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SIERA ELECTRONICS
SOUND & SECURITY

IP CAMERA
INSTRUCTION MANUAL

☑ **VSP 3001 IP CAMERA**

www.sieraelectronics.com

PREFACE

Warning: Please read this manual carefully before using.

Complete package should include the following items:

AC adaptor	1 pc
category 5 cross cable	1 pc
I/O terminal cable	1 pc
instruction manual	1 pc

CONTENTS

1 INTRODUCTION

1.1 Features

◆ Built-in web server, high quality JPEG image can be displayed through Internet browser upon connection with Ethernet.

◆ Motion JPEG can be up to 15 frames per second with high resolution 640x480.

◆ Through Internet, pan/tilt heads and lens can be conveniently controlled to meet with long-range monitoring.

◆ Based on ASP/JAVA script, web server can provide max. platform compatibility.

◆ Based on script CGI/ASP control, the server can offer convenience for the user to integrate applications.

◆ Output of E-mail,TFTP,I/O triggered with date, time and I/O input.

◆ 2 users security control, prevent unregistered users accessing the system.

◆ Recording through IE.
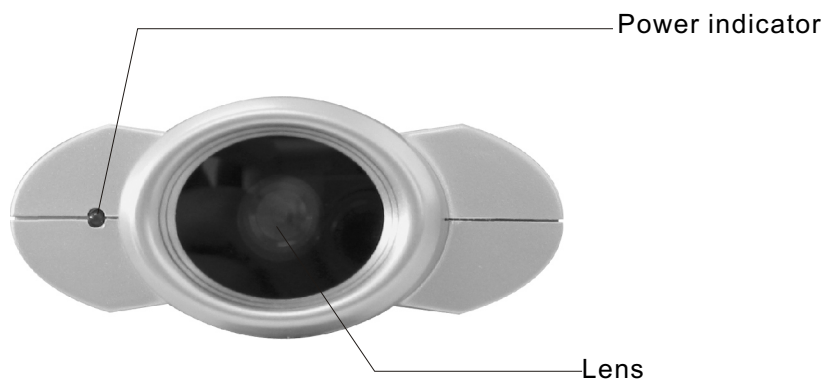
◆ Recording through FTP.

1.2 System requirements

The requirements for PC through which the network camera pages can be browsed are as below:

| Item	Description
Operation system	Windows 98 Windows 2000 Windows ME Windows NT 4.0 Windows Xp
Network protocol	TCP/IP Intenet Agreement(HTTP, FTP, SMTP, TCP, UDP, ICMP，IP)
Interface	10/100Mbps
Web browser	Internet Explorer 5.0 or later Netscape Navigator 4.7 or later

Remarks: the CPU is recommended to be Pentium II (300MHz) or greater, which can prevent the hardware restriction.

2   PANEL DESCRIPTION

2.1 Front view

Power indicator

Lens

2.2 Rear view

Ethernet indicator

Ethernet port

I/O connector

DC in jack
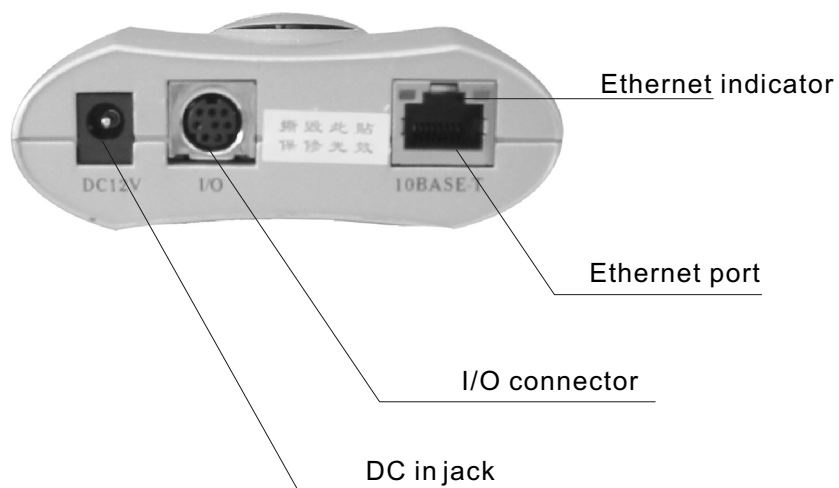
3   INSTALLATION

3.1 Cautions

Please read all safety instructions carefully before installation.

◆ **VSP-3001** IP camera should installed indoors generally. The prolonged exposure
   under the sunlight or other strong lights shall accelerate the aging of the shell and
   shorten the using term.

◆ Please install the IP camera at safe site. The fall may cause the damage.

◆ Do not place the network camera near water and assure the IP camera   in a
   dry circumstance with aeration.

◆ Please use the proper input power source(input AC 220v and output DC12v/1A).
   Don't leave the cables easy-touched to prevent the stumble.

◆ Don't forcedly turn the pan/tilt head or lens to avoid the damage.

◆ Don't touch the lens of the sensor. The fingerprint smudge shall cause the blur or no
   image displayed and it also shall hurt the paint on the lens.

◆ Please unplug the AC adaptor before cleaning the network camera. Please wipe wet
   cloth only and don't use chemical and aerosol products.

◆ Screen protection is recommended. The long-time display for same image of the
   PC shall damage the monitor.

◆ Please take the network camera to the qualified serviceman under the below cases:
   A、when the power supply cord or plug is damaged.
   B、when liquid has been spilled into the IP camera.
   C、when the network camera has been dropped and damaged.
   D、If the IP camera does not work normally after the setup and debug by
      operating instruction.
   E、If the network camera exhibits an irregular condition in performance.

3.2 Installation step

   A、Bracket installation: aim the screw of the bracket at the hole on the bottom and turn
      clockwise.
   B、Ethernet connectiona: use category 5 cross cable and RJ-45 linker to connect the
      network camera to the net. Use category 5 straight cable to connect with HUB/
      Switch or use category 5 cross cable when connecting directly to the PC.
   C、Confirm the specification of the AC adaptor(input AC220v,output DC12v,1A) and
      connect with the network camera.
   D、Check if the power source indicator is enlightened. If the net has been connected
       correctly, the net indicator will be enlightened within 1 second.

4 ILLUSTRATION FOR NET CONNECTION

He common connection programs for **VSP-3001** network camera:

4.1 Connecting directly to PC(through category 5 cross cable)

Cross reticle

Users
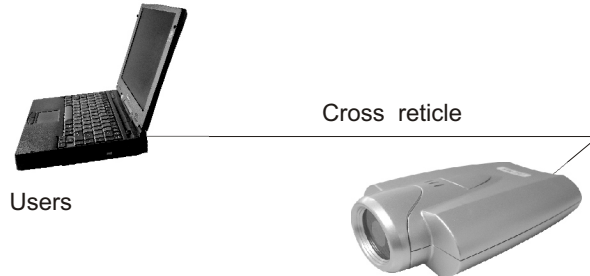
For this program, the page browsing requires the basic configuration as below for PC and IP camera:

A、 Connect correctly with the IP camera as above illustration.

B、 Set up the Ethernet card of the PC as auto or 10M half duplex mode.

C、 Set up the static IP address and the subnet masks. For example, IP address is 192.168.1.6 and subnet masks is 255.255.255.0, and ignore other setup of the net.

D、 enter the default IP address http://192.168.1.252 into the address field of the net browser.

4.2 Connecting to Intranet through HUB/Switch

Link Builder / Switcher

Users

Reticle

Record server
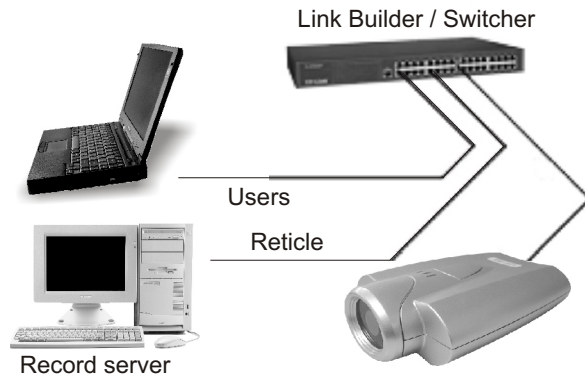
For this program, the page browsing requires the basic configuration as below for PC and network camera:

A、 Connect correctly with the network camera as above illustration.

B、 Set up the static IP address and the subnet masks. For example, IP address is 192.168.1.6 and subnet masks is 255.255.255.0, and ignore other setup of the net.

C、 enter the default IP address http://192.168.1.252 into the address field of the net browser.

4.3 Connecting to Internet through HUB/Switch/Router
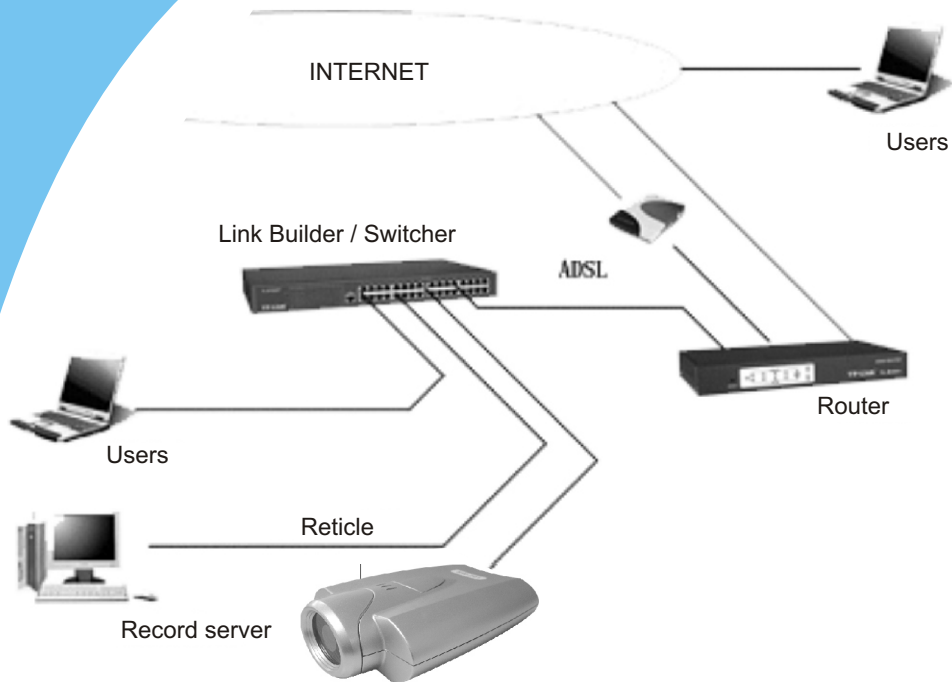
For this program, not only the basic setup of PC and IP camera but also the setup of Port Forwarding function of Router is required, so the visit for network camera besides Intranet is accessible. The Router should have the function of Network Address Transition(NAT) to transit the global address to local address and assign the different external port No. to each IP camera.

4.4 Access home page of IP camera

If the IP browser is Internet Explorer, the download for ActiveX is required. So, reset the security level of the IE as low level(Tools menu > Internet Options > Security tab > Custom level), and then enter HTTP://192.168.1.252 to the address field to open the home page of **VSP-3001** network camera. Click the Single Camera Screen Mode, and wait a minute till the image appearing, then set the security level to its original level.(The PC will save the program of ActiveX after reading it, so the security level can be set to its original level.)

If the IP browser is Netscape Navigator, please enter directly HTTP://192.168.1.252 to address field to open the home page of **VSP-3001** IP camera. Click the Single Camera Screen Mode, wait a minute and then the image will appear.

5 IP CAMERA PAGES

5.1 Home page
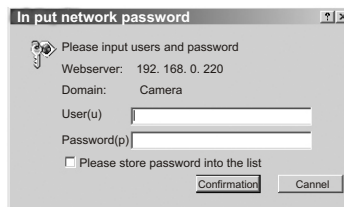

There are 3 options on home page:
1)、 image browsing (single camera screen/multi camera screen)
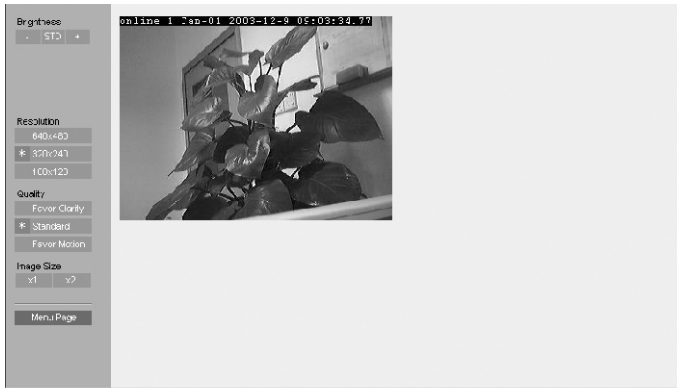2)、 configuration
3)、 help

5.2 Video page

Click single camera screen mode, following dialogue box appears:

factory parameters
user name：admin
password：admin

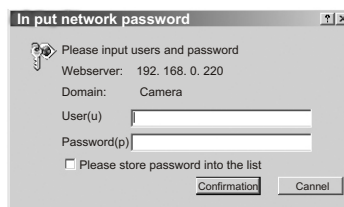Enter user name and password of administrator and general user, then following dialogue box appears:

click left operation bars to adjust the image directly:

| Brightness	17 levels
Resolution	640 × 480 320 × 240 160 × 120
Quality	favor clarity standard favor motion
Image size	x1 x2

5.3 Setup page

Click system configuration, following dialogue box will appear if the setup of administrator or general user has been made:

factory parameters
user name：admin
password：admin

Enter user name and password of administrator, then setup page appears.
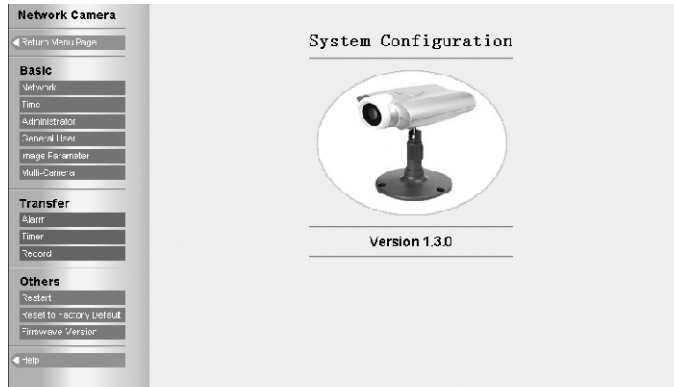
Basic setup	network	set up network parameters
	time	set up date and time
	administrator	set up user name and password of administrator
	general user	set up user name and password of general user
	image	set up image size
	multi-camera screen	set up multi-camera screen
Transfer	alarm trigger	
	timer trigger	
	FTP recording	
Others	restart	restart
	factory default	reset to factory default
	version	display version of hardware and software

5.4 Network

Name of network camera	4-15 English characters and 2-7 Chinese characters
Port no	The range is 1-65535(default:80). If there are 2 or more network cameras in 1 LAN and connect to Internet or other net through router, it will be possible to set different port no. for each network camera.
Assign IP address	Enter IP address and submit mask assigned by administrator to every data field.
Assign DHCP	DHCP(Dynamic Host Configuration Protocol):please enter the name of network camera if the system uses DHCP server function which assign IP address automatically.
Gateway	Enter the default gateway.
DNS	DNS(Domain Name Server):2 DNS IP addressescan be set up. Please set it on first data field for single IP address.
Network camera management server	log in for user name and password.
Bandwidth	It can restrict the transmit bandwidth.

Notes: please restart after click save to effect the settings you entered.

5.5 Time
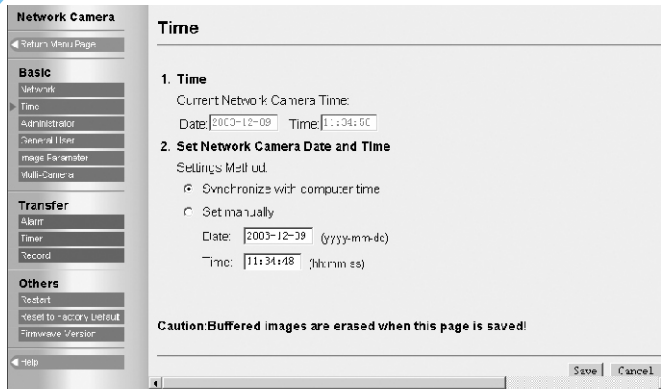
item	description	settings	remarks
1.current date and time	Display current date and time of IP camera.		
2.set up date and time	Adjust internal clock		
(1) have the same time with PC	Take the internal clock of network camera with the same time of the PC.		
(2) input by handwork	Input time by handwork to adjust the internal clock of network camera.	yyyy-mm-dd for year 1970 to 2039. hh:mm:ss for 24h mode.	

5.6 Administrator

[Authentication]:

[None]: anyone can access all pages.

[administrator only]:for setup page

[administrator]for setup page and [general user] for viewer page

[user name and password]:user name should be 4-15 English words or 2-7

Chinese characters. Password should be 4-15 English words or numbers. User name
and password should not be blank, ["], ['], [#], [&], [%], [=], [+], [?], [<], [>], [:].

5.7 General user

[general user information]: list all user name of general users. Functions for
delete and modify are offered.

[first login]:register a new general user. User name and password should not be
blank, ["], ['], [#], [&], [%], [=], [+], [?], [<], [>], [:].

5.8 Image settings
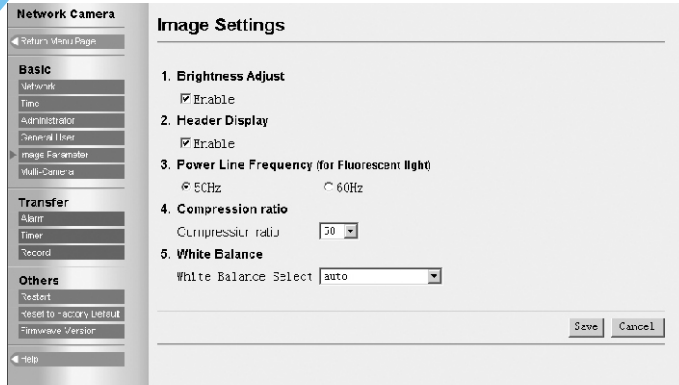
[brightness adjust]:17 levels, control the function for brightness adjustment.

[Header display]: display the name of network camera and time on image or not.

[Power line frequency]: 50HZ and 60HZ optional. Select correct power frequency and prevent fluorescent light interfering the image.

[Power indicator]: indicate the network camera is power on or not.

[Image size]:100 levels for optional. It means the ratio between images before and after compression.

[White balance]: according to different circumstance: auto, fixed indoor, fixed fluorescent, fixed outdoor and hold is optional.

5.9 Multi-camera screen
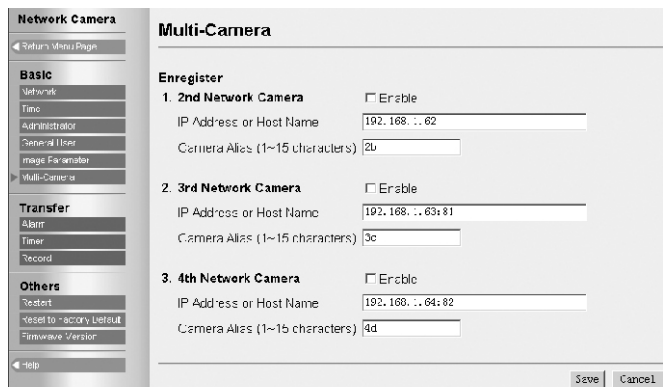
Can set up multi-camera screen, the number is up to 4.

5.10 Alarm trigger

The alarm mode means the transmission of pre and/or post alarm images held
in the buffer to specified address.

Alarm: select enable to confirm the alarm mode function.

[Alarm occur condition]: the alarm is subject to the rising or falling of voltage detected
by the I/O connector. rising: the alarm is subject to the rising of voltage detected by the
I/O connector. Falling: the alarm is subject to the falling of voltage detected by the I/O
connector.

[Image setting]: select the parameters for the image which shall be transferred. Image resolution: 640×480 / 320×240 / 160×120. Image quality: favor clarity / standard / favor motion

[Image buffer setting]: the images held in the buffer pre and/or post alarm in short-term. Select the image buffer frequency and the number of images which shall be transferred into the buffer pre and/or post alarm.

[Transfer method]: select FTP or E-mail.

[FTP transfer]：

Item	Description	Remarks
IP address or host name of FTP server	Host name: 1-255 English characters IP address: IP address of the FTP server	Should not be blank, ["], ['], [#], [&], [%], [=], [+], [?], [<], [>], [:].
port number	1−65535	
FTP method	select the FTP method: active or passive.	
login ID	login ID of the FTP server: 1-15 English characters.	
Password	0-15 English characters	
upload file path	The folder name of the FTP server into which the file upload.	Start with "/" and end with "/", Root directory: "/" (default).
over write setting	It means the naming rule for files uploaded repeatedly.	

[Mail transfer]：

Item	Description	Remarks
SMTP server address or host name	Name:1-255 English characters address: IP address	Should not be blank, ["], ['], [#], [&], [%], [=], [+], [?], [<], [>], [:].
User ID required or not	Enter the user ID or not is subject to the authentication requirement of SMTP server when send an E-mail.	User ID and password is not demanded when there is no authentication.
User ID	Enter the user ID if the authentication is required when send an E-mail.	
Password	Enter the password if the authentication is required when send an E-mail.	
From	The address to receive the E-mail.	
To	The address to send the E-mail.	0-63 English characters, 0-31 Chinese characters.
Subject	The subject of the E-mail	0-63 English characters, 0-31 Chinese characters.
Text	The text of the E-mail	

Notification to be sent when alarm occurs: send or not the E-mail of notification to specified E-mail address after alarm occurs.The E-mail of notification with no image enclosed includes text message only. The setting for E-mail is the same as the above.

Notes: VSP-3001 network camera will only operate correctly with mail server using SMTP (Simple Message Transfer Protocol), it is not available with the mail server accessed via web browser (address to receive the E-mail is an exception).

5.11 Transfer image in the timer mode

Timer mode means sending images to specified address when the clock reaches the pre-assigned time.

[Timer]: select the function of transferring image in the timer mode or not.

[Timer setting]: 8 timers is optional.

[Image setting]: select the parameters of images which shall be sent when it reaches the pre-assigned time. Resolution: 640×480 / 320×240 / 160×120. Image quality: favor clarity / standard / favor motion.

[Transfer method]: select the transfer method of the images when it reaches the pre-assigned time by FTP or E-mail. FTP and E-mail setting refers to section 4.3.7(alarm trigger)

5.12 Background recording function

Background recording means sending images to background FTP server for recording at specified intervals.

[Record]: select the background recording function or not.

[Image setting]: select the parameters of the image recorded in background. Resolution: 640×480 / 320×240 / 160×120. Image quality: favor clarity/stand/ favor motion

[image buffer frequency setting]: select the frequency for sending images for recording.

[FTP server]: refer to section 4.3.7-alarm trigger-FTP.

[Notification to be sent when record fail]: select the function to send an E-mail of notification to specified address or not when record fail or record success after retry. The setting for E-mail refers to section 4.3.7-alarm trigger-E-mail.

6 RECORDING FUNCTION

6.1 Activex control recording

ActiveX control recording function is for IE browser only, and can not for Netscape Navigator browser.

Please right-click the mouse at the image and select the recording setting in the option box appeared when browsing.

[File path]: select the folder in which JPEG files saved.

[File name]: enter the file mark. Actual recorder file is name(file+date+time)

[interval]：
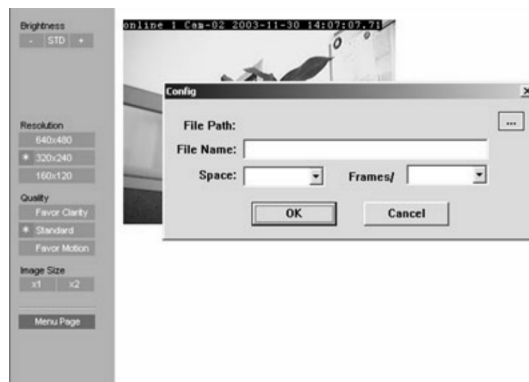
6.2 FTP recording

The FTP server is demanded. For example, Serv-U as a common type at present is suitable for personal application with features of simple setting, strong function and high stability. It can provide not only the function for downloading of files, but also the general protection for system security. The setting of password and access licensing for different users are optional. Please refer to the relevant book about Serv-U written by lv da rong.

FTP setting refers to section 4.3.7(alarm trigger)

6.3 Playback function

The image can be played by free media-playback tool provided by our company or ACDSee.

Open the media-playback tool, open the selected file, and play the file. The function of delay is adjustable and the function of circle is selectable. The date and time should be the same as PC.

7   I/O DESCRIPTION

7.1 About I/O

The I/O connector controls input and output of signal, and it includes 1 I/O input terminal, 1 I/O output terminal and 1 RS-232 converter or half duplex RS-485 port.
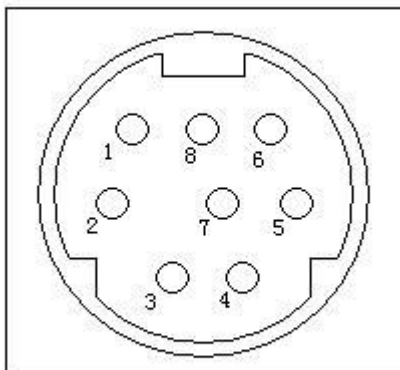
Port description:

Port	Name	Description
1	AGND	analog ground
2	485B/RXD	
3	485A/TXD	
4	DGND	digital ground
5	+12V	max. output current:100mA
6	I/O-OUT	
7	I/O-IN	
8	hold	hold

Notes: the current(+12V) output to the peripheral equipment should not exceed 100mA, otherwise the overloading is possible to damage the AV adapter and inner components.

7.2 Example about I/O
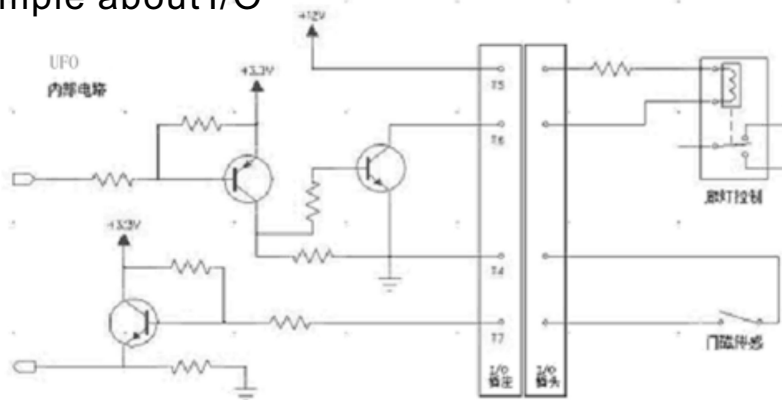
8 APPENDIX

Appendix 1: Reset to factory default

In some case, we need reset the server to factory default which can operate on Setup Page. If the user can not login the Setup Page(such as forgetting the user name and the password), it will be available for resetting to factory default through ARP and PING to re-assign the IP address.

Notes: after the success of re-assigning the IP address through ARP and PING, all other settings shall be reset to factory default except IP address setting.

Assign IP address through ARP notes before operation:

Check the correct connection to the net and with the power for IP camera.
Obtain a unique IP address from administrator.
MAC address: there is a unique Ethernet address for every **VSP-3001** IP camera(MAC address is labeled on bottom of the IP camera). The Ethernet address is a number with 12 figures(such as 00-0c-e8-xx-xx-xx).
Fox example, the IP address for PC is 192.168.1.6, the IP address for **VSP-3001** IP camera will be set as 192.168.1.61, the MAC address is 00-0c-e8-xx-xx-xx.
The IP address of **VSP-3001** network camera must have the same IP domain with the IP address of PC(it means the same subnet mask). For example, the IP address of PC is 192.168.1.6, the IP address of network camera is 192.168.1.61, and the subnet mask is 255.255.255.0. If the subnet mask is 255.255.255.128 or higher, the domain will not cover 192.168.1.61 and the setting will not be effective.

Operation procedure：

1、IN operation system of Windows, open the DOS window and operate as <start→all programs→accessory→command prompt> to DOS.

2、clear ARP: enter<arp d>.

3、Set up ARP: enter<arp s 192.168.1.61 00-0c-e8-00-00-01>.

4、PING: enter<ping t 192.168.1.61>.

5、Turn off the network camera.

6、Turn on the network camera again.

7、Enter Ctrl-c after Pinging, and enter <arp-d> to clear ARP statistics.

8、Enter <exit> to quit the DOS.

Display as below:

```
C:\>arp -d
C:\>arp -s 192.168.1.61 00-0c-e8-00-00-01
C:\>ping -t 192.168.1.61
Pinging 192.168.1.61 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Reply from 192.168.1.61: bytes=32 time=5ms TTL=255
Reply from 192.168.1.61: bytes=32 time=4ms TTL=255
Reply from 192.168.1.61: bytes=32 time=4ms TTL=255
Reply from 192.168.1.61: bytes=32 time=4ms TTL=255
Ping statistics for 192.168.1.61:
      Packets: Sent = 7, Received = 4, Lost = 3 (42% loss),Approximate round
trip times in milli-seconds:
   Minimum = 4ms, Maximum =  5ms, Average =  2ms
Control-C
^C
C:\>arp -d
C:\>exit
```

Appendix 2: Troubleshooting

Problem	Cause	Remedy
can not access the network camera via browser	the problem of Ethernet connection	Please check the **VSP-3001** network camera, the Hub, the Switch and Ethernet indicator. Check their connection if there is any abnormity.
	conflict of IP address	Disconnect the Ethernet connection, perform PING. The success of PING shows a conflict for IP address, so re-assign the IP address of **VSP-3001** network camera is needed.
	The IP address is in different subnet. There is problem in setting of gateway.	Check if the IP address of **VSP-3001** network camera is in the same subnet with your workstation. 1.Click "start>setting>control panel>network" 2.Select TCP/IP ADAPTOR, and click "Properties". 3.click "IP address" heck the IP address and the subnet mask. Please check carefully the settings such as IP address, subnet mask, gateway and DNS if the workstation and **VSP-3001** network camera is not in the same subnet. When necessary, it will be required to re-assign the IP address of **VSP-3001** network camera in the same subnet.
when the image does not appear	ActiveX	If the web browser is Internet Explorer, the download for ActiveX is required. So, reset the security level of the IE as low level Click "Tools menu > Internet Options > Security tab > Custom level". The PC will save the program of ActiveX after reading it, so the security level can be set to its original level.
image delay	Bandwidth and other reasons	The frame rate is subject to the following conditions: 1. Display mode, resolution, image quality and bandwidth. 2. Performance of PC, network, theme enviroment(brightness, theme and more) 3. Overmany users visit the network camera simultaneously will prevent the image updating quickly. 4. For network cameras, if the images update slowly, please use Switch instead of HUB.
The power LED indicator does not light up.	AC adaptor	Please check the standard AC adaptor and the AC power.
When forgetting the password of setup page	Password	Use ARP and PING to re-assign the IP address of network camera. Reset the user name of administrator and the password after resetting to factory default. Please refer to chapter 3.
Forget the IP address of network camera	IP address	Use ARP and PING to re-assign the IP address of network camera. Reset the user name of administrator and the password after resetting to factory default. Please refer to chapter 3.

Appendix 3: Specification

Hardware	CPU: 32 Bits RISC ROM: 2M Bytes Flash ROM RAM: 16M Bytes SDRAM 1 RJ-45 for Ethernet 1 I/O input terminal and 1 I/O output terminal
Image size	100 levels are optional
Image	Brightness
Resolution	NTSC/PAL: 640x480, 320x240, 160x120
Ethernet port	Ethernet(10 Base-T)
Network protocol	TCP/UDP/IP, ARP, ICMP, HTTP, TFTP, Telnet, SMTP
Performance	max. 30 frames/second. Net: max. 300Kbytes/second
Trigger and response	Trigger: I/O input/timer(frequency/motion detection Response: TFTP / E-mail / I/O output to peripheral equipment
Installation	Assign the IP address: use ARP or through administrator page
Update firmware	through TELNET
System requirement	Microsoft IE5.x or later, Netscape Navigator 4.x or later, Win98/NT/2000/XP
Security	2 layer password protection
Operation temperature	0℃ - 40 ℃
Humidity	20-80 %
Power	DC12V, 1A
Consumption	<10 watts
Dimension	100×77mm
Weight	0.60kg with power

* Frame rate will change with the condition of a network and the PC performance.

* A sensor must be attached for alarm mode.