CameraServer

CS3104

User's Manual

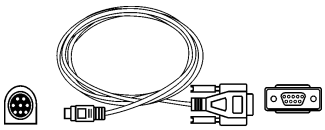
Industrial Video and Control

Package Contents

If any of the following items are missing, please contact your reseller.

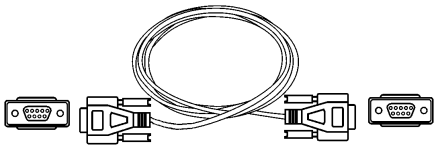
☑ Video Server

☑ Camera control cable



☑ Power adapter

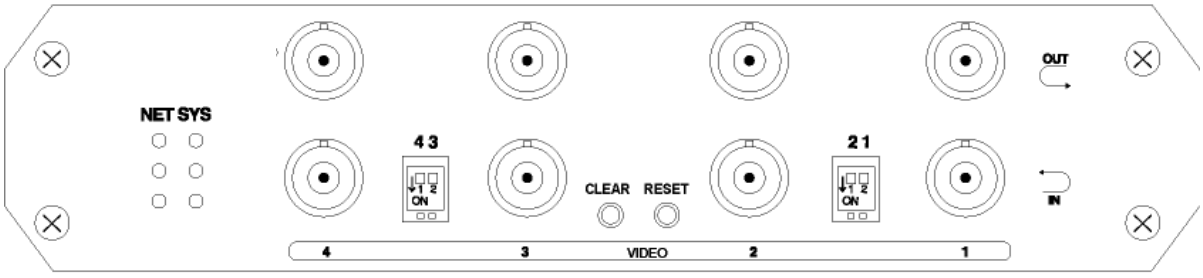
☑ Null modem cable



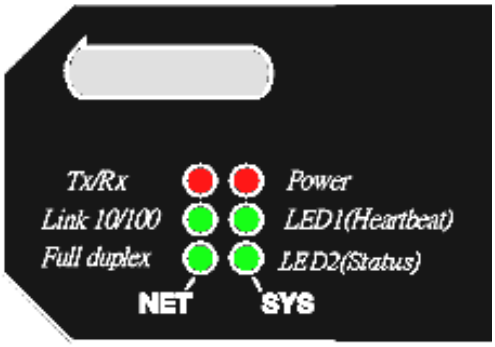
☑ Two I/O terminal connectors

Physical Description

Front Panel



Status LED's



Each time Video Server starts up, it will perform power-on-self-test, abbreviated as POST, to examine every hardware module. As soon as the administrator plugs in the power connector both LED's under the power LED will flash one by one until the diagnosis is done. If the result is good, both status LED's will turn off for a while and then follows the pattern below. If any module fails, refer to the Appendix A for the error pattern and follow the trouble-shooting procedures. If the system still cannot operate normally, please contact your reseller for technical service.

Network Interface	Condition	LED1 (Heartbeat)	LED2 (Status)
Ethernet	before IP installed	OFF	OFF
	after IP installed	Blink	OFF
	during camera control	Blink	Blink
PPP with modem	after POST	Blink	ON
	during camera control	Blink	Blink
PPP with null modem	before connected	ON	ON
	after connected	Blink	ON
	during camera control	Blink	Blink

BNC video inputs "IN" & outputs "OUT"

Video Server allows up to four cameras attached at the same time. To ensure video modulation type being detected correctly, cameras should be attached sequentially from "VIDEO1" to "VIDEO4" and powered on before Video Server is powered on. There are also four loop-through connectors of video outputs for conjunction with other capturing devices like time-lapsed VCR. In such case, read the next paragraph for correct settings.

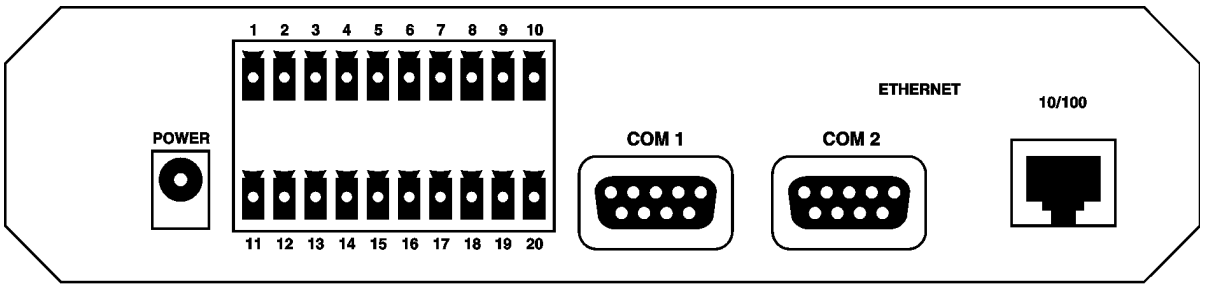
DIP switches "1" to "4"

There are four DIP switches numbered from "1" to "4" in the front panel regarding of each video input. They are used to enable the 75-ohm resistance of video impedance. They should be kept ON if there is only one camera connected to each video input. If users want to connect another device such as VCR or multiplexer to the video output, the switch should be turned up to disable the impedance.

Auxiliary buttons "CLEAR" & "RESET"

There are two buttons located at the center of the front panel, one is labeled "CLEAR" and the other is labeled "RESET". Refer to the Appendix Troubleshooting for the detailed usage of system recovery.

Rear Panel



Ethernet 10/100 socket

Connect to an Ethernet network with a UTP category 5 cable of length shorter than 100 meters according to the standard. Once the Ethernet cable is connected without error, Video Server will utilize the Ethernet interface prior to the modem attached to COM2.

COM1 port

This RS232 serial port is dedicated to controlling the PTZ cameras attached to COM1 unless the administrator pre-configures COM1 as an RS485 interface that is accessed through two pins in the general I/O terminal block.

COM2 port

This RS232 serial port can connect with a modem or the included null modem cable to utilize dial-up network when Ethernet is not available. If Video Server operates with an Ethernet interface, the administrator may use this port to control another PTZ cameras attached to this serial port.

General I/O terminal block

Video Server provides a very flexible general I/O interface to combine with the user's security devices such as sensors, alarms, lighting or door locks. Two green connectors are included in the package to connect the external devices. The general I/O terminal block has twenty pins for device control. These pins can be divided into three categories based on their functions, including power source, RS485 and digital inputs and outputs.

No.	Pin description	Regulation
1	DC power output(-)	Max. 500mA at 12V DC
2	DC power output(+)	Max. 500mA at 12V DC
3	Relay output 2 – Normal Close	Max. 1A, 24V DC or 0.5A, 125V AC
4	Relay output 2 – Common	Short with NC at initial state
5	Relay output 2 – Normal Open	Max. 1A, 24V DC or 0.5A, 125V AC
6	Relay output 1 – Normal Close	Max. 1A, 24V DC or 0.5A, 125V AC
7	Relay output 1 – Common	Short with NC at initial state
8	Relay output 1 – Normal Open	Max. 1A, 24V DC or 0.5A, 125V AC
9	RS485 A	D+, non-inverting
10	RS485 B	D-, inverting
11	External power input	Min. 1.5A, 12~15V AC or DC
12	External power input	Min. 1.5A, 12~15V AC or DC
13	Opto-isolated sensor input 1(+)	Max. 50mA, 12V DC
14	Opto-isolated sensor input 1(-)	Ground
15	Opto-isolated sensor input 2(+)	Max. 50mA, 12V DC
16	Opto-isolated sensor input 2(-)	Ground

17	Opto-isolated sensor input 3(+)	Max. 50mA, 12V DC
18	Opto-isolated sensor input 3(-)	Ground
19	Opto-isolated sensor input 4(+)	Max. 50mA, 12V DC
20	Opto-isolated sensor input 4(-)	Ground

Power source

Pair of pin 11, 12 of AC or DC input is a replacement with the power adapter in case the range cannot meet the requirement. The voltage of the power source can be AC or DC and should fall in the range between 12V and 15V. Polarity does not matter. The DC output through Pin 1, 2 is fed from power adapter of Video Server or pin 11 and pin 12 if an external power source is attached. The current of external devices is limited to less than 500mA.

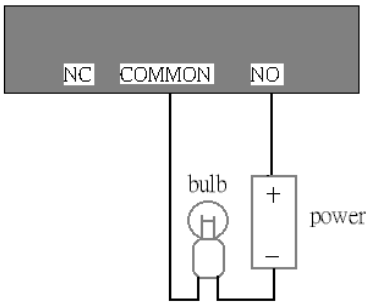
The power adapter of Video Server and the external power supply are prohibited to exist together. Only one source can feed power to Video Server. Improper usage will result in serious damage.

RS485 interface

If the device connected to COM1 has an RS485 interface, wire two control lines to pin 9 and pin 10. After switching to RS485 on the configuration page, the PTZ control commands will be directed through pin 9 and pin 10. If the distance from the controlled device is too far to allow accurate function, an external power source may be used to amplify the RS485 signal.

Digital I/O control

Video Server provides four pairs of digital inputs and two sets of relay switches. Pin 13 to pin 20 can be connected to external sensors and the state of voltage will be monitored according to the programmed conditions on the configuration page or the external script file. Both relay switches can be used to turn on or off external devices. When the system starts up, COMMON of both relay switches will be short with NC. A simple diagram of example is shown below.



If DI1 in configuration is set as rising to drive DO1 to high that denotes COMMON of DO1 short with NO, then the bulb will light when DI1 signal changes from 0V to 12V.

How to Use

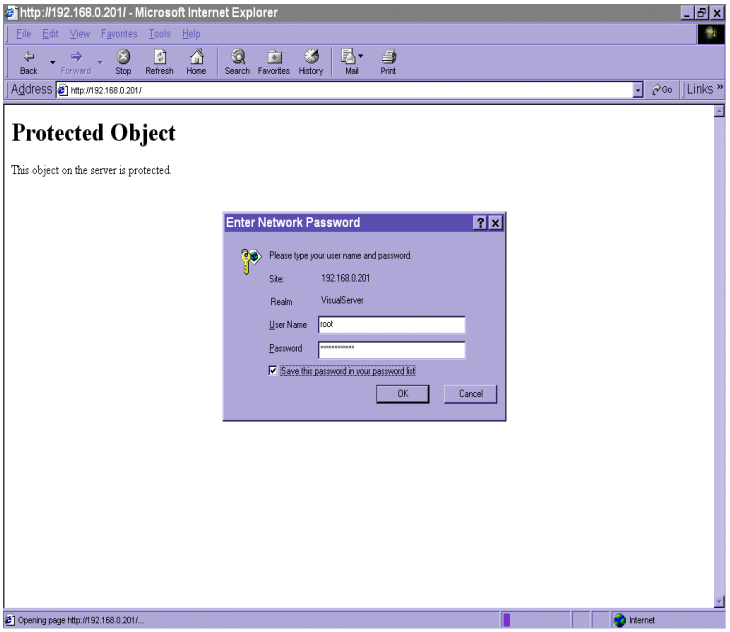
Open your familiar web browser and connect to Video Server just like a general web site and the video will present on demand. Make sure the web address of the target Video Server is accurate.

Authentication

After opening the Web browser and typing in the URL of Video Server, a dialogue window will pop out to request a username and password. For administrator's initial usage of Video Server, enter the username as "**root**" and the password as the serial number in capital letters. The serial number can be found on the labels under the body of Video Server and the top side of the carton. The primary users will be allowed to enter as soon as the administrator finishes adding user profiles. Upon successful authentication, the main page will be displayed.

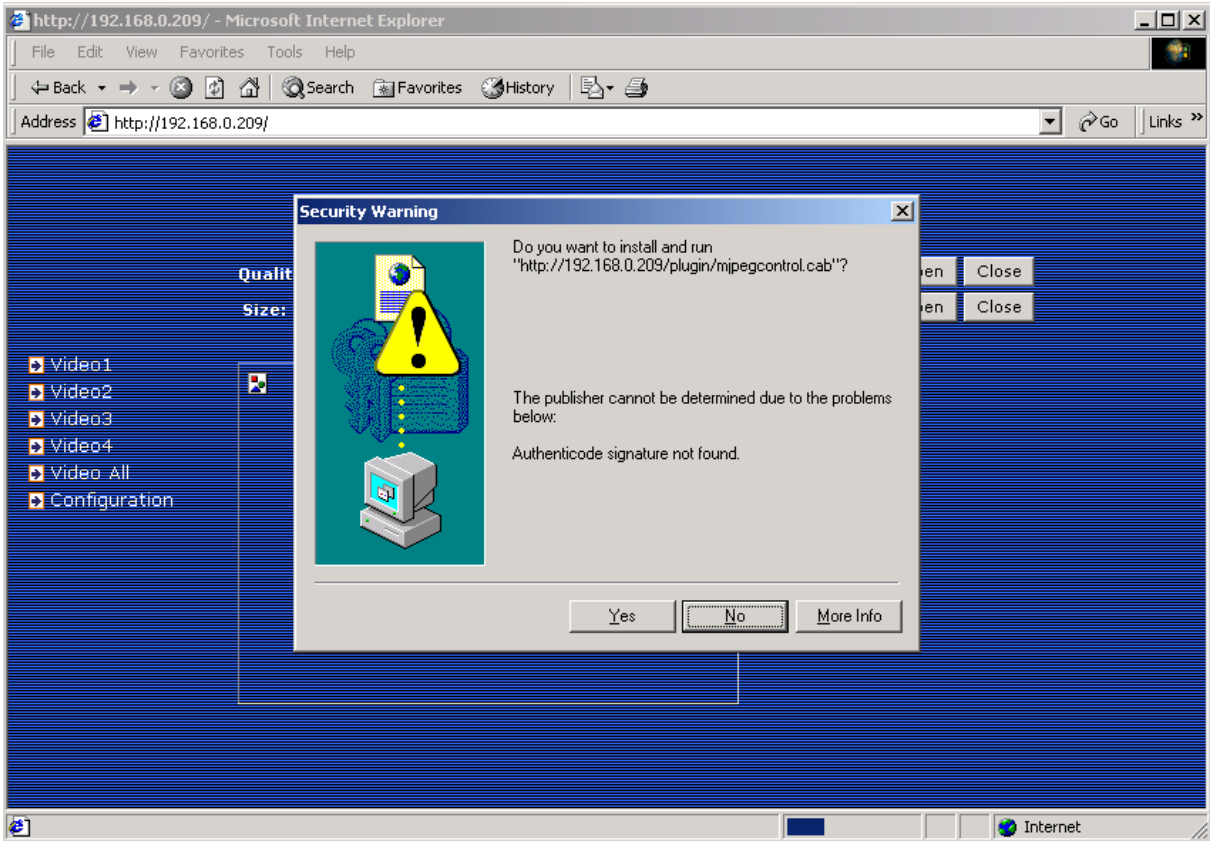
For demonstration purpose, enter the Demo Web page of configuration to activate the demo account and choose permitted services. Once the demo account is setup, any one may watch the video by using "**demo**" as user name while ignoring the password. Different from primary users, the demo account has certain limitations that are determined by administrators.

In the figure, the foreground is the login window and the background shows the message when authentication fails. The user may check the option to save the password for future convenience.



Installing Plug-in

If it is initial access to Video Server via the Web browser supporting server push, the motioned pictures will display directly. If the Web browser is Internet Explorer in Windows, users will be asked to install a new plug-in that is provided by Video Server. This plug-in has been registered for certificate and is used to display motioned pictures in the Internet Explorer. Users may click on Yes to install the plug-in. If the web browser does not allow the user to install, check the security option to lower security levels or contact network supervisors.



Appendix

A. Troubleshooting

A.1 Power-On-Self-Test

After the power has been turned on, Video Server will perform a self-diagnostic to detect any possible hardware defects. If the power indicator is dim at the beginning, the system fails to proceed further without power. While the POST is proceeding, the status LED indicators will keep blinking interchanged until finished or any fatal error happens. If either status LED indicator is dim at the beginning, the LED may be broken.

Any possible fatal error has a special pattern shown in the following table. LED1 is the one below power indicator and LED2 is the lowest one.

LED pattern after POST	Failed function	Troubleshooting
LED1 ON and LED2 ON	Ethernet network	1. Check the LINK LED of the attached port on the Ethernet switch or hub. If it is dim, the Ethernet cable may be loose or cross-over. 2. If the cable is OK, the Ethernet controller is broken. Ask your reseller for technical service.
LED1 ON and LED2 OFF	Ethernet network	The PCI interface cannot work. Ask your reseller for technical service.
LED1 OFF and LED2 ON	Ethernet network	The Ethernet controller is broken. Ask your reseller for technical service.
Both LED1 and LED2 blink	Video input	The video decoder is broken. Ask your reseller for technical service.
LED1 blink and LED2 ON	System date and time	The real-time clock is broken. Ask your reseller for technical service.
LED1 ON and LED2 blink	Camera control via COM1	The UART controller is broken. Ask your reseller for technical service.
LED1 OFF and LED2 blink	Camera control via COM2 or modem interface	The UART controller is broken. Ask your reseller for technical service.

D. Technical Specifications

Networking
Adjustable bandwidth limit
Protocol
TCP/IP, HTTP, SMTP, FTP, Telnet, NTP, DNS and DHCP
Physical
10BaseT Ethernet or 100BaseT Fast Ethernet

Video
Algorithm Supported
JPEG, MJPEG
Video Inputs and Outputs
4 BNC video inputs with 75Ω terminal switch
NTSC/PAL auto-sensing
4 BNC loop-through video outputs
Resolution
NTSC
Up to 30 frames at 176x112
Up to 30 frames at 352X240
Up to 9 frames at 704X480 or quad
PAL
Up to 25 frames at 176x144
Up to 25 frames at 352X288
Up to 8 frames at 704X576 or quad

Serial Port
COM1
9 pin D-SUB RS232 or RS485 (PTZ camera control) max.115.2Kbps
COM2
9 pin D-SUB RS232 (modem or PTZ camera control) max.115.2Kbps

General I/O
4 sensor inputs (max. 12VDC 50mA)
2 relay outputs (max. 24VDC 1A, 125VAC 0.5A)

LED Indicator
System power and status indicators
Network link and speed indicators

Dimension
216.7mm(L) * 193.7mm(W) * 44.3mm(H)

Weight
Net. 970g.

Power
Consumption: near 7.8W
Universal switching power supply included
Input: 100-240VAC, 50/60Hz, 0.4A
Output: 12VDC, 1.5A
External power supply
6-15VDC, min. 15W

Operating Environment
Temperature: 0-65°C/32-149°F
Humidity: 95%RH