PT-920R

Moto IP camera

IP camera User Manual

Weichu Technology

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Product summarize

1 Product Introduction

1.1 PT-920R Introduction
The Vilar IP Camera combines a high quality digital video camera with network connectivity and a powerful web server to bring clear video to your desktop from anywhere on your local network or over the Internet.

1.2 Application areal
Now the digital cameras are used more often in many public areas such as super markets, schools, factories and so on. Especially on some special areas such as banks and traffic cross road, its powerful image management can help you monitor those areas better.
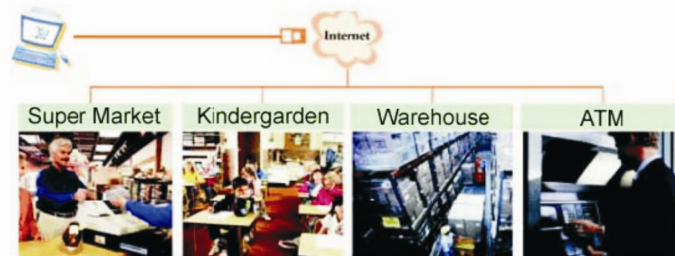
⚠ Before starting, check that that all the following items have been included with your camera. If anything is missing, please contact your dealer.

The package includes.

Vilar IP Camera *1	Mounting bracket *1
Ethernet cable *1	5V Power Adapter *1
Vilar IP Camera Utility CD *1	

Product summarize

1.3 Identify PT-920R
1.3.1 PT-920R **Views**

Figure 1 PT-920R View

Product summarize

Lens
Night Vision LEDS
Tilt
Pan
(Red) Power light
(Green) Reticle light

Figure2 PT-920R Front View

Rj45Ethermet Socket
Input&Output Pins
DC5V input Socket
Reset Button
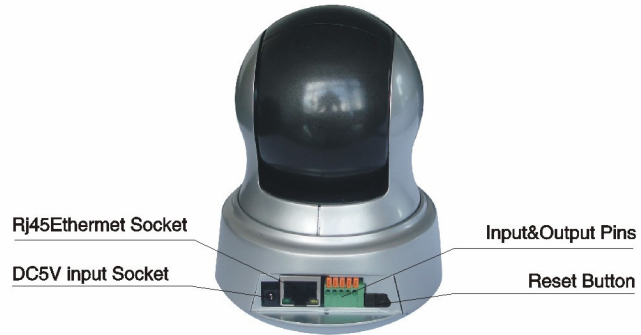
Figure3 PT-920R Front View

Product summarize

Working status LED meaning:

LED Status	Meaning
Normal Flashing: Turns on for 1/2 second every 3 seconds	Normal running
Always on or always off	System error
Fast Flashing: Turns on for 1/2 secondevery 1 second	System is starting, Please wait.
Slow Flashing: Turns on for 1/2 second every 6 second	Upgrading firmware, Please wait.

DC 5V Input Socket
Rj45 Ethernet Socket
Input &Output Pins
Reset button

Figure 4 Back view indication

Product summarize

Output Pins
Relay:Normally Open

Digit Input Pins

Figure 5 Input & Output defines

Output A   Input B   Input   Common 1   Input 2

Input Pins:
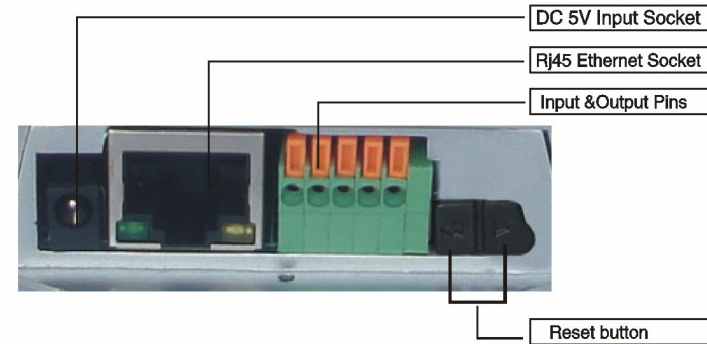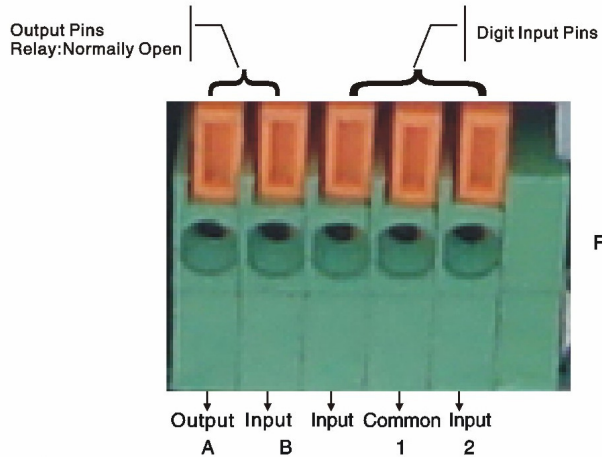The input pins can be used for 2–way external sensor input. For example, you may connect a Person Infrared Sensor (PIR) to it for motion detection. When external sensor triggered, PT-920R can be programmed to send an email with picture or control the internal relay output.

Connecting two sensors which send open and close signals to IO input pins. Pin3 and Pin4 connect two input lines of sensor 1 respectively. Pin4 and Pin5 connect two input lines of sensor 2 respectively.
Output Pins:
PT-920R has an internal relay. Relay's two normally open contacts are represented by Pin 1 and Pin 2.
You may use it to control one external load below 120V,AC/1Amp; 24V,DC/1Amp,.

The way of connecting IO input/output pins is that stripping off the rubber protect of cable to bare the 5mm brass wire first. And then plug the brass wire into the hole after press down the the screwdriver, the cable will be riveted.
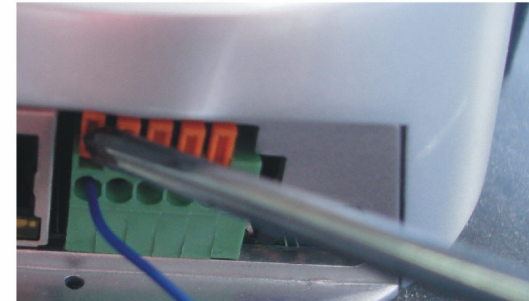
Product summarize

Figure6Input & Output Pins Connection

External Power Socket: Connect to a 5V AC–DC adapter.

⚠ **CAUTION:** Do not use any non–approved power adapter other than the ones which is accessory. This is to prevent any damage of PT-920R.

⚠ **Caution:** DO NOT switch off PT-920R's power during the procedure of restoring factory default. It will take about 30 seconds.

Functions and Features

2 Functions and Features
2.1 Basic Functions
The basic function of IP Camera is transmitting remote video and audio on the IP network.
The high quality video image can be transmitted with 30fps speed on the LAN/WAN by using MJPEG hardware compression technology.
The IP Camera is basic on the TCP/IP standard.
There is a WEB server inside

2.2Advanced Features
Advanced Image Encryption
Besides standard user authentication. There is a powerful 128–bit AES encryption can be used to ensure the image transmission safe.

Motion Detection
Your may use the internal Motion Detection function or external PIR sensor to trigger images recording and transportation.

Alarm sensor input/output
The detection sends an alarm and records it by itself when there is a fire or accident .A message as an email is send to you by this sensor(the input/output discreteness can be chosen)

System Requirement

3 System Requirement
☑ LAN: 10Base–T Ethernet / 100BaseTX Fast Ethernet
☑ Web Browser can support ActiveX ,such as Internet Explorer 5.0 or higher
☑ Web Browser can support Java Applet, such as Firefox 1.5
☑ PC Intel Pentium III or equivalent, 1GHz or above
☑ 128MB RAM
☑ 800x600 resolution with 16–bit color or above
☑ Windows 2000,WindowsXP, Linux,Vista
☑ Other device:read–only CD–ROM

Note: Not only the fixed IP address can accesscamera from the internet,but also Dynamic IP can access camera.If the IP addressprovided by your Internet Service Provider is dynamic (changing),then siging up for a dynamic DNS service willmake accessingfrom the internet much more convenient.Signing up for aDDNS is free and easy: you can get it in some websites,suchas our website www.vipcam.cn that can give you more information

4 Setup Procedure
Before use PT-920R., please setup according to the following procedures.
4.1 PT-920R **Power & Net**work connection

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Setup direction

Step1: Connect the network cable to the RJ45 network connections port

Figure7 Connecting the Ethernet wire

Step2: Connect the power adapter to the **PT-920R** power socket and then insert the plug into an available power outlet.
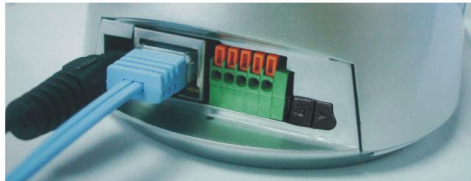

Figure8 Connecting the power supply

CAUTION: Do not use any non–approved power adapter other than the ones which are accessory. This is to prevent any damage of PT-920R . In different country or region, the power supply might be different (110V/220, 50Hz/60Hz), please make sure it correspond to the tag marked on the power adapter.

Setup direction

4.2 Router/Switch/HUB/XDSL Modem Connection
Plug the other end of the Ethernet cable into any available LAN port a typical home router/gateway connection is shown below. The LED of LAN port will then turns ON
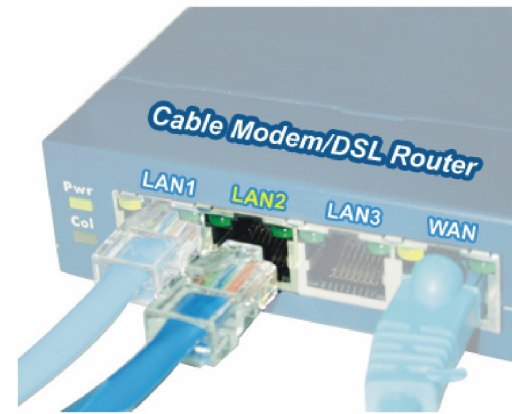

Figure9 LAN Connection

Note: PT-920R by default use fixed (static) IP address setting. The default IP address is :192.168.0.234, Network Mask is 255.255.255.0, Gateway is 192.168.0.1

Setup direction

4.3 Use Vilar IP camera mangement tool to setup PT-920R

Start up your computer, and make sure it connects to the LAN successfully. Click Start>Running, and enter "command" (for Windows 95/98/ME) or "cmd" (for Windows2000/XP). Then select "OK" and enter "ipconfig", press enter. The basic setting of your network will be shown as follow:
Please record the IP Address, Subnet Mask, and Default Gateway. You might use this information to set your device.
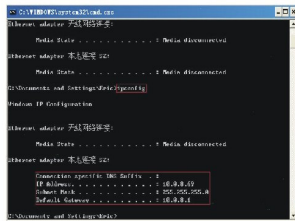
Insert the incidental CD into the CD–ROM drive. After run the Vilar IP camera management tool"Vilar Wizard_CN.exe", the interface as follow will pup up.
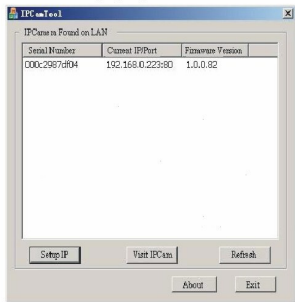

Figure 10   Search Tool

This tool shows all Vilar IP Cameras found on your LAN with its Serial Number/IP Address/Firmware Version. If your Vilar IP camera's IP address is not as the same segment of your PC (defined by IP Address and NetworkMask), you may not be able to visit your Vilar IP camera. For example, Your PC's IP address is 192.168.100.33,network mask is 255.255.255.0, then your PC can visit the IP address from 192.168.100.1 to 192.168.100.255 only, If your Vilar IP camera's IP Address is not within this range, you cannot access it. Therefore you can click [Setup IP] button to change Vilar IP camera's IP address and adjust it adapting your PC setting.

Setup direction

Click [Auto Set], let IPCamSearch tool find an available IP Address for you.
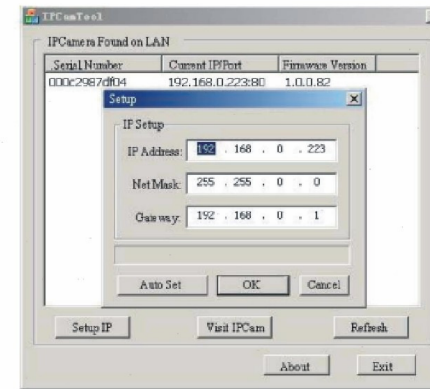

Figure11 Modify Vilar IP camera IP Address

Click [Okt], and then input administrator's username and password to continue

Figure12 InputAdministrator's Udername and pASSWORD

Setup direction

Input the correct username and password, and click [OK], then you can see a message box indicating Vilar IP camera's IP Address has changed(PT-920R is in static IP mode now). Then you may click [Visit IPCam] to run an Internet Explorer, You can do more configuration by click [System Setup] on homepage of PT-920R .

Note: Ifyoudon'thaveVilarIPcameramanagementtoolathand,you may change your PC's IP Address to the same segment, according to the IP shown on Vilar IP camera's front LCD. Then you can input Vilar IP camera's IP Address into IE's address bar to access.

4.4 View the video of PT-920R on Web Browser
You may visit Vilar IP camera's homepage by IE or other compatible web browsers.
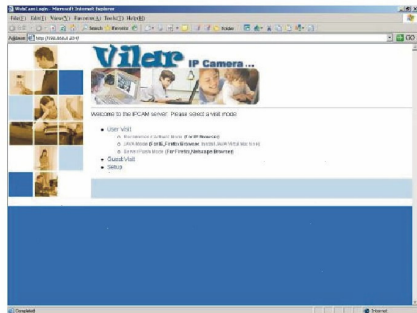
Figure 13   Home Page

Setup direction

Note: Your web browser must support Javascript function.

Click "UserVisit"to view video. You will see a message box which requires your login as shown below

Figure14 Login Message box

Note: By default,adminstrator's username is :admin,password is :123445

Input correct Username and password, then you can view the video.

The system will prompt you install the ActiveX control when you use it first time.

The follow dialog box will be indicated after you setting the security option of Internet Explorer correctly.

Setup direction

Figure 19 IE Security Warning

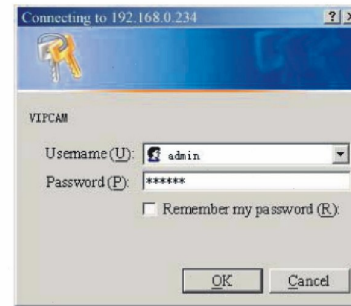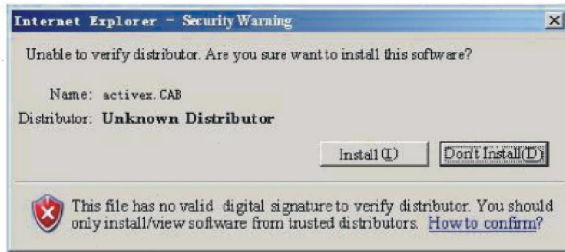Click [Install] to continue. If you cannot see the message above, you must modify IE's security configuration.

> **Note:** You can not download the ActiveX Control without authorization until setup Internet Explorer security configuration properly.

You can follow this procedure to setup IE security configuration:
1、Select [Internet Options] in [Tools] menu of IE;
2、Switch to [Security] option card;
3、Select [Custom Level];
4、Setup as the following;
5、Click [OK] to save it.

Setup direction

Figure16 Security setting for Activex Controls
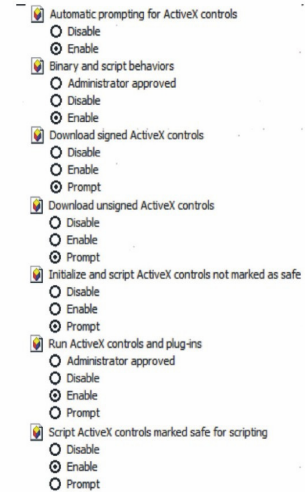
In addition the IPCam also can be a "Trusted Sites" the setting process as follow:
1Select [Internet Options] in [Tools] menu of IE;
2Switch to [Security] option card;

www.vipcam.cn –18
1、Select [Trusted Sites];
2、Uncheck "v "before "……" "ttps:(S) " ;
3、InputVilar IP camera's IP address or URL, for example,
http://192.168.0.250 or http://tom.vipcam.cn;
4、Click [Add], [OK] to save.

Setup direction

NOTE: IN order to operate new setting,you have to start up internet Explorer again
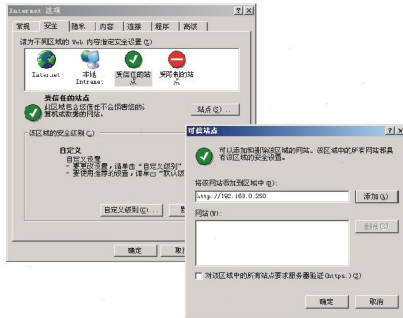

Figure 17 Set PT-920R as a trused site

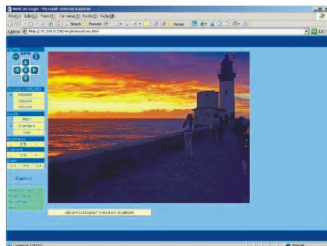After ActiveX Control is installed, you will see a picture as following.

Figure 18 video webpage

Setup direction

There is a pan/tilt on the top-left of the website. You can click it to move the camera Up/Down/Left/Right; or choosing the right-left cruise, up-down cruise and centered.

On the left, you can also select the Resolution, Quality, Brightness, Contrast and Zoom.

Resolution can be 640x480, 320x240, and 160x120. The higher resolution, the

Quality can be "High","Standard"Low","High"consumes largest bandwidth, thus the frame per second will down.
If you feel the frame per second (fps) is too slow, and want to increase it, you canselect "Low"quality and lower resolution. If you hope to see clearer image, you may choose "High" quality and higher resolution.
Brightness and Contrast can be changed according to different environment. "+""Means, add, "—"means reduce. "STD"means a standard (middle) value.
Zoom will show the video in a scale of half or double. It won't affect the transport fps or bandwidth.
Click [Snapshot] will pop up a new page to snap a static JPEG image, you may
Click right key of mouse and select"save as······" store it to your computer.
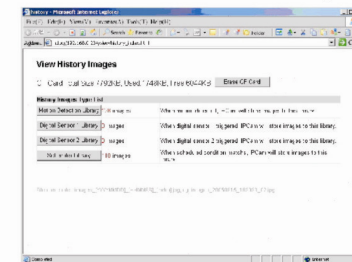

Figure 19 History images view

System Configuration

4.5 Setup PT-920R **on web**
You can click [System Setup] to modify all parameter,
See the chapter 5 for details
4.6 Mounting the PT-920R
The PT-920R can be placed on a flat surface,such as sheif and book case,It also can be
instailed on the wall with included pedestal or on the tripod by using the bottom standard tripod.
Please makesure the network cable is settled before you use PT-920R .this is to provent the damage
of PT-920R which caised by the PT-920R break away from the flxing surface.

⚠️ Caution: The PT-920R should be mounted indoors or inside a weatherproof enclsure.
Outdoor exposire may result in damage andwill vold your warranty
Caution:Don't mount the PT-920R with the lens facing into direct sunlight.
Prolonged exposure to direct sunlight will damage the sensor.

PT-920R can be installed on the vertical wall by using mounting pedestal. Choosing the observed
areas becomes more convenient by adjusting the PT-920R support platform at any point of view.
Step 1. Find a suitable location to mount the camera.
www.vipcam.cn –22
Step 2. Using the mounting bracket as a guide, mark the location of the two mounting holes.
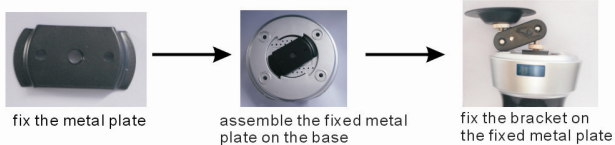Step 3. Drill a "1/4"Hole for each screw.
Step 4. Use a hammer to tap the two plastic anchors into the holes.
Step 5. Use the two screws to fasten the bracket to the wall.
Step 6. Place the camera on the mounting bracket platform and rotate the camera to be facing in the
desired direction.
Step 7. Secure the camera to the mounting bracket using the thumbscrewlocated on the botton of the
platform.
Step 8. Loosen the tilt adjust the thumbacrew and tilt the camera toward the arealto be observed

fix the metal plate   assemble the fixed metal   fix the bracket on
                            plate on the base   the fixed metal plate

for detailed install position/ instruction, please refer to next page

System Configuration

installation chart

1.flat   2.install it at the wall

100° 100° bracket

100° 190°

190° 190°

                          bracket 100°

keep flat on the ground   hang head upward   hang head downwards
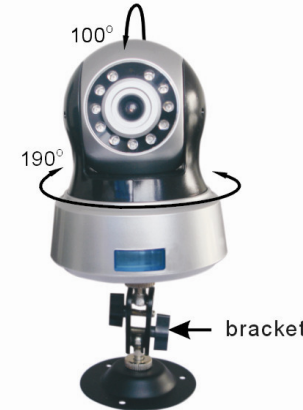
Pan(190° maximum)   Pan(190° maximum)   Pan(190° maximum)
Tilt(100° maximum)   Tilt(100° maximum)   Tilt(100° maximum)

5 System Configuration
5.1 System status

System Configuration

Figure 26 System Status View   Figure 27 User management view

5.2 User Management

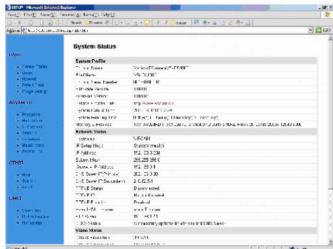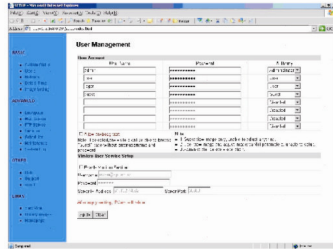| Administrator:	This permission allows the user have full authority including writing permission to all the sections.
User:	This permission level allows the user access to PT-920R menus without the setup authority.
Guest:	This permission level allows the user to access Vilar IP camera's video only. The user does not have any permission to change it.
disabled	Make the user account disable, no access.

this, any temporally visitors may enter Guest Zone to see the video without enter any username/password. If you unchecked this (default), the visitors have to enter at least a "Guest"permission username/password to visit the "Guest Zone" At any time, the"User Zone"only allows"User""Administrator"permission to visit. "Vilar Backbone"Service Setup: This service as a connection of central server is useful for customer. You can choose start "Vilar Backbone"function and enter the correct user name, password, IP address of server and port information. (Vilar Backbone service depends on the Vlilar Camera addition service provided by network carrier. Please connect your camera dealer to make sure the availability of this service in your area and the relative charge of this service.)

System Configuration
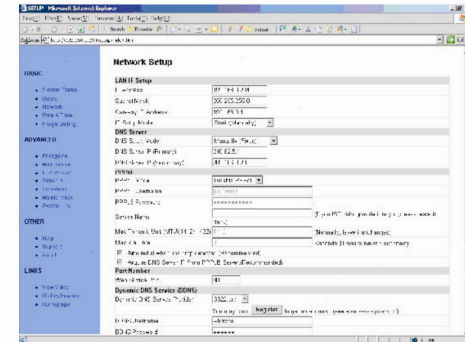
5.3Network

Figure 22 Network setup

5.4 Date and Time
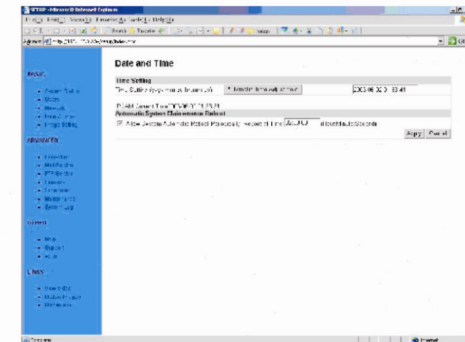
Figure 23 Date and time setup view

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System Configuration

Figure 27 Input Password in web browser(Activex)
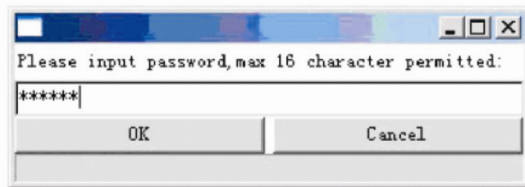
Figure 28 Input & Output Pins Connection

System Configuration

5.7Email

Figure 29 Email Setup View

5.8FTP

Figure 30 FTP Setup View

System Configuration

5.9 Sensors and Motion Detection

Figure 31 Sensors and Motion Detection Setup View

5.10 Scheduler Trigger

Figure 32 Scheduler Trigger Setup View

System Configuration

5.11 System Maintenance

Figure 33 System Maintenance View

5.12 System Log

Figure 34 System Log View

Visit PT-920R over INTERNET

5.13 Guest Zone
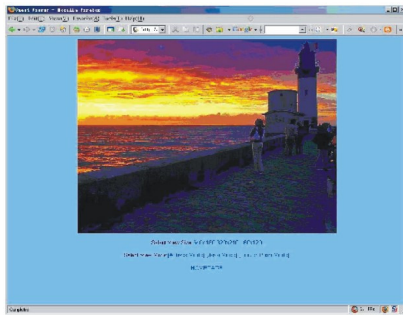
Figure 34 "Guest Zone" View

6 Visit PT-920R over INTERNET

The common environment for PT-920R using as follow:
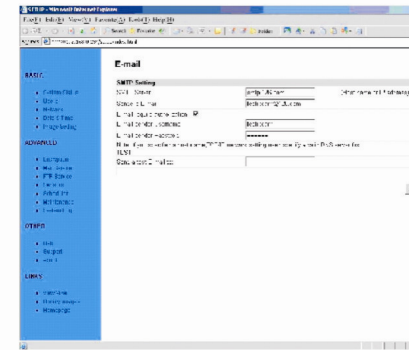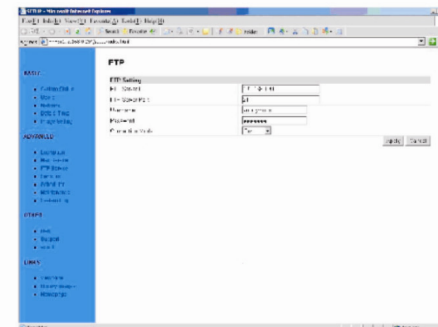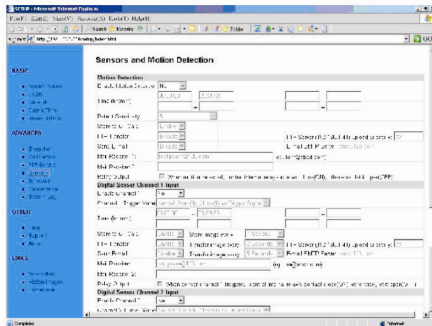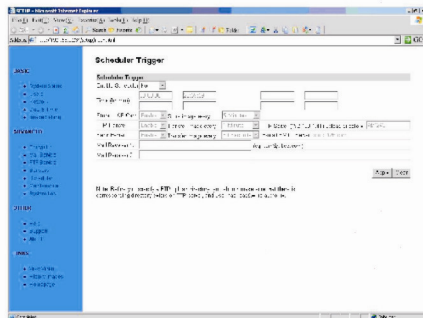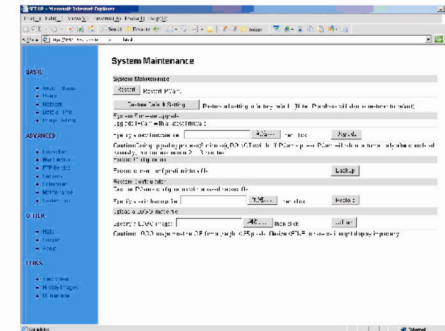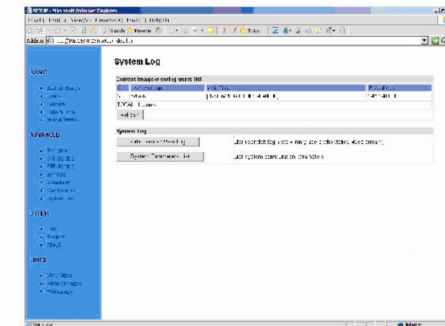
1、 In Local Area Network (LAN) only.
2、 Direct connect to INTERNET via xDSL (PPPoE) Modem.
3、 Share one INTERNET connectionwith other computer, and connect to INTERNET via a gateway or router.
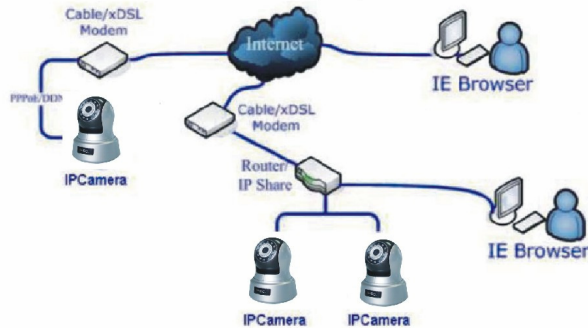
Figure 36 "Vilar IP camera's Application Environment

Visit PT-920R over INTERNET

Internet connection, you can access your cameras by web browser from anywhere on the Internet. To do this you need to:

1、 Know your WAN (Internet) IP address. This is the IP address that your Internet Service Provider gives you to access the Internet. It may be static (always the same) or dynamic (can change from time to time).
2、 Make sure the router or gateway can visit the PT-920R through the port 80. 3Make sure your camera's default gateway is set as your LAN (local) IP address of your router/gateway.

6.1 WAN IP Address

The WAN IP address is necessary when you want connect your home or business network to the internet. The WAN IP address is different from the LAN IP address. It can be seeing by outside network, and it is supplied by Internet Service Provider to grant you access the internet.

Your WAN IP address is stored by your gateway router which uses it to connect the Internet. All the devices on your network connect to the Internet via your gateway router. You can find your current WAN IP address by checking your router's status page. Also there are various websites such as www.whatismyip.com will help you find your current IP address. Theterm gateway is used generically to mean the device that connects a local

Visit PT-920R over INTERNET

Static versus Dynamic IP address

The IP address (or addresses) your ISP has provided will either be static (it means the IP address never change), or dynamic (it means the IP address change periodically). There are more challenges can be bring by dynamic address, because the IP address might has changed when you visiting. The change frequency of dynamic address depends on your Service Provider. Furthermore the new address will be produced when the DSL modem reconnecting or reboot. The IP address is not necessary when you using the DDNS via the domain name to find your network such as tom.vipcam.cm.

6.2 Network Address Translation (NAT)

Most home routers and business firewalls have the network address translation (NAT) function. NAT can translate your external network or WAN IP address as your getaway router inside address. You can imagine the router includes two parts, one is LAN (inside part) another one is WAN (outside or internet part). A connection requirement can not reach your router from the internet until you have intercalated it. This process is known as port forwarding or port redirecting.

6.3 Port Forwarding

All the TCP/IP (internet) networks are using software port to connect with each other. The port can be considered as channels of television. Default all the websites are through the channel 80 (port), the websites and the images can be sent via the port 80 to your browser by PT-920R .

Visit PT-920R over INTERNET

Therefore this channel (port) can received the visiting application without the encumbrance from your router/firewall. You can visit PT-920R from the external network and those two ports have to transmitting or redirecting on the LAN IP address port by your gateway router. Thus the setting software of your router has to possessing transmission or redirecting function.

> **Note:** Forwarding ports to your camera does not pose any additional security risk to your LAN.

6.4 Default Gateway

Devices(PCS, camera,etc.) On your network connect to the internet via a gateway.For most home networks,a NAT router serves as the gateway. Forbusiness LANS,the gateway may be a PC running gateway software. In order to connect all devices on your network with internet,gateway has to know the LAN IP address of itseif If your camera is set up to use DHCP,then it will retrieve this address automatically from your router.
However, If you have configured your camera to use a static IP address,you must also be sure that you have set the correct gateway IP address in order to connect your camera a to the internet

> Note: It is impossible to test Wan (internet) visit your cameras by a PC connected to the lan. To be sure that your cameras ate accesibleby the internet ,you can asd some one who does not in your Lan by visit your PT-920R from internet by using your WAN IP adress.

You camera is now live on the internet, Browsing your camera from the internet is the same as browsing on your Lan except that you must enter your wan ip address(or camera domain name if you 've set up a DDNS service)instead of the LAN IP address.

6.5 Accessing Multiple cameras on the internet
You have to assign different port to each PT-920R when accessing multiple

Visit PT-920R **over INTERNET**

cameras on the internet. Because of that your gateway can transmitting the correct request to correspond camera. All the websites requests will be sent to port 80 by browser if the default setting does not change. However the port 80 transmit the request to one LAN IP address only, therefore all the websites requests on the port 80 will send to that address.

To instruct your browser to use a different port, other than 80, to access a web page, you would add the port number at the end of the IP address or URL, separated by a colon. For example, to access a camera on port 81 if your WAN IPaddressis210.82.13.21,you would enter http://210.82.13.21:81intoyour browser's address bar. You can do the same thing with a URL such as http://tom.vipcam.cn:81.

The steps to set up remote access are as follows:

1. Go to your gateway router setup page and configure port forwarding to port 81 to LAN IP address of Camera_1(e.g. 192.168.0.151) and port 82 to the LAN IP address of Camera_2(e.g. 192.168.0.152).
2. From somewhere on the Internet, open up Internet Explorer and enter your WAN IP address followed by a colon and the port number such as: http://210.82.13.21:81 to access Camera_1.

Note: Some routers use port 80 for remote configuration and it's possible to experience a conflict when using port 80 for camera access.Therefore,you prefer to use port 81 for your first camera, port 82 for the srcond,etc……
This setup also makes it easier to remember which camera is using a particular port number

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Before access your camera over internet,you have to disableantivirus soft and firewall. After login IP camera,you can enable both

6.6 Dynamic Domain name server(DDNS)
WAN IP address is when you want to access your network over the Internet.
Your internet service provider (ISP) provides you at least one IP address which you use to connect to the internet. The address you get may be static,meaning it never changes, or dynamic,meaning it is likely to changeperiodicalty. Just how often it changes, depends on your ISP. A dynamic IPaddress complicates remote access since you may not know what your cirrent WAN IP address is when you want to access your network over the internet

The solution to the dynamic IP address problem comes in the form of a dynamic DNS service.
The Internet uses DNS servers to lookup domain names and translates them into IP addresses. Domain names, such as www.vipcam.cn, are easy to remember as aliases of IP addresses.

A dynamic DNS service
is unique because it provides a means of updating your IP address so that your listing will remain current when your IP address changes. There are several excellent DDNS services available on the Internet and best of all most are free to use. Two such services you can use are www.3322.org and www.vipcam.cn . You'll need to register with the service and set up the domain name of your choice to begin using it. Please refer to the home page of the service for detailed instructions.

A DDNS service works by uploading your WAN IP address to its servers periodically. Your gateway–router may support DDNS directly, in which case you can enter your DDNS account information into your router and it will update the DDNS servers automatically when your IP address changes. Please consult your router's documentation for more information. If your router does not support DDNS, you can setup the Vilar IP camera's DDNS client.

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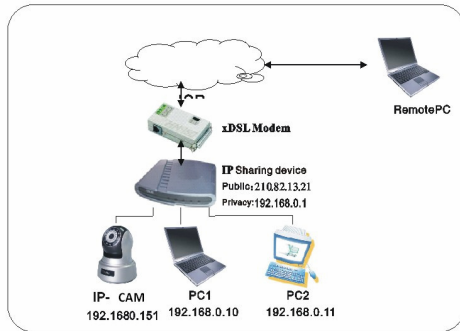
6.7 configuration example

Figure 37 Typical Network Environments

At home or business LAN, one or more computers and Vilat IP camera are\connected to the same IP Sharing Device(Gateway/Router), IP Sharing Devicewas assigned a pulic IP Address by TSP(e.g.210.82. 13.21)) while each devices in LAN has assigned a different LAN IP(e.g.192.168.0.151/192.168.0.10/192. 168.0.11).

Now, every LAN devices connect to INTERNET via NAT function provided by IP Sharing Device. However, from the point of remote PC's view, remote PC see only an IP Sharing Device,it doesn't know how many PC sex is inside privacy LAN. This IP Sharing Device is also acted as a firewall.

Thus, we have changed the setting of IP Sharing Device; let public PC has the opportunity to access LAN devices, e.g. IP–001A

We can achieve this goal by enable Reversal NAT (RNAT) function of IP Sharing Device.

1、 "Virtual Server",Many routers have "Virtual Server"support. You must forward the WAN 80 TCP port to LAN Vilar IP camera'sI P and Port. (If you visit 210.82.13.21's 80 port outside, you will be forward to LAN 192.168.0.2's 80 port).

2、 Another method is the "DMZ Host" If enabled to use a LAN device as the DMZ host, the outside PC will be able visit this LAN device directly, as if

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there is no IP Sharing Device exists. This method support only one LAN device exposed to the WAN. Thus, if you have more Vilar IP cameras, you have to use the above method.

Take D-Link (http://www.dlink.com) DI-604/DI-614+/DI-624 as an example:

1) Login to your router;

2) In WAN configuration, input the PPPoE username and password provided by your ISP;

3) Click **Advanced** on Top of homepage;

4) Click **Virtual Server** (Note: If you use Virtual Server mode, you must turn DMZ host function off first. DMZ Host function will disable all Virtual Server function)

5) Input the following information on page:

Enabled/Disabled: **Enabled**

Name: **VilarCamera**

Private IP: **Input Vilar IP camera's Address, e.g.** 192.168.0.151

Protocol Type: **TCP**

Private Port: **80**

Public Port: **80**

Schedule: **Always**

6) Click **Apply** to save. Vilar IP camera can be accessed in WAN.

Technical Parameters

7、Technical Parameters

Items	Description
Video	
Video Input	Single high quality CMOS Sensor (300，000 pixels)
Compression	Motion–JPEG
FPS	30 frame per second (640x480) maximum.
Resolution	VGA (640x480) QVGA (320x240) QQVGA (160x120) Optional
Typical Bandwidth	160x120@10fps : 300 kilobits ~ 480 kilobits 320x240@10fps : 640 kilobits ~ 960 kilobits 640x480@10fps : 3.2 Megabits ~ 4.8 Megabits 160x120@30fps : 900 kilobits ~ 1.44 Megabits 320x240@30fps : 1.92 Megabits ~ 2.88 Megabits 640x480@30fps : 9.6 Megabits ~ 14.4 Megabits
Interface	
Digital Input	2–way Open/Close Input
Relay Output	1–way Relay Output (120V, AC/1A; 24V,DC/1A)
Connection	5 Pins
Network	
Interface	Ethernet 10/100Base–T RJ–45

Technical Parameters

7、Technical Parameters

Protocol	Transport: UDP/IP，TCP/IP，SMTP/HTTP/FTP
	Other: DNS and DHCP client, DDNS
Power	
Supply	5V DC
Consumption	5W Maximum
Physical	
Cell	ABS plastic
Packing Size	27 × 24 × 12.4 cm
Temperature	0℃~45℃
Humidity	50℃ 95%
Management	
System Setup	Web Page
Upgrade	Firmware upgrade by Web
Other	
CPU	32bit ARM@66MHz frequency.
SDRAM	16MByte
FLASH	4MByte