required is a web browser software such as Internet Explorer 5.0 or above or Netscape 6.0 or above. Just plug and view the picture from your Pan/Tilt Internet Camera with a valid IP Address.

In addition, the camera's pan/tilt function allows you to adjust the camera for optimal viewing angle. You can tilt the camera right or left (up to 170/170 degrees), forward or backward (up to 45/90 degrees) using the Web Configuration Utility.

Support Variety of Platforms

The Pan/Tilt Internet Camera supports TCP/IP networking, SMTP e-mail, HTTP and other Internet related protocols, and can be utilized in a mixed operating system environment such as Windows, Unix, and Mac. It can be integrated easily into other Internet/Intranet applications.

Web Configuration

Applying a standard web browser, the administrator can configure and manage the Pan/Tilt Internet Camera directly from its own web page via the Intranet or Internet. Up to 64 user names and passwords are permitted with privilege settings controlled by the administrator.

Remote Utility

The powerful IPView Pro application assigns the administrator with a pre-defined user ID and password, allowing the administrator to modify the Pan/Tilt Internet Camera settings from the remote site via Intranet or Internet. When new firmware is available, you can also upgrade remotely over the network for added convenience. Users are also allowed to monitor the image, and take snapshots.

Broad Range of Applications

With today's high-speed Internet services, the Pan/Tilt Internet Camera can provide the ideal solution for live video images over the Intranet and Internet for remote monitoring. The Pan/Tilt Internet Camera allows remote access from a web browser for live image viewing and allows the administrator to manage and control the Pan/Tilt Internet Camera anywhere and any time in the world. Apply the Pan/Tilt Internet Camera to monitor various objects and places such as homes, offices, banks, hospitals, child-care centres, amusement parks and varieties of industrial and public monitoring. The Pan/Tilt Internet Camera can also be used for intruder detection; in addition, it can capture still images for archiving and many more applications.

Package Contents

Unpack the package and check all the items carefully. Your package should contain:

- One NS380 or NS380W Pan/Tilt Internet Camera (NS380W model shown)

- One metal mounting plate and screws

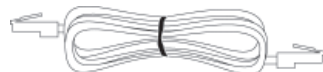- One Installation CD-ROM

- One User Guide

- One Package Contents Note

- One AC power adapter

- One RJ-45 Ethernet Cable

If any item is damaged or missing, please contact NetComm immediately. Also, keep the box and packing materials in case you need to ship the unit in the future.

System Requirements

For Networking

Local Area Network:

- 10Base-T Ethernet or 100Base-TX Fast Ethernet.

Wireless Local Area Network for NS380W only):

- IEEE 802.11g Wireless LAN.

For Accessing the Camera

Web Browser Users

- **Operating System:** Microsoft® Windows® 98SE/ME/ 2000/XP
- **CPU:** Intel Pentium II, 266 MHz or above
- **Memory Size:** 32MB (64MB recommended)
- **Resolution:** 800x600 or above
- Microsoft® Internet Explorer 5.0 or above (ActiveX & JAVA Mode – Image View for Windows OS and JAVA Mode – Image View for other OS); Netscape 6.0 or above (JAVA Mode – Image View)

IPView Pro Application Users

- **Operating System:** Microsoft® Windows® 98SE/ME/ 2000/XP.
- **CPU:** Intel Pentium III, 450 MHz or above
- **Memory Size:** 128 MB (256 MB recommended)
- **Resolution:** 800x600 or above

Physical Description

This section describes the externally visible features of the Pan/Tilt Internet Camera.

Front Panel

1. **Power LED**

   The Power LED is positioned on the right side of the Pan/Tilt Internet Camera's lens while facing the Pan/Tilt Internet Camera.

   A steady **BLUE** light confirms that the Pan/Tilt Internet Camera is powered on.

2. **Link LED**

   The Link LED is positioned on the right side of the Pan/Tilt Internet Camera's lens while facing the Pan/Tilt Internet Camera. It is located right of the Power LED

   A steady **ORANGE** light confirms that the camera has good connection to LAN connectivity.

   The LED will begin to flash to indicate that the Pan/Tilt Internet Camera is receiving/sending data from/to the network.

Rear Panel

1. Network Cable Connector

The Pan/Tilt Internet Camera's rear panel features an RJ-45 connector for connections to 10Base-T Ethernet cabling or 100Base-TX Fast Ethernet cabling (which should be Category 5 twisted-pair cable). The port supports the N-Way protocol and "Auto-MDIX" function, allowing the Pan/Tilt Internet Camera to automatically detect or negotiate the transmission speed of the network.

2. External Antenna (for NS380W only)

The rotatable external antenna allows you to adjust its position to obtain the maximum signal.

3. Reset Button

Reset will be initiated when the reset button is pressed once, and Power LED begins to flash.

Factory Reset will be initiated when the reset button is pressed continuously for three seconds or when Power LED begins to light up. Release the reset button and the Power LED will begin to flash, indicating the Pan/Tilt Internet Camera is changing to factory reset. When factory reset is completed, the Pan/Tilt Internet Camera will be set to default on channel 11 and SSID is set as "NULL String" (This default setting will let the Pan/Tilt Internet Camera connect to ANY access point on the infrastructure network). The IP address will also return to the default setting as 192.168.0.20.

4. DC Power Connector

The DC power input connector is located on the Pan/Tilt Internet Camera's rear panel, and is labelled DC5V with a single jack socket to supply power to the Pan/Tilt Internet Camera. Power will be generated when the power supply is connected to a wall outlet.

Hardware Installation

Attaching the Metal Mounting Plate

To attach the metal plate, remove the two rubber pads under the base of the camera firstly. Place the metal plate onto the camera base, and align the two holes of metal plate with two screw holes on the base. Secure the metal plate to the base with two screws (provided). Then, you can:

1. Install the camera to the ceiling using two ceiling screws (a); or,

2. Install the camera to the wall using two wall screws (b).

(a)   (b)

Base of Camera
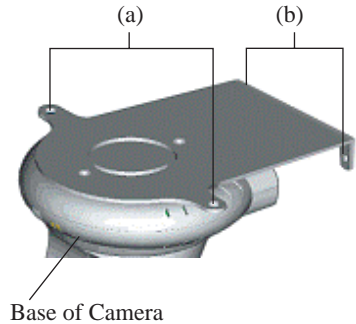
Connecting the Ethernet cable

Connect an Ethernet cable to the network cable connector located on the Pan/Tilt Internet Camera's rear panel, and then attach it to the network.
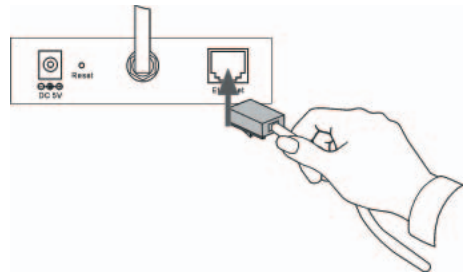
Attaching the Power Supply

Attach the external power supply to the DC power input connector located on Pan/Tilt Internet Camera's rear panel, and then connect it to your local power supply.
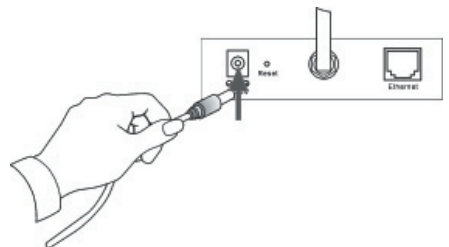
TIP: You can confirm power source is supplied from the LED indicators label Power on the Pan/Tilt Internet Camera is illuminated.

Security

To ensure the highest security and prevent unauthorized usage of the Pan/Tilt Internet Camera the Administrator has the exclusive privilege to access the System Administration for settings and control requirements to allow users the level of entry and authorize the privileges for all users. The Pan/Tilt Internet Camera supports multi-level password protection and access to the Pan/Tilt Internet Camera is strictly restricted to a defined user who has a "User Name" and "User Password" that is assigned by the Administrator.

The administrator can release a public user name and password so when remote users access the Pan/Tilt Internet Camera they will have the right to view the image transmitted by the Pan/Tilt Internet Camera.

> NOTE: Since the default settings are a Null String, it is highly recommended that you set the "Admin ID" and "Admin Password" when you use the Pan/Tilt Internet Camera for the first time. Once the ID and Password are defined, only the administrator has the access to the management features of the Pan/Tilt Internet Camera. This procedure should be done as soon as possible since the security features with the Pan/Tilt Internet Camera will not be enabled until the "Admin ID" and "Admin Password" is defined.
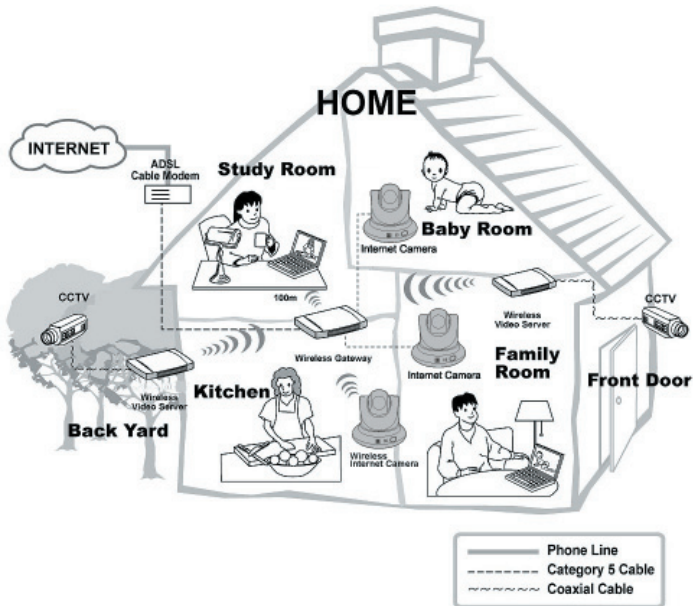
Using the Pan/Tilt Internet Camera

The Pan/Tilt Internet Camera can be used in wide variety of applications. With the built-in CPU, it can work as a standalone system that provides a web-based solution, transmitting high quality video images and sounds for monitoring purposes. It can be managed remotely, accessed and controlled from any PC desktop over the Intranet or Internet via a web browser. With the easy installation procedure, real-time live images will be available and, coupled with the IPView Pro application, you can further expand the scope of the Pan/Tilt Internet Camera.

The following section provides the typical applications for the Pan/Tilt Internet Camera along with the IPView Pro application, and also includes some basic knowledge to assist in the installation and configuration of the Pan/Tilt Internet Camera.

Usage Examples

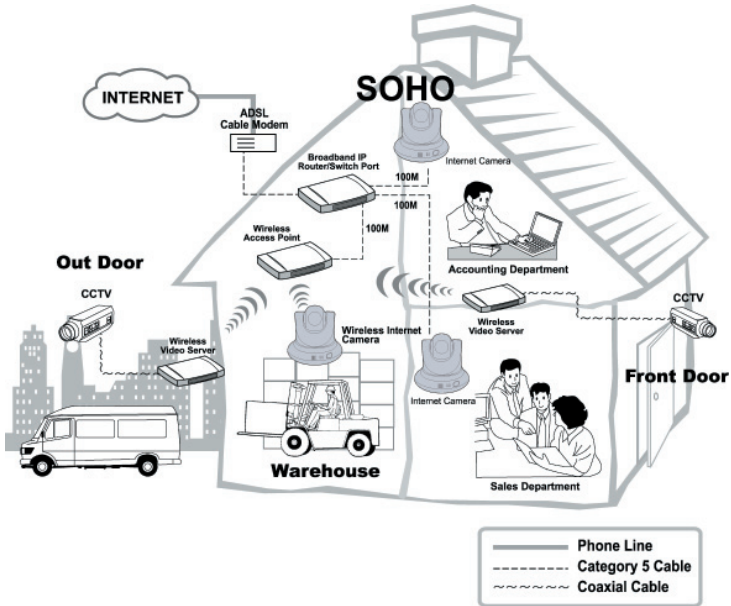- Monitoring of local and remote places and objects such as construction sites, hospitals, amusement parks, schools and day-care centres through the use of a web browser.
- Capture single frame images from the IPView Pro application.
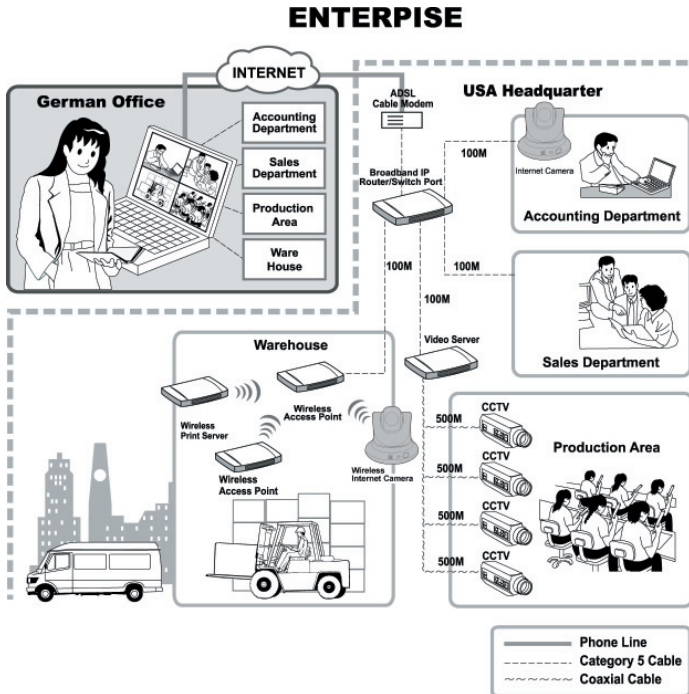- Configure the camera to upload image or send-mail messages with a single frame image.

Home Applications

SOHO Applications


Enterprise Applications

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Web Configuration Utility

You can access and manage the Pan/Tilt Internet Camera through: *1)* a web browser, and *2)* the enclosed software IPView Pro. This chapter describes the Web Configuration Utility, and provides the instructions on using the camera with a web browser.

Accessing the Camera with the Web Configuration Utility

The Pan/Tilt Internet Camera must be configured through its built-in Web-based Configuration. From the web browser, enter the default IP address to access the Welcome screen of the Pan/Tilt Internet Camera. To configure your Pan/Tilt Internet Camera, type ***http://192.168.0.20*** in the address box. The number is the default IP address of your Pan/Tilt Internet Camera. Then, press [**Enter**].

> NOTE: The computer's IP address must correspond with the camera's IP address in the same segment for the two devices to communicate. For example, you can change the IP address of your PC to 192.168.0.10 in order to access the camera.
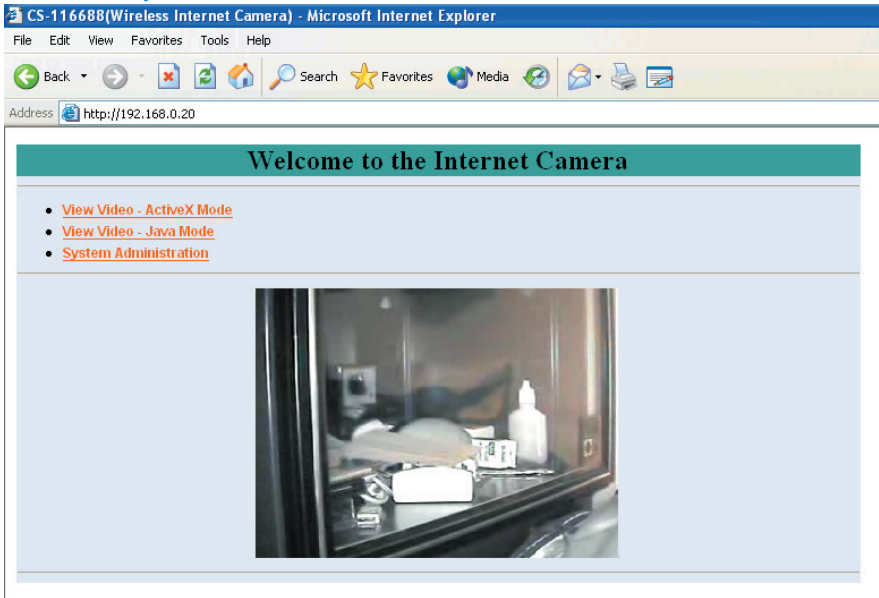
Welcome Screen of the Configuration Utility

After the default IP address is entered from the browser, the Pan/Tilt Internet Camera Welcome screen will appear with a still image. There will be three options to choose from to set-up and view your Pan/Tilt Internet Camera, including:

- View Video – ActiveX Mode
- View Video – Java Mode
- System Administration

System Administration

Under the Welcome screen of the Configuration Utility, click **System Administration** to enter the administration window that contains the settings required for the camera in the top menu bar, including **Management**, **Configuration**, **Tools**, **Help**, and **Home**.

> TIP: Once you have changed the settings in each option, click Save to store the settings, or Cancel to abandon, or Refresh to reload the status. During the configuration, whenever you click Home in the top menu bar will make you return to the Welcome window.

System Administration ⋯⋯⋙ Management

The Management window contains the information of your configuration. Click the items in the left column to view your settings, including: **System**, **Video**, **Wireless**, **Network**, and **User**.

Management	Configuration	Tools	Help	Home

Management
System
Video
Wireless
Network
User

Device Status

Camera Name	:	CS-116688
Location	:	
Model	:	Wireless Internet Camera
Firmware Version	:	3.00a (2004-05-27)
MAC Address	:	00 FF 11 11 66 88
IP Address	:	192.168.0.20

Ethernet Status

Link	:	Yes
Speed	:	100M bps
Duplex	:	Full Duplex

Refresh

System

Click the **System** item in the left column to display the device status of your camera.

Device Status

Camera Name	:	CS-116688
Location	:	
Model	:	Wireless Internet Camera
Firmware Version	:	3.00a (2004-05-27)
MAC Address	:	00 FF 11 11 66 88
IP Address	:	192.168.0.20

Ethernet Status

Link	:	Yes
Speed	:	100M bps
Duplex	:	Full Duplex

[Refresh]

Device Status

The information about the camera, including the Camera Name, Location, Model, Firmware Version, MAC Address and IP Address, can be found in this field.

Ethernet Status

You can monitor the networking status in this field, including the Link (network connection), Speed, and the Duplex mode.

Video

Click the **Video** item in the left column to display the video configuration of your camera.

Video Status

Video Resolution	:	320 X 240
Compression Rate	:	Medium
Frame Rate	:	Auto
Frame Size	:	7904 Bytes
Light Frequency	:	60 Hz

[Refresh]

Video Status

The video configuration about the camera, including the Video Resolution, Compression Rate, Frame Rate, Frame Size and IP Address, can be found in this field.

Wireless (NS380W only)

Click the **Wireless** item in the left column to display the information of the wireless LAN.

Wireless Status

Connection Mode	:	Infrastructure
Link	:	No
SSID	:	default (MAC : 00 00 00 00 00 00)
Channel	:	11
Transmission Rate	:	54M bps
WEP Encryption	:	Disable

[Refresh]

Wireless Status

The items in this field display the information of the wireless LAN, such as the Connection Mode (Infrastructure or Ad-Hoc), Link, SSID, Channel, Transmission Rate, and WEP Encryption.

Network

Click the **Network** item in the left column to display the information of the LAN.

Network Status

IP Address	:	192.168.0.20
Subnet Mask	:	255.255.255.0
Default Gateway	:	0.0.0.0
Primary DNS Address	:	0.0.0.0
Secondary DNS Address	:	0.0.0.0
Dynamic DNS	:	Disable
Secondary HTTP Port	:	Disable (Port : 81)
UPnP	:	Enable (IP : 0.0.0.0)

[Refresh]

Network Status

The items in this field display the information of the LAN, such as the IP Address, Subnet Mask, Default Gateway, Primary DNS Address, Secondary DNS Address, Dynamic DNS, Secondary HTTP Port, and UPnP.

User

Click the **User** item in the left column to display the user(s) information.

Active Users

	IP	Name	DateTime

[Refresh]

Active Users

The items in this field display the user(s) information, including the user(s) IP address, Name, and DateTime.

System Administration ⋯⟩ Configuration

The **Configuration** window contains commands for settings that are required to input key details to setup the camera for operation. Click **Configuration** in the top menu bar and the Configuration window will appear as below:

System

Click the **System** item in the left column to setup the basic configuration of your camera.

System Setting

In this field, you can configure the basic information of your camera.

- **Camera Name:** This field is used to enter a descriptive name for the device. The default setting for the Camera Name is *CS-xxxxxx*, where *xxxxxx* is the last six digit of the MAC Address. The maximum length is 32 (printable ASCII).
- **Location:** This field is used to enter a descriptive name for the location used by the camera (optional).
- **Admin:** This field is used to enter the administrator name along with the password to access the System Administration settings. Be sure to enter the password twice to confirm the details once in the *Admin Password* field and again in the *Confirm Password* field.

The default setting for administrator is blank space (Null String), and you need to key in the administrator name with a maximum length of 12 (printable ASCII) characters and enter the administrator password with a maximum length of 8 (printable ASCII) characters.

It is highly recommended to set the Admin ID and Admin Password as soon as possible to enable security option for the Pan/Tilt Internet Camera to function.

• LED Control: This option allows user to setup the LED illumination as desired. This feature provides the flexibility when surveillance activity is ON.

There are three options as follows:

Normal	Power - Steady On of the LED indicator. Link - Steady On of the LED indicator. When WLAN activity is present the LED indicator will flash steadily.
OFF	Power - LED indicator is off. Link – LED indicator is off.
Dummy	Power - Steady On of the LED indicator. Link - Steady On of the LED indicator with random flashing.

The default setting for the LED control is at *Normal*. When you have configured the LED control, the correct illumination will be set after 1 minute.

Video

Click the **Video** item in the left column to setup the image configuration of your camera.

Video Setting

In this screen, you can configure the basic information of your camera.

- **Video Resolution:** Select the desired video resolution format, including 160x120, 320x240 (default) and 640x480.

- **Compression Rate:** Select the desired compression rate with five levels from Very Low to Very High. Higher video compression rate will generate more compact file size with less video quality and vise-versa. The default setting is Medium.

- **Frame Rate:** Select the frame rate desired with default setting at Auto for optimal frame rate.

- **Brightness Control:** Adjust the brightness level with default setting at 64.

- **Contrast Control:** Adjust the contrast level with default setting at 64.

- **Saturation Control:** Adjust the saturation with default setting at 64.

- **Light Frequency:** Adjust the light frequency to suit your area of operation from the options either 50 Hz or 60 Hz (default).

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Wireless (NS380W only)

Click the **Wireless** item in the left column to setup the wireless LAN configuration of your camera.

Wireless Interface

- **Connection Mode:** Use this option to determine the type of wireless communication for your camera. There are two choices of Infrastructure mode and Ad-Hoc mode. The default setting is Infrastructure.

- **SSID:** The SSID (Service Set Identifier) is the name assigned to the wireless network. It will auto-detect and display the SSID of wireless network connected in this box (it displays default initially). This default setting will let the camera connect to ANY access point under the infrastructure network mode.

To connect the camera to a specific access point on the network, please make sure to set the SSID of the camera to correspond with the access point's SSID for communication. Type any string up to 32 characters long (spaces, symbols, and punctuation are not allowed) in the SSID (network name) field.

To connect the camera to an Ad-Hoc wireless workgroup, make sure to set the same wireless channel and SSID to match with the PC/Notebook's configuration for direct wireless communication.

- **Wireless Channel:** This pull-down menu provides the wireless channel for communication. A "channel" is a range of frequencies to be used in communication between the camera and access point in Infrastructure mode, or the camera and PC/Notebook in Ad-Hoc mode. Select the appropriate channel from the list provided depending on the regulatory region where the unit is sold. The default setting is at channel 11.
- **Transmission Rate:** Select the data transmit rate from this pull-down menu. The default setting is Fully Automatic.

Encryption

- **WEP Encryption:** Wireless network communications can be intercepted easily. WEP (Wired Equivalent Privacy) is an encryption method specified by the IEEE 802.11g standard to make any intercepted communications extremely difficult to interpret by unauthorized parties. The default setting for this option is Disable.
- **WEP Key Format:** To enable WEP Encryption, you should decide the encryption format first by selecting the ASCII or HEX option, and then input the WEP key (in the following Key 1~4 box).

> ASCII input format:
> ASCII format causes each character you type to be interpreted as an eight-bit value. All unaccented upper- and lower-case Western European characters that can be input through your keyboard's typing zone are valid. To setup a 64-bit WEP key, input 5 ASCII characters. For example, '12345'. To setup an 128-bit WEP key, input 13 ASCII characters. For example, '1234567890123'. These character counts result in bit counts of 40 and 104 respectively; the camera will automatically pad your input to a bit count of 64 or 128.
>
> HEX input format:
> Hex format causes each pair of characters you type to be interpreted as an eight-bit value in hexadecimal (base 16) notation. Only the digits 0 through 9 and the letters A through F (in upper or lower case) are valid. To setup a 64-bit WEP key, input 10 HEX format. For example, '3132333435', which is the same with ASCII input '12345'. To setup an 128-bit WEP key, input 26 HEX format. For example, '31323334353637383930313233', which is the same with ASCII input '1234567890123'. These character counts result in bit counts of 40 and 104, respectively; the Pan/Tilt Internet Camera will automatically pad your input to a bit count of 64 or 128.

- **Encrypt Data Transmissions Using:** Use this pull-down menu to decide to use Key 1, 2, 3 or 4 for encryption).
- **WPA-PSK:** This item is used to secure your wireless network in pre-shared key mode (8-63 ASCII or 64 HEX characters). If you enable this function, each user must enter a pass phrase to access the network.

Advanced Setting

In this field, you can setup more advanced configuration.

- **Beacon Interval:** This option defines time interval between two images sent.

- **Preamble:** A preamble is a signal used in wireless environment to synchronize the transmitting timing including Synchronization and Start frame delimiter. Please NOTE that if you want to change the Preamble type into *Long* or *Short*, please check the setting of access point.

- **Authentication Type:** *Open System* communicates the key across the network. *Shared Key* allows communication only with other devices with identical WEP settings. The default setting is *Both*.

Network

Click the **Network** item in the left column to setup the LAN configuration of your camera.

TCP/IP

The fields on this page represent the settings for the network in which the Pan/Tilt Internet Camera in installed. These are as follows:

*   **IP Address Mode:** This field provides your with three options to select the IP Address Mode:

    Fixed IP – You can select this option and enter the IP address directly. The default settings are:

*   IP Address – 192.168.0.20
*   Subnet Mask – 255.255.255.0
*   Default Gateway – 0.0.0.0

    Dynamic Address (DHCP) – If your network uses the DHCP server, select this option. According to this setting, the camera will be assigned an IP address from the DHCP server automatically. Every time when the camera starts up, please make sure that the DHCP server is set to assign a static IP address to your camera.

PPPoE – If your application requires a direct connection from an ADSL modem through the camera's RJ-45 LAN port, click this option and enter the User ID and Password into the respective boxes. (*You should have an ISP PPPoE account.*) The camera will get an IP address from the ISP as starting up.

- **DNS IP Address:** DNS (Domain Name System) server is an Internet service that translates domain names into IP addresses. Enter at least one DNS IP Address in this field.

- **Dynamic DNS:** The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname in any of the domains, allowing your computer to be more easily accessed from various locations on the Internet.

- **Second HTTP Port**: The default port for communication is via port 80, and you can change it according to your network configuration. Select *Enable* from the option and enter the desired port number in the following box.

- **UPnP**: UPnP is the architecture for pervasive peer-to-peer network connectivity of intelligent appliances, wireless devices, and PCs of all form factors. Check the *Enable* option to enable the function of your camera.

Internet Camera

User

Click the **User** item in the left column to add, edit and delete users for your camera.

User Access Control

- **Access Control:** The administrator has the authority to give permission for the privilege to control the device to users by selecting *Enable* or *Disable*. The default setting is *No*.

Define Users

Use this field to add or delete users for your camera.

- **Add User:** Enter the user name in this box, and enter the user's password assigned by the administrator. The maximum password length is 8 (printable ASCII).

  The administrator has the authority to give permission for the privilege to control the **Pan Tilt Control** and **Upload/E-mail Video** control to the users by selecting *Yes* or *No* to activate the Pan/Tilt control and Upload/E-mail Video.

  To add a new user's name, enter the necessary information first and click the **Add** button.

- **Delete User:** Select the user you want to delete from the pull-down menu, and then click the **Delete** button.

- **User List**: This list displays the current users status of your camera.

DateTime

Click the DateTime item in the left column to setup time and date for your camera, providing correct information for the remote users who might be thousands of miles away from the camera's location.

Date & Time Setting

Date & Time :	
	○ Synchronized with Time Server
	IP Address : [_____]
	Protocol : ⦿ NTP ○ Time
	TimeZone : [+ 0 ▾] Hours
	⦿ Set Manually
	Date : [2004-1-1] (Example : 2004-09-01)
	Time : [3:53:21] (Example : 06:12:35)

[Save] [Cancel]

Date & Time

You can set up time and date manually or automatically by selecting the *Synchronized with Time Server* option.

- **Synchronized with Time Server:** Select this option and the time will be based on GMT setting. The time will be synchronized every 10 minutes. When selecting this option, you have to enter the required information in the following fields:

   IP Address – Enter the IP Address or URL name (e.g. time.redhat.com) of the Time Server in this box.

   Protocol – Two options of NTP or Time are available for your selection to link with the Time Server. The default setting is NTP.

   TimeZone – Select the time zone for the region from the pull-down menu.

- **Set Manually:** Select this option to set the time manually. The system administrator must enter the date and time in the respective field manually.

54Mbps Wireless Night Vision Light Internet Camera

Upload

Click the Upload item in the left column to setup configuration for FTP server, time schedule and manual operation.

FTP Server

This field contains the following six basic settings for your FTP server.

- **Host Address:** The IP Address of the target FTP server.
- **Port Number:** The standard port number for the FTP server is Port *21*, and it's also the default setting. If the FTP server uses a specific port, please confirm the IT manager.
- **User Name:** Enter the user name in this field.
- **Password:** Enter the user password in this field to login the FTP server.
- **Directory Path:** Enter an existing folder name in this field, and the images will be uploaded to the given folder.
- **Passive Mode:** This function depends on your FTP server. Please check with your IT manager if the FTP server uses passive mode. The default setting is **No**.

Time Schedule

Select the "*Enable upload video to FTP server*" option and enter the relevant information, such as the schedule, video frequency and base file name.

- **Schedule:** You can 1.) Choose *Always* to always upload the video to FTP server, or 2.) Set the *Schedule* to manage the uploading task. In the Schedule option, you can set the *Day* and *Time Period* option.
- **Video Frequency:** There are two ways to set the video frequency: 1.) Set *Auto/1/2/3* frames per second, or 2.) Set the time in seconds for every frame.
- **Base File Name:** Enter the file name to make sure that the images could be saved as the base file name.
- **File:** Since you may not upload only one image to the FTP server, you can choose the filing rule, including *Overwrite*, *Date/Time Suffix*, and set up the *Sequence Number*.

Manual Operation

When you click the *Upload Video* button in view video screen, it will start to upload the image. The setting refers to *Base File Name* and *File* information above.

E-mail

Click the **E-mail** item in the left column to setup configuration for E-mail account, time schedule and manual operation settings.

E-mail Account

This field contains the following six basic settings for your FTP server.

- **SMTP Server Address:** SMTP (Simple Mail Transfer Protocol) is a protocol for sending e-mail messages between servers you need to input the mail server address in this field.

- **Sender e-mail Address:** Enter the e-mail address of the user who will send the e-mail.

- **Receiver e-mail Address:** Enter the e-mail address of the user who will receive the e-mail.

- **User Name:** Enter the user name in this field.

- **Password:** Enter the user password in this field to login receiver's mail server.

Time Schedule

Select the "*Enable-mail video to e-mail account*" option to set schedule to send e-mail. Please refer to the instruction in "**Upload**" section. The *Interval* option is to define time interval between two images sent.

Manual Operation

When you click the **E-mail Video** button in view video screen, it will start to e-mail image. The *Interval* option is to define time interval between two images sent.
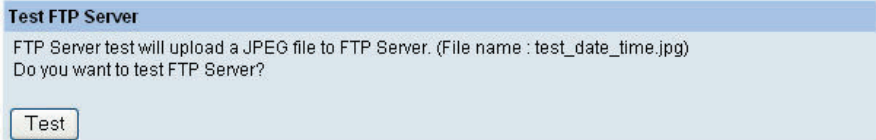
System Administration ⋯⟩ Tools

The **Tools** window contains commands for restarting the camera. Click **Tools** in the top menu bar and the Tools window will appear as below:
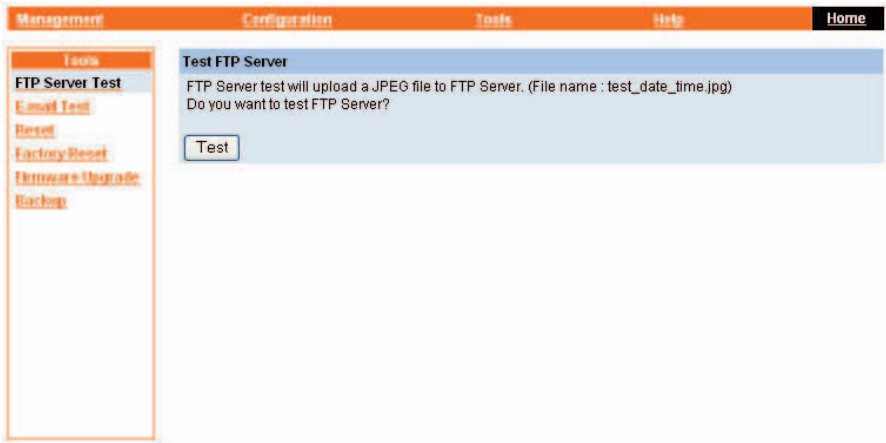
FTP Test

Click the FTP Test item in the left column to test your FTP account.
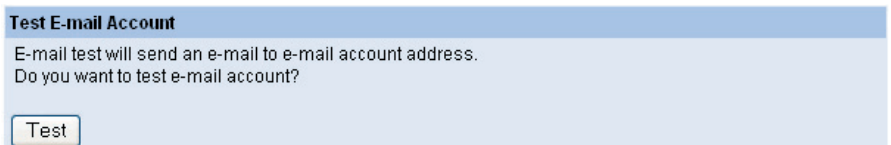

Test FTP Account

Click the **Test** button to test the FTP account.

E-mail Test

Click the **E-mail Test** item in the left column to test your e-mail account.

Test E-mail Account

Click the **Test** button to test the e-mail account you provided.

Reset

Do you really want to reset this device? Click the **YES** button from this option, and you can restart the camera just like turning the device off and on and saved settings are retained. If you do not want to reset the camera, exit this window without clicking **YES**.

Reset
Do you want to reset this device?

[Yes]

Factory Reset

Do you really want to factory reset this device? Click the **YES** button from this option, and you can resume all factory default settings for the camera. If you do not want to restore the factory settings, exit this window without clicking **YES**. Please NOTE that you have to configure the network settings again after a Factory Reset.

Factory Reset
Do you want to restore this device to factory default setting?

[Yes]

Firmware Upgrade

When new firmware is available, you can upgrade it through this window. Click the Browse… button to point to the firmware file, and then click Update to start upgrading.

Firmware Upgrade
Current Firmware Version and Date: 3.00a (2004-05-27)

Select a Firmware File : [   ] [Browse...]

[Upgrade] [Cancel]

Backup

Click the **Backup** item in the left column to backup the current configuration.

Backup Device Configuration to File
Do you want to backup the configuration to file?

[Backup]

Restore Device Configuration from File

Select a Configuration File : [   ] [Browse...]

[Restore] [Cancel]

## Backup Device Configuration to File

Do you really want to backup the configuration to file? Click the **Backup** button from this option, and you can save the current configuration to file.

Restore Device Configuration from File

You can resume the device configuration from saved file in the computer. Click the **Browse…** button to point to the file, and then click **Restore** to start restoring.

System Administration ····> Help

The **Help** window provides the basic information of the camera. Click **Help** in the top menu bar and the Help window will appear as below:

| Help | **About** |
| About | Wireless Internet Camera v3.00a |
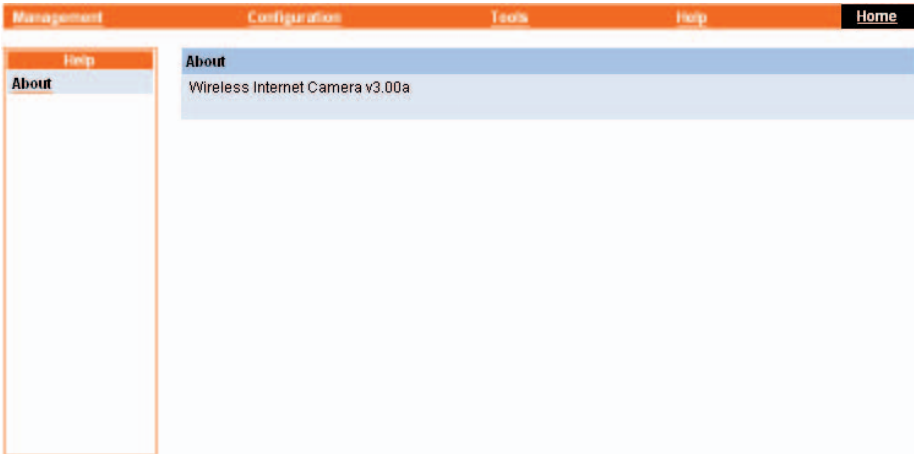
About

Displays the camera's model name and version.

Once the configuration is completed, click **Home** to return to the Welcome screen and select the desired View Video option either through **ActiveX Mode** or **Java Mode** as described in the next section.

Then, position the camera to the desired location appropriately for your purpose. Followed by adjustment of the camera focus, done manually by turning the lens clockwise or anti-clockwise to the desire image quality. Please refer to *Appendix F* for detailed instruction.

Viewing Video

To view video images from the browser, click View Video – ActiveX Mode or Java Mode from the Welcome screen to access the video images from your browser.
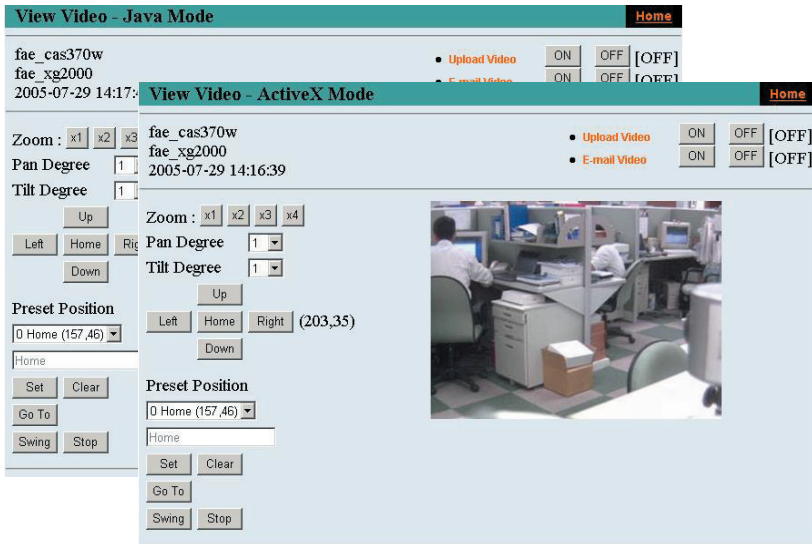

View Image – ActiveX Mode and Java Mode

Camera Name & Date/time: The Camera name and the current date/time will be displayed when the related information are entered under Configuration of Web Configuration Utility.

Uploading/E-mailing Video

In the View Video – ActiveX Mode or Java Mode, you are allowed to use the Upload Video and E-mail Video options. Simply click the desired selection **ON** or **OFF** to utilize the options for each of the functions.

Enable/Disable the Upload/E-mail Function
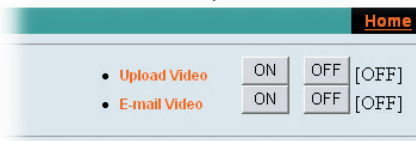
NOTE:

1.   Please refer to the appendix on how to install ActiveX, including 1.) Install to the Web Server, and 2.) Install to your Local PC.

2.   The administrator has the authority to set the upload/e-mail video function through the setting in the Upload/E-mail option under Configuration.

Controlling the Camera

You can control the camera's viewing angle through the control buttons on the left side of the viewing window.
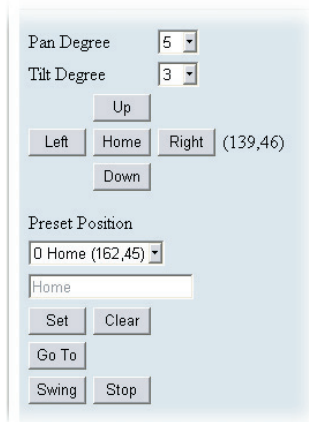
Control buttons

Adjusting the Viewing Angle

To adjust the camera's viewing angle, simply click the **Up/Down/ Left/Right** button. Then, you can easily move the camera's lens to focus on the object that you want. Clicking the **Home** button allows you return to the original position.

The **Pan Degree** and **Tilt Degree** options allow you to increase/ decrease the changing range (1~10) when you click the buttons.

Storing the Position

You can store the position(s) that you want to monitor, so that you can quickly move the camera's lens to focus on the object that you want. You can store up to 24 positions in the camera (the number "0" is for default position "Home"). To store the current position, select the setting number (1~24) from the pull-down list, and then click **Set**. You can enter the name for the position in the box beneath.

To remove the stored position, select the position that you want to remove, and then click **Clear**.

When you have stored the position in the camera, select the number (position) from the pull-down list, and then click **Go To**. The camera's lens will move to the position immediately.

Swinging the Camera

The camera can swing automatically between the stored positions. Once you have stored two (or more) positions in the camera, click **Swing** will have the camera swing from one position to another position. Click **Stop** to stop swinging.

Using IPView Pro with the Pan/Tilt Internet Camera

This chapter describes IPView Pro, which is a powerful software application designed with a user-friendly interface for ease of control and navigation requirements.

Installation

Step 1

Insert the CD-ROM into the CD-ROM drive to initiate the auto-run program. The menu screen will appear as below:
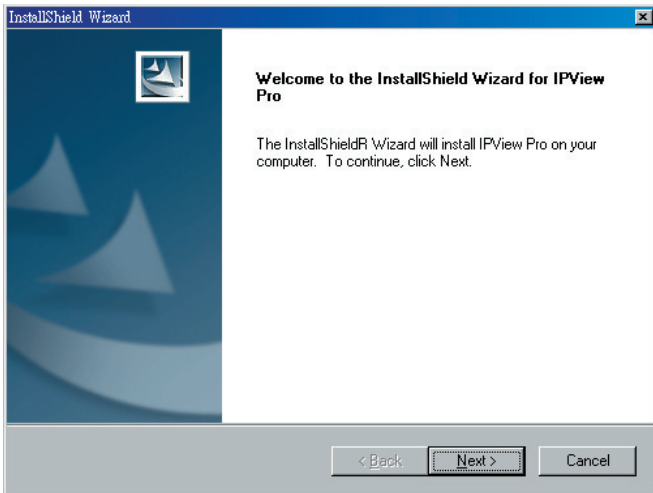

Step 2

Click the Setup Camera button. The following screen is presented:
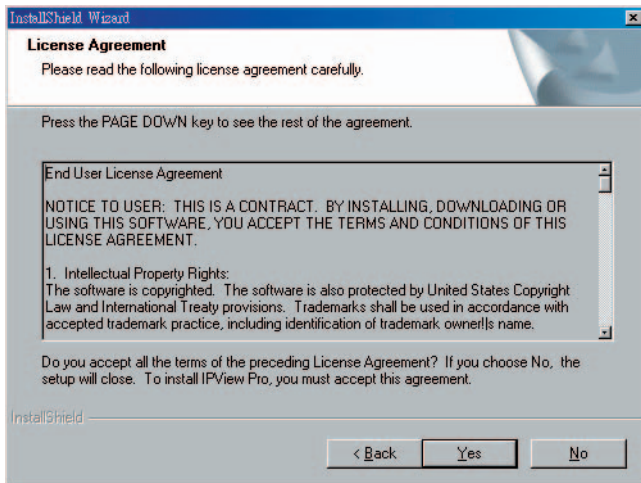

Click the Install IPView Pro Utility button.

Step 3

Click the **IPView Pro** item to activate the InstallShield Wizard. Click **Next** in the welcome screen.
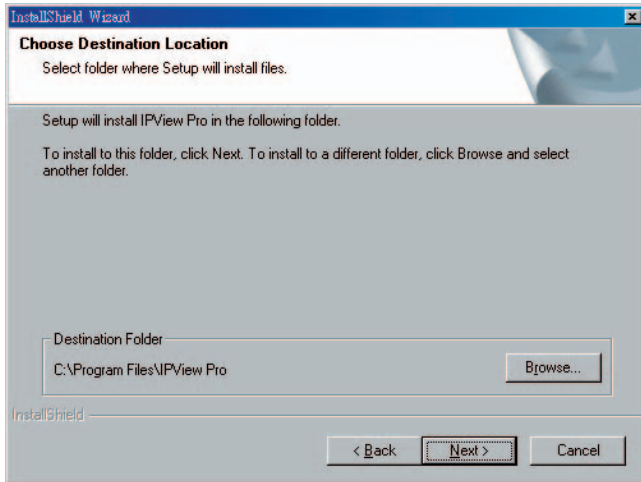

Step 4

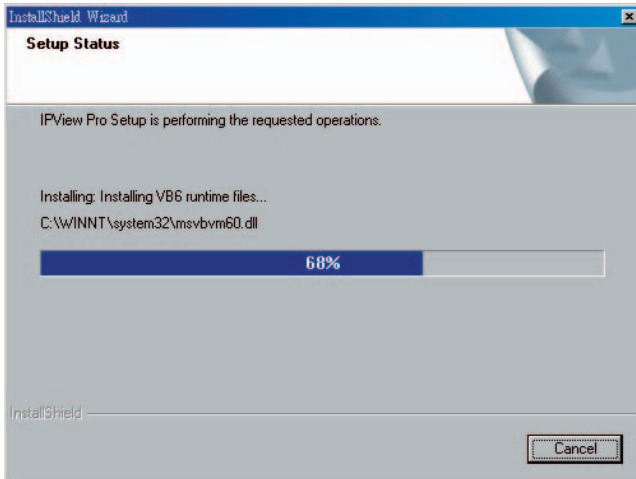Read and accept the License Agreement; then, click **Yes**.

Step 5

Choose the destination location. If no specific requirement, leave the default setting and click **Next**.

Step 6

The InstallShield Wizard starts to install the software, and the progress bar indicates the installation is proceeding.
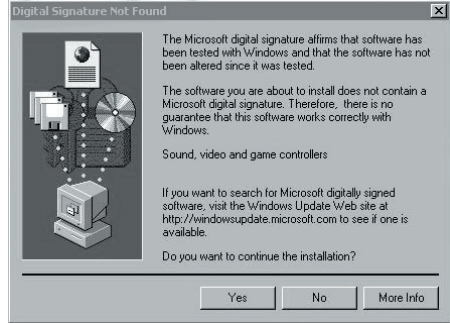
Step 7

If you use Windows® 2000/XP, it will appear a Digital Signature warning screen. Click **Continue Anyway** (Windows® XP) or **Yes** (Windows® 2000).
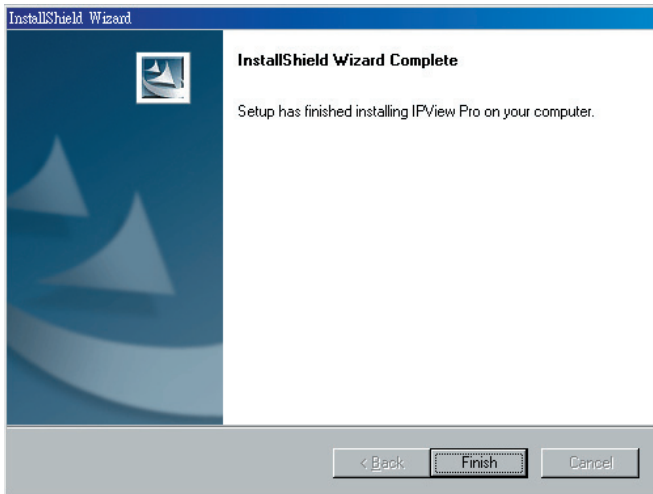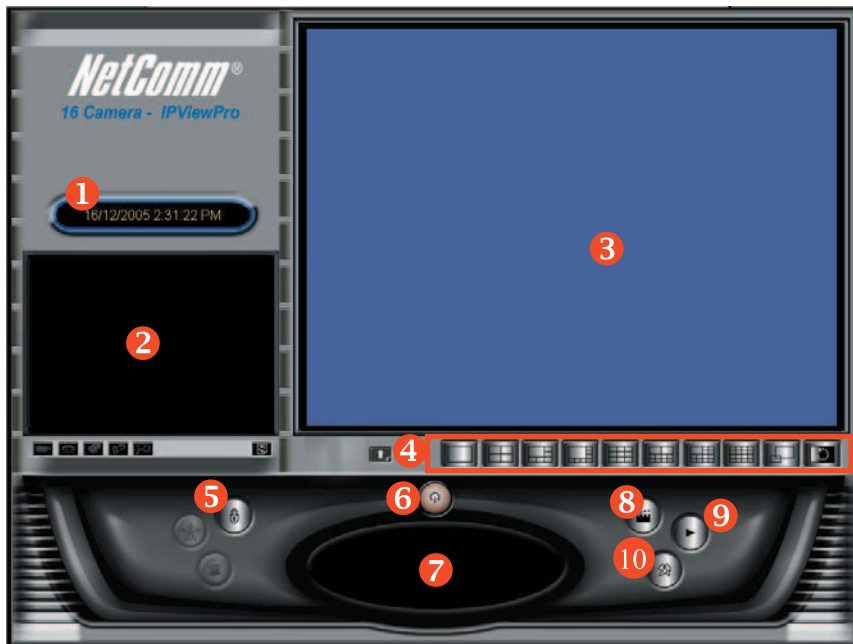
Windows® XP   **Windows® 2000**

Step 8

Click **Finish** to complete the installation.

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Getting Started

This section describes the User Interface of IPView Pro, with detailed procedures for using the application.

To launch IPView Pro, click **Start** > **Programs** > **IPView Pro** > **IPView Pro**. The main screen will appear as below:

NOTE: IPView Pro requires the system's resolution setting up to 1024x768. Please configure the resolution to 1024x768 or higher; otherwise, it may shows incomplete screen when launching the program.

Item Feature

NO.	Item	Description
❶	**Date/Time**	Show current date/time.
❷	**Status Mode Window**	Show the camera's status in this window. Click the Change Status Mode button ( ) on the right lower corner of the window to change the display mode: Camera list mode Camera information mode

③	**View Window**	Show the camera's view in this window.
④	**View Mode Buttons**	Select the view mode from these buttons.
		Show one camera in View Window.
		Show four cameras in View Window.
		Show six cameras in View Window with the first one as the major view.
		Show eight cameras in View Window with the first one as the major view.
		Show nine cameras in View Window.
		Show ten cameras in View Window with the first two as the major views.
		Show thirteen cameras in View Window with the first one as the major view.
		Show sixteen cameras in View Window.
		Show the selected camera in full screen view.
		Enable displaying the video views in circles.
⑤	**Key Lock Button**	Click to lock/unlock the camera. When locked, the user cannot operate any camera.
⑥	**Power Button**	Click to exit or minimize IPView Pro.
⑦	**Pan/Tilt Control Button**	When the camera is added, the Pan/Tilt control buttons will appear on the panel, as shown below: / / / / / / / : Click these buttons to adjust the camera's viewing angle to Up/ Down/Left/ Right/Left-Up/Left-Down/Right-Up/Right-Down. : Once you have saved two (or more) positions in the camera, click the Swing button to control the camera swinging from one position to another position. : Click the Home button to return the camera to the default position.
⑧	**Record Button**	Record video clip of the selected camera and save it in the computer. The storage position can be configured in System Configuration. When you click the button, you can select Manual Record, Schedule Record, or Motion Record.
⑨	**Play Button**	Play the recorded video file in the computer.
⑩	**System Configure**	Click to enter the System Configuration.

Using IPView Pro

Adding a Camera

To add a camera:

1. Click the **System Configure** button to enter the System Configuration.

   If you are not sure of the camera's IP address, you can click **Search** to search the available camera(s) within the network.
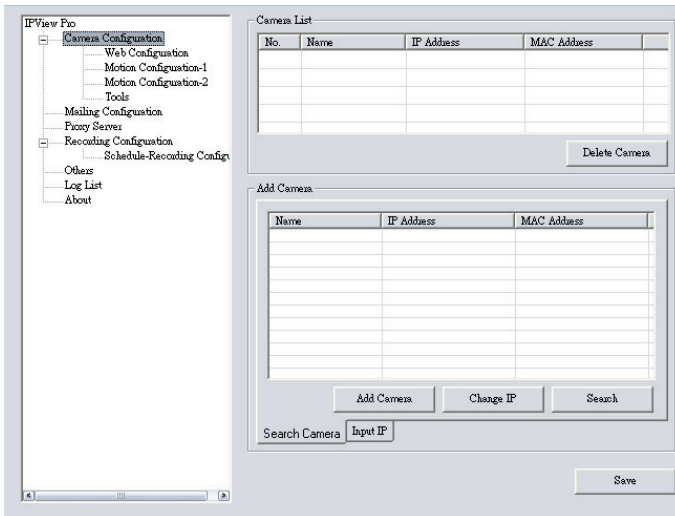
2. Select the camera you want by highlighting it, and then click **Add Camera**.
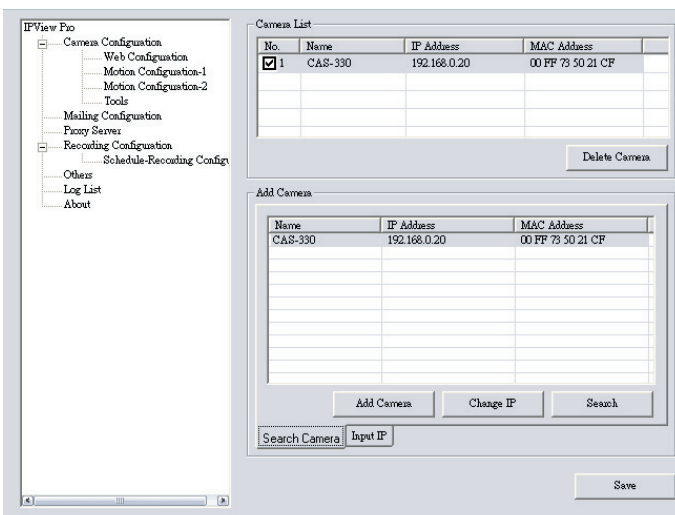
3. Click **Save**, and then click the **System Configure** button to return to View Window. The selected camera's video will be displayed now.

    Alternately, you can add a camera by entering the its IP address directly:
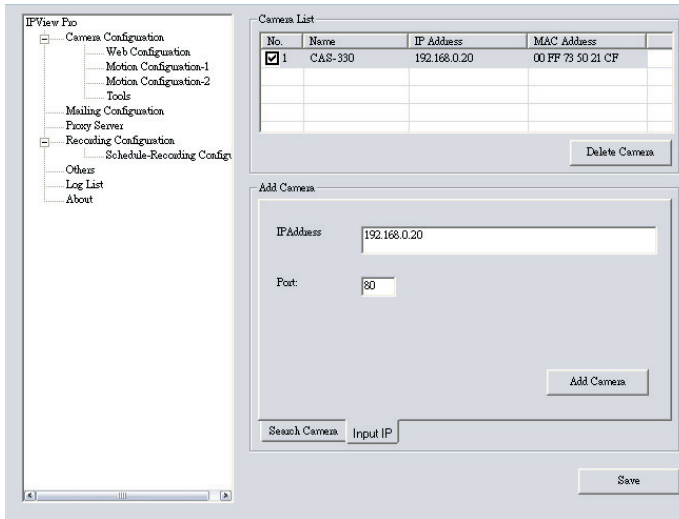
4. Select the **Input IP** tab.
5. Enter the camera's IP address (default: 192.168.0.20) and Port (default: 80), and then click **Add Camera**.
6. Click **Save**, and then click the **System Configure** button to return to View Window. The selected camera's video will be displayed now.

Removing a Camera

To remove the camera from the list:

1. Select the camera you want to remove.
2. Click **Delete Camera**.

Viewing a Camera

From the View Modes of the panel, you can select one-camera mode or other modes to display your video. IPView Pro allows a maximum of 16 cameras for viewing.

For example, if you use only one camera, select one-camera mode ( ), and the View Window will display the view as figure 1.

If there are four cameras, select four-camera mode ( ), and the View Window will display the view as figure 2.
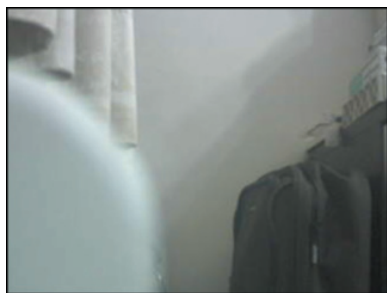
Figure 1.
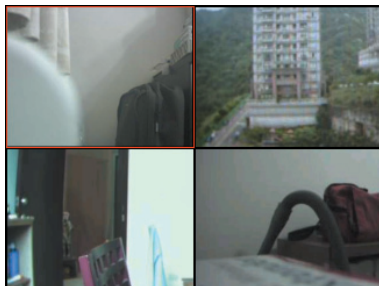
Figure 2.

Recording Video

IPView Pro allows you to record the video clip and save it in your computer through the following methods: **Manual Record**, **Schedule Record**, and **Motion Record**.

When you click the **Record** button and select **Manual Record**, it will start recording. Click the button again to stop. If you select **Schedule Record** or **Motion Record**, the system will record the video clip according to the settings in System Configuration.

Playing Recorded Video

The recorded video clips are saved in your computer, and can be played using Windows Media Player. To start playback, simply click the **Play** button on the panel, and the following dialog screen will appear, allowing you to select the file to playback.
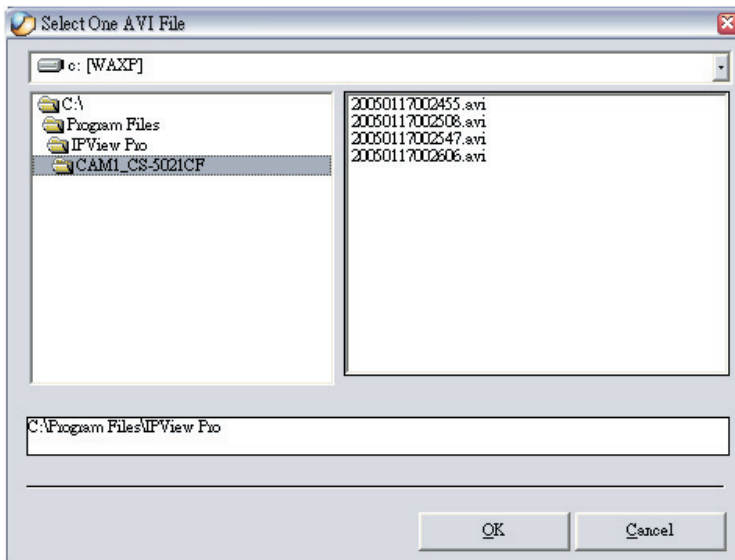
Select the recorded file in the computer, and then click **OK**.

Configuring the System

Clicking the **System Configure** button on the panel allows you to configure the system settings, and the **System Configuration Screen** will appear in the View Window as shown below. Once configured, click **Save** to save the settings, and then click the **System Configure** button again to exit configuration.
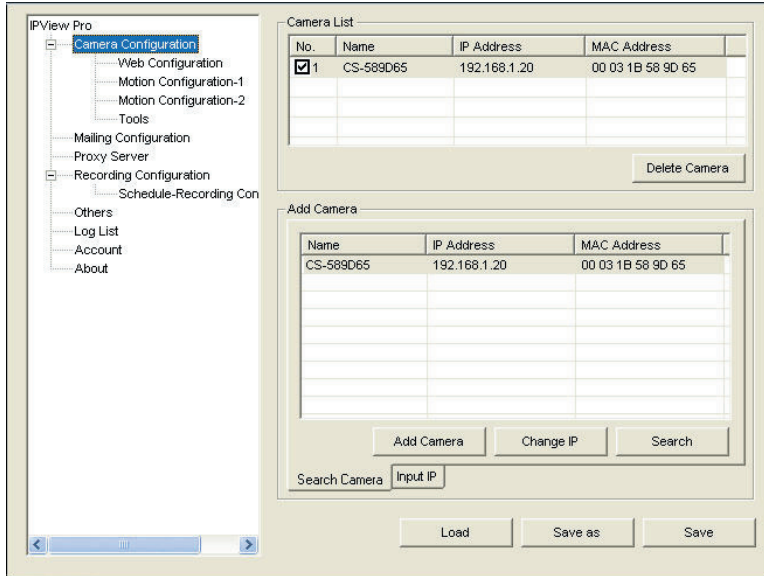
System Configuration Screen

Camera Configuration

In this field, you can add/delete the camera (as described in the previous section). Also, you can configure the following settings:

Web Configuration

In the left column, selecting the **Web Configuration** item will launch the Web Configuration Utility in View Window.
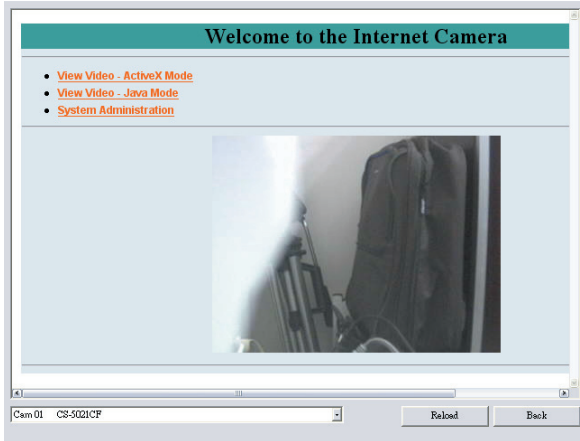
You can configure these settings according to the description in *Chapter 5, Using the Camera*. Click **Back** to exit the Web Configuration Utility.

Motion Configuration-1

The Motion Configuration-1 item provides the commands for motion detection control. Before configuring, you should select one camera from the pull-down menu.
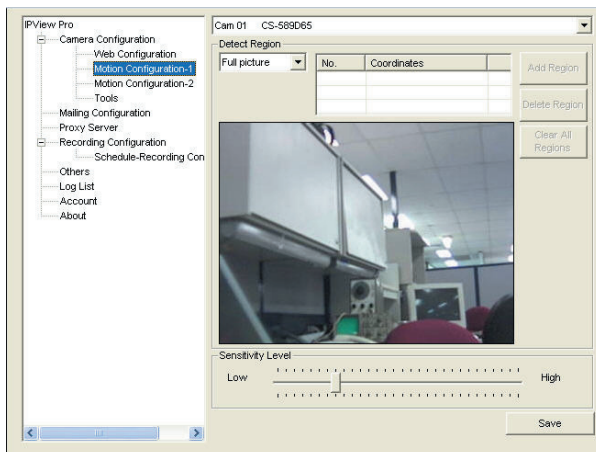
- **Detect Region:** When you select the Full picture option, the camera will monitor the whole area.

- **Sensitivity Level:** Move the slide bar to adjust the sensitivity level for detecting motion to record video.

Motion Configuration-2

The **Motion Configuration-2** item allows you to configure the alarm, e-mail notification and playing of a sound once motion is detected.
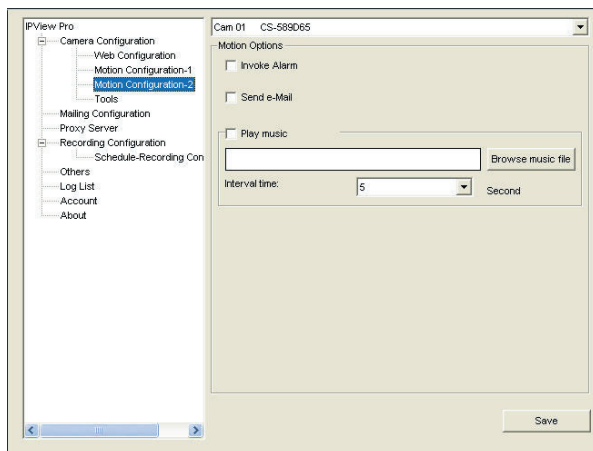
- **Invoke Alarm:** Select this option to enable alarm when some motion detected by the system.

- **Send e-mail:** When this option is checked, click the Mailing Configuration in the left column to enter the required information (see the following section).

- **Play music:** Click the Browse button to search for the WAV or MP3 file that will play when motion is detected. The Interval time field specifies how long the music will play for.

Tools

The **Tools** item allows you to reset the camera, reset to factory defaults, or update the camera's firmware.
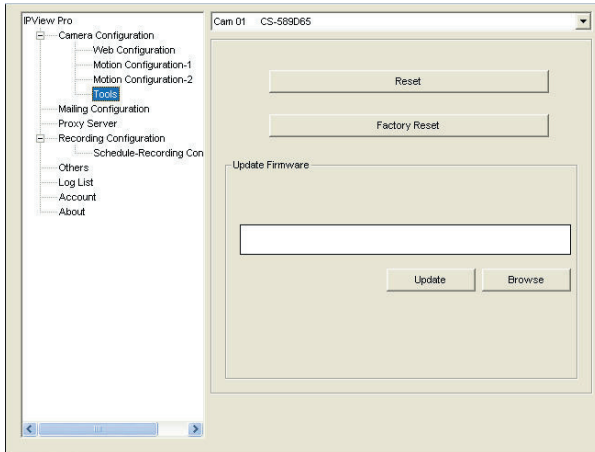
- **Reset:** Restore the original setting of your camera. Do you really want to reset this device? Click Yes in the pop-up dialog box to confirm.
- **Factory Reset:** Restore the factory default settings of the camera. Do you really want to factory reset this device? Click Yes in the pop-up dialog box to confirm.
- **Update Firmware:** When new firmware is available, you can upgrade it using this option. Click Browse to find the firmware file, and then click Update.

Mailing Configuration

When Motion Detection function is enabled and the **Send e-mail** option is checked, you should enter the required information in the respective fields.

- **Mail Server:** Enter the mail server address that is used to send your e-mail.
- **Mail From/To:** Enter the sender's/receiver's e-mail address.
- **Subject:** Enter the title of the e-mail.
- **User Name/Password:** Enter the user name/password to login the mail server.
- **Interval Time:** Enter a number in this box to setup the time (in second) to send E-mail regularly.

Proxy Server

Check the Proxy Server option and enter the required settings in the **Address** and **Port** boxes to enable and use the Proxy Server function.
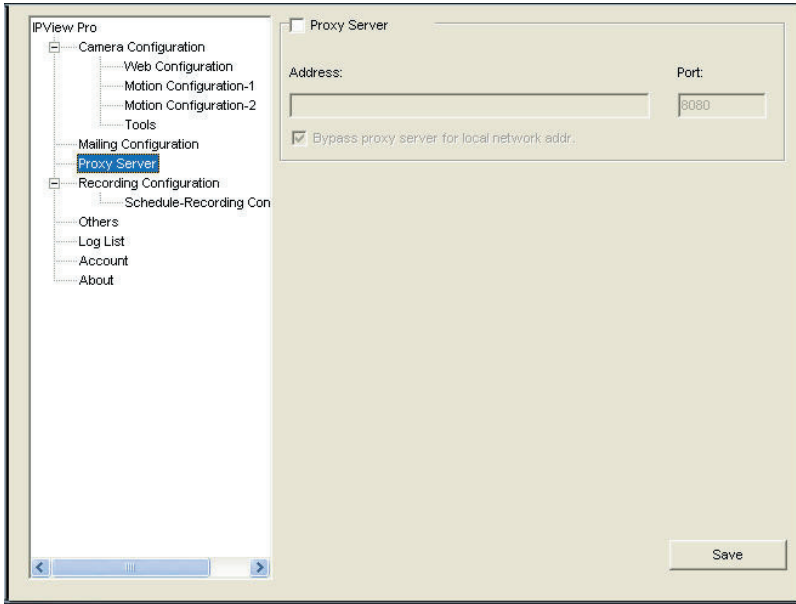
Recording Configuration

In this field, you can configure the storage settings.
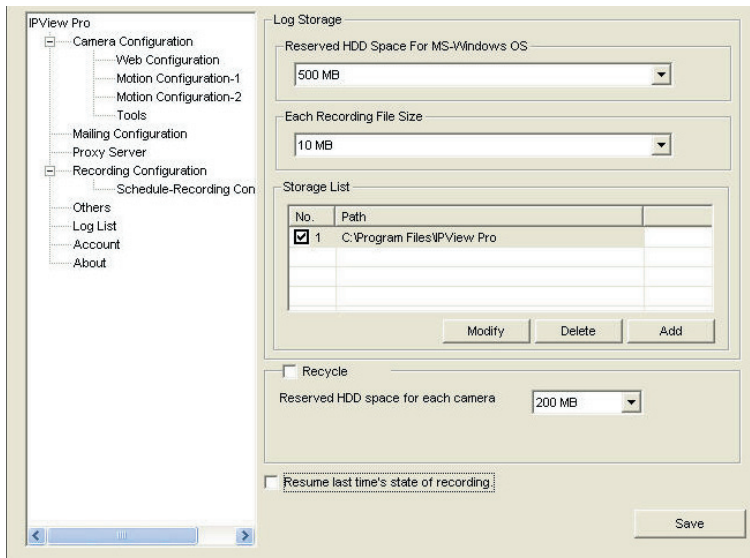
- **Log Storage:**
- • **Reserved HDD Space For MS-Windows OS:** You can reserve 500 MB to 1000 MB hard disk space for the program.
- • **Each Recording File Size:** If the recorded video files reach the file size limit, video images will be recorded into another file automatically. The available settings are from 10 MB to 50 MB.
- • **Storage List:** The destination folder to save the recorded video file can be specified here. Click Modify to change the current path setting; click Add to add a new destination folder; click Delete to remove a selected path setting. Please note that you are not allowed to delete a path setting if there is only one setting in the list.
- **Recycle:** You can check this option to clear the files when the unreserved space of your hard disk is filled. The available settings are from 200 MB to 50000 MB.
- **Resume last time's state of recording:** resume the settings for recording as they were previously.

Schedule-Recording Configuration

This recording function will work after you have enabled respective settings in the Schedule mode. The recording schedule can be defined by **Date Mode** or **Week Mode**.

- Date Mode: First, select the camera desired from the pull-down menu. Then, setup the time in the Start/Stop fields. Click Add to add the recording schedule to the list. Click Save to save the settings.
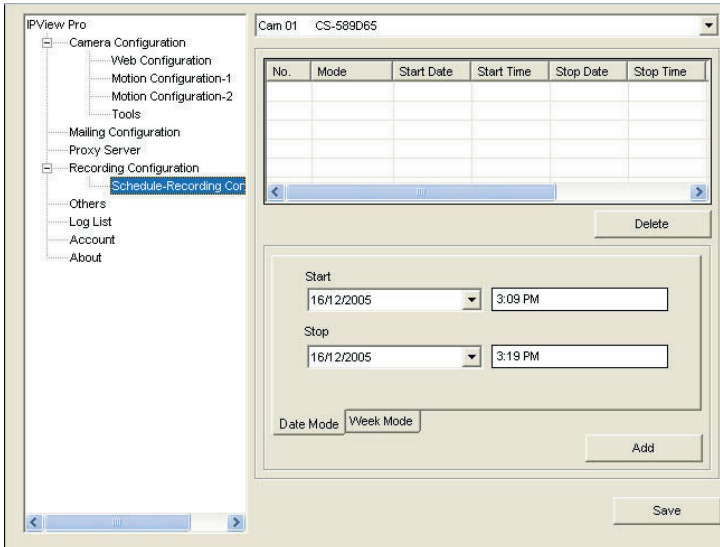
- **Week Mode:** First, select the camera desired from the pull-down menu. Then, setup the time in the Start/Stop fields, and select the weekday from the buttons. Click Add to add the recording schedule to the list. Click Save to save the settings.
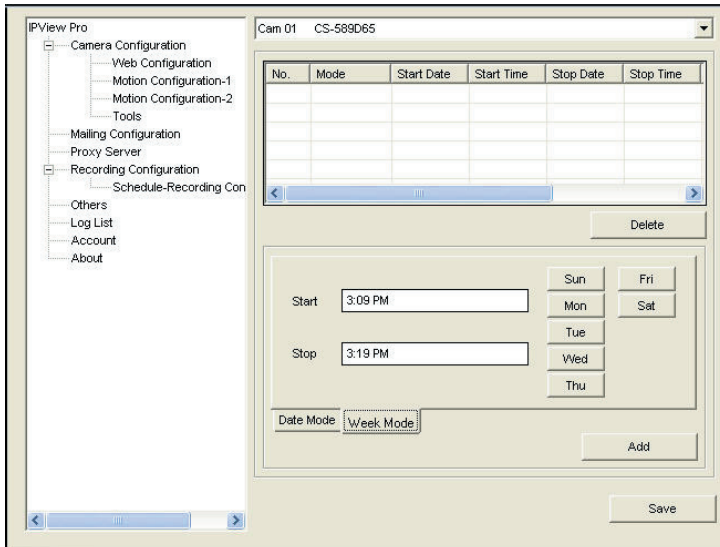
Others

When multiple cameras connected, this option allows the system to display these views as the main view in circles according to your time settings. The range of **Time interval of scan** is from **1** to **20** seconds.
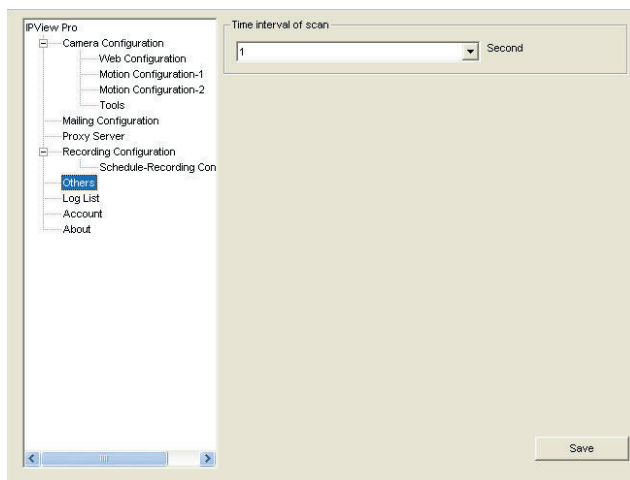
Log List

This filed displays the user(s) information, which include the Date, MAC address, and the brief description of events.
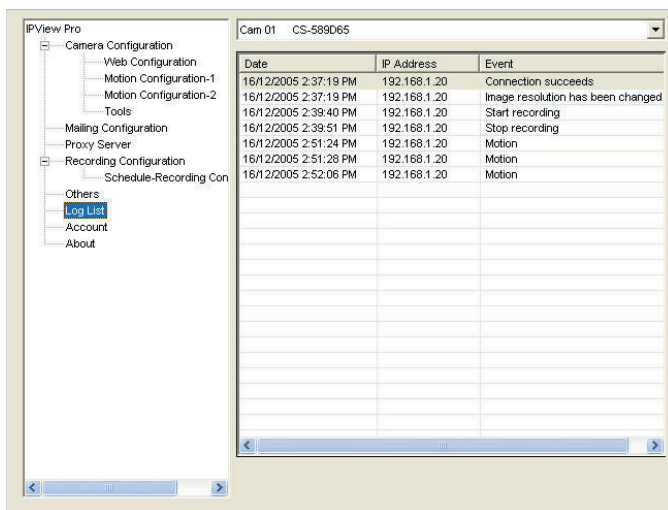
Account

Change the Admin ID and Admin password using the fields on this page.
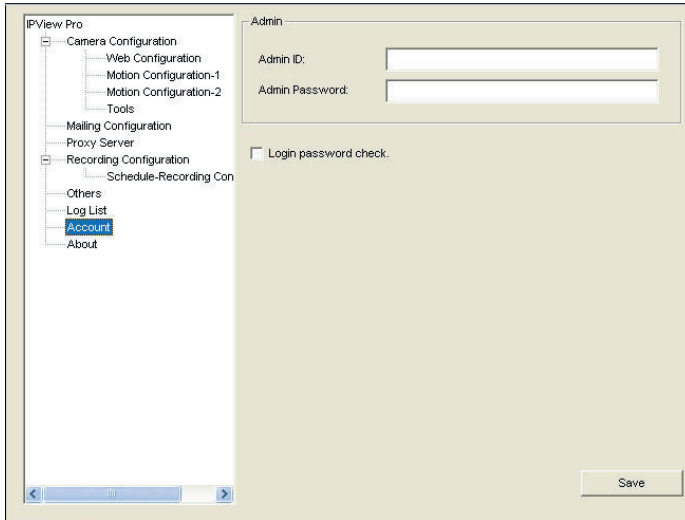
Click the Login Password Check field to challenge users when they attempt to access the camera.

About

This filed provides information of the software application.
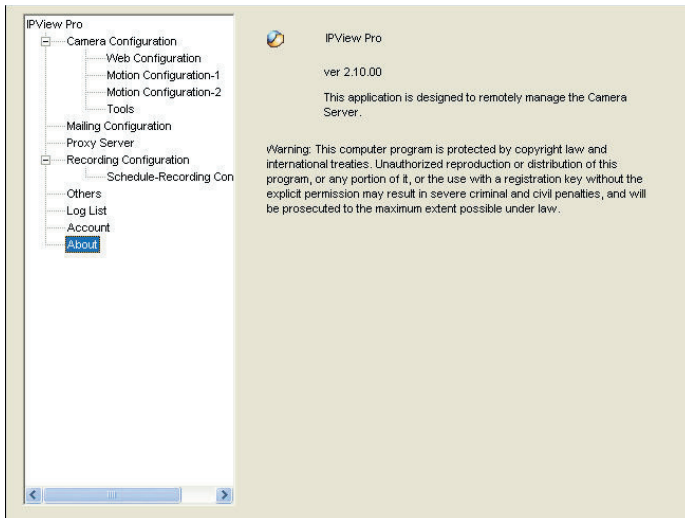
Appendix A: Frequently Asked Questions

Pan/Tilt Internet Camera Features

Q: What is an Pan/Tilt Internet Camera?

A: The Pan/Tilt Internet Camera is a standalone system connecting directly to an Ethernet or Fast Ethernet network and supported by the wireless transmission based on the IEEE 802.11g standard. It is different from the conventional PC Camera, the Pan/Tilt Internet Camera is an all-in-one system with built-in CPU and web-based solutions providing a low cost solution that can transmit high quality video images for monitoring. The Pan/Tilt Internet Camera can be managed remotely, accessed and controlled from any PC/Notebook over the Intranet or Internet via a web browser.

Q: What is the maximum number of users that can be allowed to access the Pan/Tilt Internet Camera simultaneously?

A: Maximum number of users that can log onto the Pan/Tilt Internet Camera at the same time is 64. Please keep in mind the overall performance of the transmission speed will slow down when many users are logged on.

Q: What algorithm is used to compress the digital image?

A: The Pan/Tilt Internet Camera utilizes the JPEG image compression technology providing high quality images for users. JPEG is adopted since it is a standard for image compression and can be applied to various web browser and application software without the need to install extra software.

Q: Can I change the wireless antenna attached to the Pan/Tilt Internet Camera?

A: The wireless antenna can be changed for a variety of reasons such as extending the wireless transmission range, however, please consult authorized distributors before attempting as the connectors must be SMA connector type.

Q: What is the wireless transmission range for the Pan/Tilt Internet Camera?

A: Generally the wireless distance can go up to 100 meters indoors and up to 300 meters outdoors. The range is limited by the number of walls, ceilings, or other objects that the wireless signals must pass through. Typical ranges vary depends on the types of materials and background Radio Frequency (RF) noise in your home or business and the configuration setting of your network environment.

Pan/Tilt Internet Camera Installation

Q: Can the Pan/Tilt Internet Camera be used out-doors?

A: The Pan/Tilt Internet Camera is not weatherproof. It needs to be equipped with a weatherproof case to be used outdoors and it is not recommended.

Q: What network cabling is required for the Pan/Tilt Internet Camera?

A: The Pan/Tilt Internet Camera uses Category 5 UTP cable allowing 10 Base-T and 100 Base-T networking.

Q: Can the Pan/Tilt Internet Camera be setup as a PC-cam on the computer?

A: No, the Pan/Tilt Internet Camera is an Pan/Tilt Internet Camera used only on Ethernet and Fast Ethernet network and supported by wireless transmission.

Pan/Tilt Internet Camera

Q: Can the Pan/Tilt Internet Camera be connected on the network if it consists of only private IP addresses?

A: The Pan/Tilt Internet Camera can be connected to LAN with private IP addresses.

Q: Can the Pan/Tilt Internet Camera be installed and work if a firewall exists on the network?

A: If a firewall exists on the network, port 80 is open for ordinary data communication. However, since the Pan/Tilt Internet Camera transmits image data, the default port 8481 is also required. Therefore, it is necessary to open port 8481 of the network for remote users to access the Pan/Tilt Internet Camera.

Appendix B: PING Your IP Address

The PING (Packet Internet Groper) command can determine whether a specific IP address is accessible by sending a packet to the specific address and waiting for a reply. It can also provide a very useful tool to confirm if the IP address conflicts with the Pan/Tilt Internet Camera over the network.

Follow the step-by-step procedure below to utilize the PING command. However, you must disconnect the Pan/Tilt Internet Camera from the network first.

1. Start a DOS window.

2. Type ping x.x.x.x, where x.x.x.x is the IP address of the Pan/Tilt Internet Camera.

3. The succeeding replies as illustrated below will provide useful explanation to the cause of the problem with the Pan/Tilt Internet Camera IP address.

Appendix C: Trouble Shooting

Q: I cannot access the Pan/Tilt Internet Camera from a web browser.

A1: The possible cause might be the IP Address for the Pan/Tilt Internet Camera is already being used by another device. To correct the possible problem, you need to first disconnect the Pan/Tilt Internet Camera from the network. Then run the PING utility (follow the instructions in Appendix B - PING Your IP Address).

A2: Another possible reason is the IP Address is located on a different subnet. To fix the problem, run the PING utility (follow the instructions in Appendix B - PING Your IP Address). If the utility returns "no response" or similar, the finding is probably correct, then you should proceed as follows:

In Windows 95/98/2000 and Windows NT, double check the IP Address of the Pan/Tilt Internet Camera is within the same subnet as your workstation.

Click "Start", "Setting", "Control Panel", and the "Network" icon.

Select TCP/IP from the "Network" dialog box and from the "TCP/IP Properties" dialog box click "Specify an IP address".

If the Pan/Tilt Internet Camera is situated on a different subnet than your workstation, you will not be able to set the IP address from this workstation. To verify make sure the first 3 sections of the IP address of the Pan/Tilt Internet Camera corresponds to the first 3 sections of the workstation. Therefore the IP address of the Pan/Tilt Internet Camera must be set from a workstation on the same subnet.

A3: Other possible problems might be due to the network cable. Try replacing your network cable. Test the network interface of the product by connecting a local computer to the unit, utilizing a standard Crossover (hub to hub) Cable. If the problem is not solved the Pan/Tilt Internet Camera might be faulty.

Q: Why does the Power LED not light up constantly?

A: The power supply used might be at fault. Confirm that you are using the provided power supply DC 5V for the Pan/Tilt Internet Camera and verify that the power supply is well connected.

Q: Why does the Link LED not light up properly?

A1: There might be a problem with the network cable. To confirm that the cables are working, PING the address of a know device on the network. If the cabling is OK and your network is reachable, you should receive a reply similar to the following (…bytes = 32 time = 2 ms).

A2: The network device utilized by the Pan/Tilt Internet Camera is not functioning properly such as hubs or switches. Confirm the power for the devices are well connected and functioning.

A3: The wireless connection might be at fault. In ad-hoc mode make sure the Pan/Tilt Internet Camera wireless channel and SSID is set to match the PC/Notebook wireless channel and SSID for direct communication.

Under infrastructure mode make sure the SSID on the PC/Notebook and the Pan/Tilt Internet Camera must match with the access point's SSID.

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Q: Why does the Pan/Tilt Internet Camera work locally but not externally?

A1: Might be caused from the firewall protection. Need to check the Internet firewall with your system administrator.

A2: The default router setting might be a possible reason. Need to double check if the configuration of the default router settings is required.

Q: Why does a series of broad vertical white line appears through out the image?

A: A likely issue is that the CMOS sensor becomes overloaded when the light source is too bright such as direct exposure to sunlight or halogen light. You need to reposition the Pan/Tilt Internet Camera into a more shaded area immediately as this will damage the CMOS sensor.

Q: There is bad focus on the Pan/Tilt Internet Camera, what should be done?

A1: The focus might not be correctly adjusted for the line of sight. You need to adjust the Pan/Tilt Internet Camera focus manually as described in Adjust Pan/Tilt Internet Camera Focus.

A2: There is no adaptor fitted with your C-type lens. If you have previously changed the supplied CS-type lens, you may have unintentionally installed a C-type lens without fitting the adaptor first.

Q: Noisy images occur how can I solve the problem?

A1: The video images might be noisy if the Pan/Tilt Internet Camera is used is a very low light environment. To solve this issue you need more lighting.

A2: There might be wireless transmission interference make sure there are no other wireless devices on the network that will affect the wireless transmission.

Q: There is poor image quality, how can I improve the image?

A1: A probable cause might be the incorrect display properties configuration for your desktop. You need to open the Display Properties on your desktop and configure your display to show at least 65'000 colors for example at least 16-bit.

> NOTE: Applying only 16 or 256 colors on your computer will produce dithering artifacts in the image.

A2: The configuration on the Pan/Tilt Internet Camera image display is incorrect. Through the Web Configuration Image section you need to adjust the image related parameter for improve images such as brightness, contrast, hue and light frequency. Please refer to the Web Configuration section for detail information.

Q: There are no images available through the web browser?

A: The ActiveX might be disabled. If you are viewing the images from Internet Explorer make sure ActiveX has been enabled in the Internet Options menu. Alternatively, you can use the Java Applet for viewing the required images.

Appendix D: Time Zone Table

```
(GMT-12:00) Eniwetok, Kwajalein
(GMT-11:00) Midway Island, Samoa
(GMT-10:00) Hawaii
(GMT-09:00) Alaska
(GMT-08:00) Pacific Time (US & Canada); Tijuana
(GMT-07:00) Arizona
(GMT-07:00) Mountain Time (US & Canada)
(GMT-06:00) Central Time (US & Canada)
(GMT-06:00) Mexico City, Tegucigalpa
(GMT-06:00) Saskatchewan
(GMT-05:00) Bogota, Lima, Quito
(GMT-05:00) Eastern Time (US & Canada)
(GMT-05:00) Indiana (East)
(GMT-04:00) Atlantic Time (Canada)
(GMT-04:00) Caracas, La Paz
(GMT-04:00) Santiago
(GMT-03:30) Newfoundland
(GMT-03:00) Brasilia
(GMT-03:00) Buenos Aires, Georgetown
(GMT-02:00) Mid-Atlantic
(GMT-01:00) Azores, Cape Verde Is.
(GMT) Casablanca, Monrovia
(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague
(GMT+01:00) Brussels, Copenhagen, Madrid, Paris, Vilnius
(GMT+01:00) Sarajevo, Skopje, Sofija, Warsaw, Zagreb
(GMT+02:00) Athens, Istanbul, Minsk
(GMT+02:00) Bucharest
(GMT+02:00) Cairo
(GMT+02:00) Harare, Pretoria
(GMT+02:00) Helsinki, Riga, Tallinn
(GMT+02:00) Jerusalem
(GMT+03:00) Baghdad, Kuwait, Riyadh
(GMT+03:00) Moscow, St. Petersburg, Volgograd
(GMT+03:00) Nairobi
(GMT+03:30) Tehran
(GMT+04:00) Abu Dhabi, Muscat
(GMT+04:00) Baku, Tbilisi
(GMT+04:30) Kabul
(GMT+05:00) Ekaterinburg
(GMT+05:00) Islamabad, Karachi, Tashkent
(GMT+05:30) Bombay, Calcutta, Madras, New Delhi
(GMT+06:00) Astana, Almaty, Dhaka
(GMT+06:00) Colombo
(GMT+08:00) Singapore
(GMT+08:00) Taipei
(GMT+09:00) Osaka, Sapporo, Tokyo
(GMT+09:00) Seoul
(GMT+09:00) Yakutsk
(GMT+09:30) Adelaide
(GMT+09:30) Darwin
(GMT+10:00) Brisbane
(GMT+10:00) Canberra, Melbourne, Sydney
(GMT+10:00) Guam, Port Moresby
(GMT+10:00) Hobart
(GMT+10:00) Vladivostok
(GMT+11:00) Magadan, Solomon Is., New Caledonia
(GMT+12:00) Auckland, Wellington
(GMT+12:00) Fiji, Kamchatka, Marshall Is.
```

Appendix E: Adjust Pan/Tilt Internet Camera Focus

To adjust the focus of the lens, you need to turn the lens slowly in either clockwise or anti-clockwise direction until the desired image appears. DO NOT over turn the lens in either of the directions, as it will be out of focus.

NOTE: You can further adjust the Pan/Tilt Internet Camera's image quality through System Administration – Image of Web Configuration. Please refer to Web Configuration section for further details.

Warning: Direct exposure to sunlight may cause permanent damage to the CMOS sensor. Therefore do not expose the Pan/Tilt Internet Camera's lens directly to sunlight. When operation is required in glaring light environment, it is recommended to use an iris lens.

The Pan/Tilt Internet Camera is designed for indoor usage and if your application requires prolong exposure to sunlight, a sun visor is recommended to protect the Pan/Tilt Internet Camera.

Appendix F: Specification

Video specification

Resolution:	640 x 480 pixel
Sensor:	Color CMOS sensor
Lens:	f: 6.0 mm, F: 1.8

Image (Video Setting)

Image compression:	JPEG
Frame rate:	30fps @ QCIF, 25fps @ CIF, 10fps @ VGA
Compression Rate selection:	5 levels: Very low/Low/ Middle/High/Very high
Frame rate setting:	1, 5, 7, 15, 20, Auto (depends on the video format)
Video resolution:	160x120, 320x240, 640x480
Gain control:	Automatic
Exposure:	Automatic
White Balance:	Automatic
Digital Zoom:	Supported
Horizontal/ Vertical mirror:	Supported

Hardware Interface

LAN Connector:	One RJ-45 port, 10/100M auto-sensed, Auto-MDIX
Wireless LAN:	Built-in 802.11g wireless LAN
Communication protocol:	HTTP, FTP, TCP/IP, UDP, ARP, ICMP, BOOTP, DHCP, PPPoE, SMTP, DDNS, UPnP
CPU:	RDC R2880
RAM:	8MB
Flash ROM:	2MB
OS:	RTOS
Power Supply:	DC 5V, switching type
Power consumption:	5 Watt (1000mA x 5V)
LED Indicator:	Power LED (Blue) Activity LED (Orange)
Pan/Tilt:	Pan -170°~ +170° Tilt +45 ~ -90°

Software

Browser:	Internet Explorer 5.0 or above; Netscape 6.0 or above
Application Software:	IPView Pro
OS supported:	Microsoft Windows 98SE/ME/ 2000/XP, Windows NT4.0

Operating environment

Operating temperature:	5°C ~ 40°C
Storage temperature:	-25°C ~ 50°C
Humidity:	5% ~ 95%, non-condensing
EMI	FCC, CE, VCCI Class B

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Appendix G: Glossary of Terms

NUMBERS

10BASE-T 10BASE-T is Ethernet over UTP Category III,IV, or V unshielded twisted-pair media.

100BASE-TX The two-pair twisted-media implementation of 100BASE-T is called 100BASE-TX.

802.11g An IEEE standard for wireless local area networks. It offers transmissions speeds at up to 54 Mbps in the 2.4-GHz band.

A

Access point It is the hardware interface between a wireless LAN and a wired LAN. The access point attaches to the wired LAN through an Ethernet connection.

Applet Applets are small Java programs that can be embedded in an HTML page. The rule at the moment is that an applet can only make an Internet connection to the computer form that the applet was sent.

ASCII American Standard Code For Information Interchange, it is the standard method for encoding characters as 8-bit sequences of binary numbers, allowing a maximum of 256 characters.

ARP Address Resolution Protocol. ARP is a protocol that resides at the TCP/IP Internet layer that delivers data on the same network by translating an IP address to a physical address.

AVI Audio Video Interleave, it is a Windows platform audio and video file type, a common format for small movies and videos.

B

BOOTP Bootstrap Protocol is an Internet protocol that can automatically configure a network device in a diskless workstation to give its own IP address.

C

Communication Communication has four components: sender, receiver, message, and medium. In networks, devices and application tasks and processes communicate messages to each other over media. They represent the sender and receivers. The data they send is the message. The cabling or transmission method they use is the medium.

Connection In networking, two devices establish a connection to communicate with each other.

D

DHCP
Dynamic Host Configuration Protocol was developed by Microsoft a protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network. In some systems, the device's IP address can even change while it is still connected. DHCP also supports a mix of static and dynamic IP addresses. This simplifies the task for network administrators because the software keeps track of IP addresses rather than requiring an administrator to manage the task. This means a new computer can be added to a network without the hassle of manually assigning it a unique IP address. DHCP allows the specification for the service provided by a router, gateway, or other network device that automatically assigns an IP address to any device that requests one

DNS
Domain Name System is an Internet service that translates domain names into IP addresses. Since domain names are alphabetic, they're easier to remember. The Internet however, is really based on IP addresses every time you use a domain name the DNS will translate the name into the corresponding IP address. For example, the domain name *www.network_camera.com* might translate to *192.167.222.8.*

E

Enterprise network
An enterprise network consists of collections of networks connected to each other over a geographically dispersed area. The enterprise network serves the needs of a widely distributed company and operates the company's mission-critical applications.

Ethernet
The most popular LAN communication technology. There are a variety of types of Ethernet, including 10 Mbps (traditional Ethernet), 100 Mbps (Fast Ethernet), and 1,000 Mbps (Gigabit Ethernet). Most Ethernet networks use Category 5 cabling to carry information, in the form of electrical signals, between devices. Ethernet is an implementation of CSMA/CD that operates in a bus or star topology.

F

Fast Ethernet
Fast Ethernet, also called 100BASE-T, operates at 10 or 100Mbps per second over UTP, STP, or fiber-optic media.

Firewall
Firewall is considered the first line of defense in protecting private information. For better security, data can be encrypted. A system designed to prevent unauthorized access to or from a private network. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially Intranets all messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

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G

Gateway   A gateway links computers that use different data formats together.

Group   Groups consist of several user machines that have similar characteristics such as being in the same department.

H

HEX   Short for hexadecimal refers to the base-16 number system, which consists of 16 unique symbols: the numbers 0 to 9 and the letters A to F. For example, the decimal number 15 is represented as F in the hexadecimal numbering system. The hexadecimal system is useful because it can represent every byte (8 bits) as two consecutive hexadecimal digits. It is easier for humans to read hexadecimal numbers than binary numbers.

I

IEEE   Institute of Electrical and Electronic Engineers.

Intranet   This is a private network, inside an organization or company, that uses the same software you will find on the public Internet. The only difference is that an Intranet is used for internal usage only.

Internet   The Internet is a globally linked system of computers that are logically connected based on the Internet Protocol (IP). The Internet provides different ways to access private and public information worldwide.

Internet address To participate in Internet communications and on Internet Protocol-based networks, a node must have an Internet address that identifies it to the other nodes. All Internet addresses are IP addresses

IP   Internet Protocol is the standard that describes the layout of the basic unit of information on the Internet (the *packet*) and also details the numerical addressing format used to route the information. Your Internet service provider controls the IP address of any device it connects to the Internet. The IP addresses in your network must conform to IP addressing rules. In smaller LANs, most people will allow the DHCP function of a router or gateway to assign the IP addresses on internal networks.

IP address   IP address is a 32-binary digit number that identifies each sender or receiver of information that is sent in packets across the Internet. For example 80.80.80.69 is an IP address, it is the closet thing the Internet has to telephone numbers. When you "call" that number, using any connection methods, you get connected to the computer that "owns" that IP address.

ISP   Internet Service Provider, is a company that maintains a network that is linked to the Internet by way of a dedicated communication line. An ISP offers the use of its dedicated communication lines to companies or individuals who can't afford the high monthly cost for a direct connection.

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J

JAVA
Java is a programming language that is specially designed for writing programs that can be safely downloaded to your computer through the Internet without the fear of viruses. It is an object-oriented multi-thread programming best for creating applets and applications for the Internet, Intranet and other complex, distributed network.

L

LAN
Local Area Network a computer network that spans a relatively small area sharing common resources. Most LANs are confined to a single building or group of buildings.

N

NAT
Network Address Translator generally applied by a router, that makes many different IP addresses on an internal network appear to the Internet as a single address. For routing messages properly within your network, each device requires a unique IP address. But the addresses may not be valid outside your network. NAT solves the problem. When devices within your network request information from the Internet, the requests are forwarded to the Internet under the router's IP address. NAT distributes the responses to the proper IP addresses within your network.

Network
A network consists of a collection of two or more devices, people, or components that communicate with each other over physical or virtual media. The most common types of network are:

LAN – (local area network): Computers are in close distance to one another. They are usually in the same office space, room, or building.

WAN – (wide area network): The computers are in different geographic locations and are connected by telephone lines or radio waves.

NWay Protocol
A network protocol that can automatically negotiate the highest possible transmission speed between two devices.

P

PING
Packet Internet Groper, a utility used to determine whether a specific IP address is accessible. It functions by sending a packet to the specified address and waits for a reply. It is primarily used to troubleshoot Internet connections.

PPPoE
Point-to-Point Protocol over Ethernet. PPPoE is a specification for connecting the users on an Ethernet to the Internet through a common broadband medium, such as DSL or cable modem. All the users over the Ethernet share a common connection.

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Protocol	Communication on the network is governed by sets of rules called protocols. Protocols provide the guidelines devices use to communicate with each other, and thus they have different functions. Some protocols are responsible for formatting and presenting and presenting data that will be transferred from file server memory to the file server's net work adapter Others are responsible for filtering information between networks and forwarding data to its destination. Still other protocols dictate how data is transferred across the medium, and how servers respond to workstation requests and vice versa. Common network protocols responsible for the presentation and formatting of data for a network operating system are the Internetwork Packet Exchange (IPX) protocol or the Internet Protocol (IP). Protocols that dictate the format of data for transferors the medium include token-passing and Carrier Sense Multiple Access with Collision Detection (CSMA/CD),implemented as token-ring, ARCNET, FDDI, or Ethernet. The Router Information Protocol (RIP),a part of the Transmission Control Protocol/Internet Protocol (TCP/IP) suite, forwards packets from one network to another using the same network protocol.

R

RARP	Reverse Address Resolution Protocol, a TCP/IP protocol that allows a physical address, such as an Ethernet address, to be translated into an IP address.
RJ-45	RJ-45 connector is used for Ethernet cable connections.
Router	A router is the network software or hardware entity charged with routing packets between networks.

S

Server	It is a simple computer that provides resources, such as files or other information.
SMTP	The Simple Mail Transfer Protocol is used for Internet mail.
SNMP	Simple Network Management Protocol. SNMP was designed to provide a common foundation for managing network devices.
Station	In LANs, a station consists of a device that can communicate data on the network. In FDDI, a station includes both physical nodes and addressable logical devices. Workstations, single-attach stations, dual-attach stations, and concentrators are FDDI stations.
Subnet mask	In TCP/IP, the bits used to create the subnet are called the subnet mask.

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T

(TCP/IP)	Transmission Control Protocol/Internet Protocol is a widely used transport protocol that connects diverse computers of various transmission methods. It was developed y the Department of Defense to connect different computer types and led to the development of the Internet.
Transceiver	A transceiver joins two network segments together. Transceivers can also be used to join a segment that uses one medium to a segment that uses a different medium. On a 10BASE-5 network, the transceiver connects the network adapter or other network device to the medium. Transceivers also can be used on 10BASE-2 or 10BASE-T networks to attach devices with AUI ports.

U

UDP	The User Datagram Protocol is a connectionless protocol that resides above IP in the TCP/IP suite
ULP	The upper-layer protocol refers to Application Layer protocols such as FTP,SNMP, and SMTP.
User Name	The USERNAME is the unique name assigned to each person who has access to the LAN.
Utility	It is a program that performs a specific task.
UTP	Unshielded twisted-pair. UTP is a form of cable used by all access methods. It consists of several pairs of wires enclosed in an unshielded sheath.

W

WAN	Wide-Area Network. A wide-area network consists of groups of interconnected computers that are separated by a wide distance and communicate with each other via common carrier telecommunication techniques.
Windows	Windows is a graphical user interface for workstations that use DOS.
Workgroup	A workgroup is a group of users who are physically located together and connected to the same LAN, or a group of users who are scattered throughout an organization but are logically connected by work and are connected to the same network group.
Workstations	Workstation refers to the intelligent computer on the user's desktop. This computer may be an Intel-based PC, a Macintosh, or a UNIX-based workstation. The workstation is any intelligent device a user works from.

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Appendix H: Cable Information

This cable information is provided for your reference only. Please ensure you only connect the appropriate cable into the correct socket on either this product or your computer.

If you are unsure about which cable to use or which socket to connect it to, please refer to the hardware installation section in this manual. If you are still not sure about cable connections, please contact a professional computer technician or NetComm for further advice.

RJ-45 Network Ports

RJ-45 Network Ports can connect any networking devices that use a standard LAN interface, such as a Hub/Switch Hub or Router. Use unshielded twisted-pair (UTP) or shield twisted-pair (STP) cable to connect the networking device to the RJ-45 Ethernet port.   Depending on the type of connection, 10Mbps or 100Mbps, use the following Ethernet cable, as prescribed.

10Mbps:	Use EIA/TIA-568-100-Category 3, 4 or 5 cable.
100Mbps:	Use EIA/TIA-568-100-Category 5 cable.

Note: To prevent loss of signal, make sure that the length of any twisted-pair connection does not exceed 100 metres.

RJ-45 Connector Pin Assignment	Normal Assignment
1	Input Receive Data +
2	Input Receive Data -
3	Output Transmit Data +
6	Output Transmit Data -
4,5,7,8	Not used

Figure 1

RJ-45 plug attached to cable

Figure 2

Straight and crossover cable configuration

There are two types of the wiring: Straight-Through Cables and Crossover Cables. Category 5 UTP/ STP cable has eight wires inside the sheath. The wires form four pairs. Straight-Through Cables has same pinouts at both ends while Crossover Cables has a different pin arrangement at each end.

In a straight-through cable, wires 1,2,3,4,5,6,7 and 8 at one end of the cable are still wires 1~8 at the other end. In a crossover cable, the wires of 1,2,3,6 are reversed so that wire 1 become 3 at the other end of the cable, 2 becomes 6, and so forth.

To determine which wire is wire 1, hold the RJ-45 cable tip with the spring clip facing towards the ground and the end pointing away from you. The copper wires exposed upwards to your view. The first wire on the far left is wire 1. You can also refer to the illustrations and charts of the internal wiring on the following page.

Straight-Through Cabling
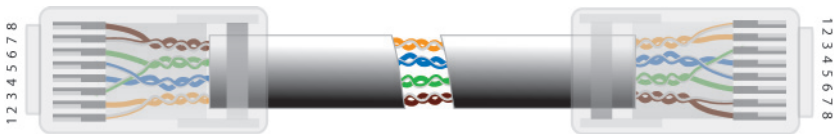
Figure 3

Wire	Becomes
1	1
2	2
3	3
6	6

Cross-Over Cabling
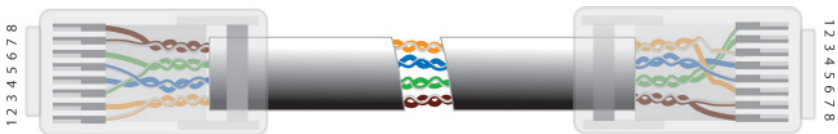
Figure 4

Wire	Becomes
1	3
2	6
3	1
6	2

Note: To prevent loss of signal, make sure that the length of any twisted-pair connection does not exceed 100 metres.

Appendix I: Registration and Warranty Information

All NetComm Limited ("NetComm") products have a standard 12 month warranty from date of purchase against defects in manufacturing and that the products will operate in accordance with the specifications outlined in the User Guide. However some products have an extended warranty option (please refer to your packaging). To be eligible for the extended warranty you must supply the requested warranty information to NetComm within 30 days of the original purchase by registering on-line via the NetComm web site at:

www.netcomm.com.au

Contact Information

If you have any technical difficulties with your product, please do not hesitate to contact NetComm's Customer Support Department.

Email:	support@netcomm.com.au
Fax:	(+612) 9424-2010
Web:	www.netcomm.com.au

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Customer Information

ACA (Australian Communications Authority) requires you to be aware of the following information and warnings:

(1) This unit shall be connected to the Telecommunication Network through a line cord which meets the requirements of the ACA TS008 Standard.

(2) This equipment has been tested and found to comply with the Standards for C-Tick and or A-Tick as set by the ACA. These standards are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio noise and, if not installed and used in accordance with the instructions detailed within this manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur with the installation of this product in your home or office. If this equipment does cause some degree of interference to radio or television reception, which can be determined by turning the equipment off and on, we encourage the user to try to correct the interference by one or more of the following measures:

• Change the direction or relocate the receiving antenna.

• Increase the separation between this equipment and the receiver.

• Connect the equipment to an alternate power outlet on a different power circuit from that to which the receiver/TV is connected.

• Consult an experienced radio/TV technician for help.

(3) The power supply that is provided with this unit is only intended for use with this product. Do not use this power supply with any other product or do not use any other power supply that is not approved for use with this product by NetComm. Failure to do so may cause damage to this product, fire or result in personal injury.

Product Warranty

The warranty is granted on the following conditions:

1. This warranty extends to the original purchaser (you) and is not transferable;

2. This warranty shall not apply to software programs, batteries, power supplies, cables or other accessories supplied in or with the product;

3. The customer complies with all of the terms of any relevant agreement with NetComm and any other reasonable requirements of NetComm including producing such evidence of purchase as NetComm may require;

4. The cost of transporting product to and from NetComm's nominated premises is your responsibility; and,

5. NetComm does not have any liability or responsibility under this warranty where any cost, loss, injury or damage of any kind, whether direct, indirect, consequential, incidental or otherwise arises out of events beyond NetComm's reasonable control. This includes but is not limited to: acts of God, war, riot, embargoes, acts of civil or military authorities, fire, floods, electricity outages, lightning, power surges, or shortages of materials or labour.

6. The customer is responsible for the security of their computer and network at all times. Security features may be disabled within the factory default settings. NetComm recommends that you enable these features to enhance your security.

The warranty is automatically voided if:

1. You, or someone else, use the product, or attempts to use it, other than as specified by NetComm;

2. The fault or defect in your product is the result of a voltage surge subjected to the product either by the way of power supply or communication line, whether caused by thunderstorm activity or any other cause(s);

3. The fault is the result of accidental damage or damage in transit, including but not limited to liquid spillage;

4. Your product has been used for any purposes other than that for which it is sold, or in any way other than in strict accordance with the user manual supplied;

5. Your product has been repaired or modified or attempted to be repaired or modified, other than by a qualified person at a service centre authorised by NetComm; and,

6. The serial number has been defaced or altered in any way or if the serial number plate has been removed.

Limitations of Warranty

The Trade Practices Act 1974 and corresponding State and Territory Fair Trading Acts or legalisation of another Government ("the relevant acts") in certain circumstances imply mandatory conditions and warranties which cannot be excluded. This warranty is in addition to and not in replacement for such conditions and warranties.

To the extent permitted by the Relevant Acts, in relation to your product and any other materials provided with the product ("the Goods") the liability of NetComm under the Relevant Acts is limited at the option of NetComm to:

- Replacement of the Goods; or
- Repair of the Goods; or
- Payment of the cost of replacing the Goods; or
- Payment of the cost of having the Goods repaired.

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