

# User's Manual



## Video Receiver RX7101



Product name:	Video Receiver (RX7101)
Release Date:	2007/01/26
Manual Revision:	1.00
Web site:	<a href="http://www.vivotek.com">www.vivotek.com</a>
Email:	<a href="mailto:technical@vivotek.com">technical@vivotek.com</a> <a href="mailto:sales@vivotek.com">sales@vivotek.com</a>
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# Before You Use This Product

The use of surveillance devices may be prohibited by law in your country. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for its intended use.

It is important to first verify that all contents received are complete according to the list in the "Package Contents" chapter. Take notice of the warnings in "Quick installation guide" before the Video Receiver is installed, then carefully read and follow the instructions in the "Installation" chapter to avoid damages due to faulty assembly and installation. This also ensures the product is used properly as intended.

The Video Receiver is a network device and its use should be straightforward for those who have basic network knowledge. The "Troubleshooting" chapter in the Appendix provides remedies to the most common errors in set up and configuration. You should consult this chapter first if you run into a system error.

The Video Receiver is designed for various applications including video surveillance, camera control, etc. The "How to Use" chapter suggests ways to best utilize the Video Receiver and ensure proper operations. For the creative and professional developers, the "URL Commands of The Video Receiver" chapter serves to be a helpful reference to customize existing homepages or integrating with the current web server.

For paragraphs preceded by  the reader should use caution to understand completely the warnings. Ignoring the warnings may result in serious hazards or injuries.

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# Package Contents

RX7101



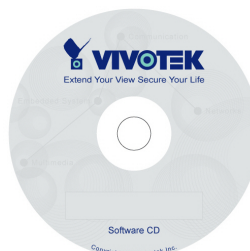
Power adapter



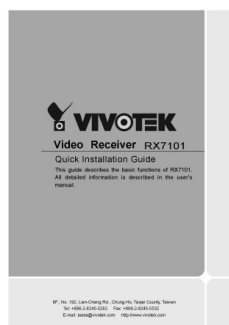
Terminal connector



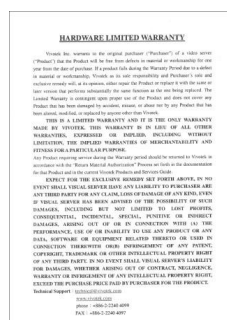
Software CD



Quick installation guide



Warranty card

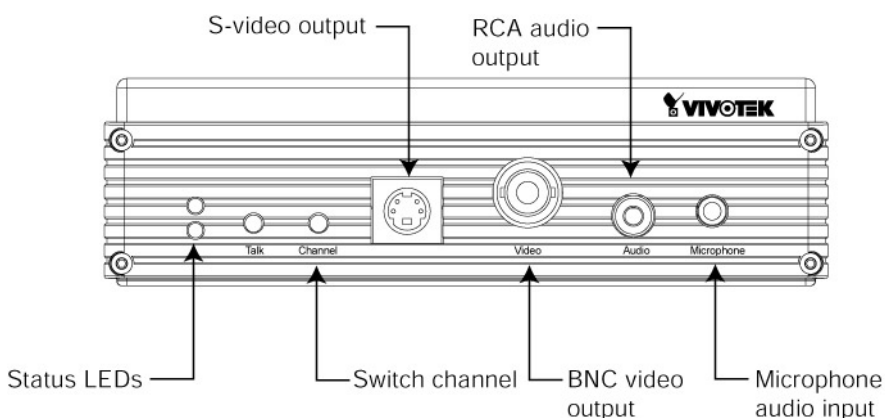


# Installation

The Video Receiver only supports one privileged account to access and configure it. In this manual, "Administrator" refers to the person.

## Physical Description

### Front Panel



**"Status LEDs"** Two LEDs show the status of Video Receiver. Please refer to the Appendix [Troubleshooting](#) for details.

**"Talk"** The button is reserved to support two way audio.

**"Switch channel"** Push the button to stop or start the display of sequential channel when the multiple channel mode and the sequential display mode were set.

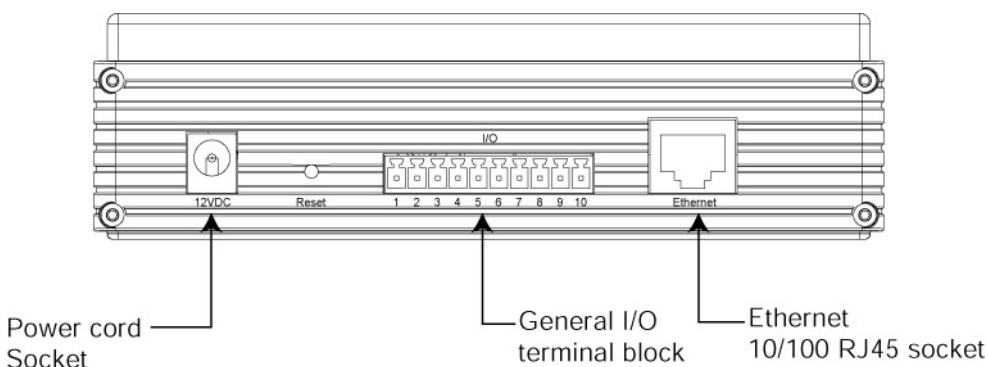
**"S-video output"** Video output for S-video connector

**"BNC video output"** Video output for BNC connector

**"RCA audio output"** Audio output for RCA connector

**"Microphone audio input"** Microphone input is reserved to support two way audio.

## Rear Panel



**"Power cord socket"** Plug the power jack of the included power adapter to Video Receiver. Connecting the power adapter should be the last operation while physically installing Video Receiver.

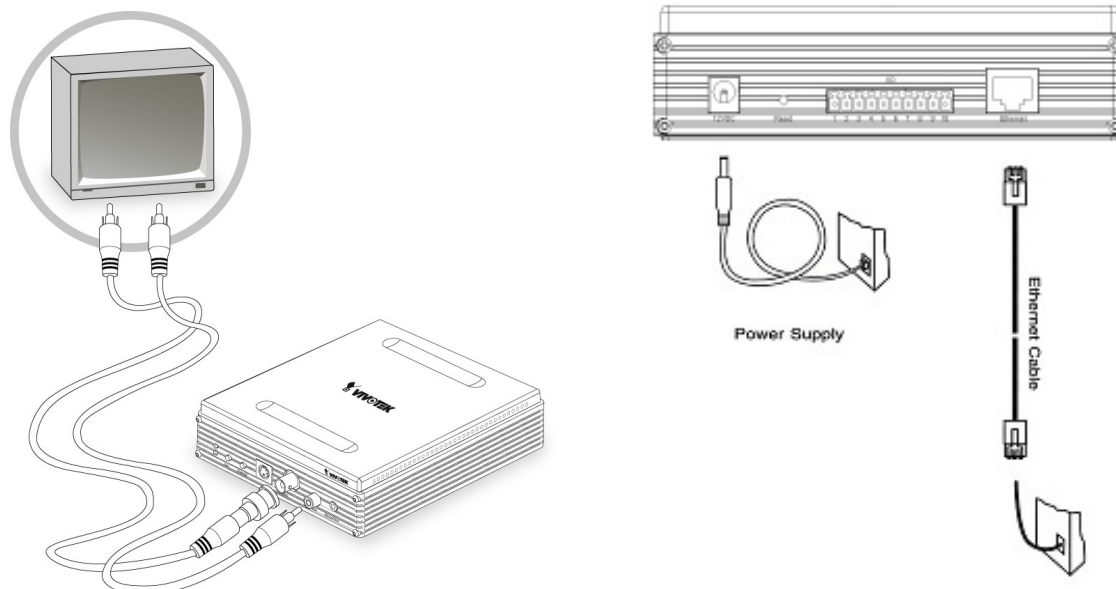
**"Reset button"** Refer to the Appendix [Troubleshooting](#) for the detailed usage of system recovery.

**"General I/O terminal block"** Video Receiver provides a very flexible general I/O interface to combine with the user's security devices such as alarms, lighting or door locks. One green connector is included in the package to connect the external devices. The general I/O terminal block has 10 pins for device control. These pins can be divided into three categories based on their functions, including power source, RS485 and digital outputs.


No.	Pin description	Regulation
1	AC power input	24V AC
2	AC power input	24V AC
3	Digital output 1	Darlington,Max. 500mA
4	Digital output 2	Darlington,Max. 500mA
5	Digital output 3	Darlington,Max. 500mA
6	Digital output 4	Darlington,Max. 500mA
7	DC power output (+)	12V DC,Max. 0.5A
8	DC power output (-)	Ground
9	RS485_A	D+,non-inverting
10	RS485_B	D-,inverting

**"Ethernet 10/100 RJ45 socket"** Connect to an Ethernet network with a UTP category 5 cable of length shorter than 100 meters according to the standard.

## Hardware installation



Please verify that your product package contains all the accessories listed in the foregoing Package Contents. Depending on the user's application, an Ethernet cable may be needed. The Ethernet cable should meet the specs of UTP Category 5 and not exceed 100 meters in length.

 Connect the power adapter jack to the Video Receiver before plugging in to the power socket. This will reduce the risk of accidental electric shock.

Shut down all the peripheral devices prior to connection. The video BNC/S-Video, Ethernet cable and power adapter are essential for basic viewing function. Refer to the related configuration section for detailed description.

Upon powering up, the front red LED will become lighted first and then the device will go through booting process. During the booting process, red and green LEDs will be on. After booted, the Video Receiver will standby for getting IP address. After getting IP

Address, the green LED will blink every second.

The Video Receiver will first detect Ethernet. If it does not connect to Ethernet, the system booting will fail. Please connect the Ethernet cable and power on again. When system boot up, the green LED will flash every second as heartbeat to indicate alive. If the green LED is off, please check the network connections. When system is alive, go to next paragraph "Software installation".

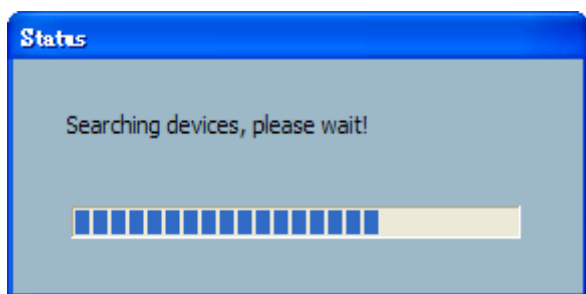
## Software Installation

At the end of the hardware installation, the Administrator must place the product software CD into the CD-ROM drive of the PC running in MS Windows. An auto-run program will pop up (If the program is not on auto-run, go to the root directory of the software CD and click on "autorun.exe").



Click on "Installation Wizard" to run Vivotek's installation program.

Upon Installation Wizard's start up, a searching box will pop up. This program searches for Vivotek's product on the same LAN:



After searching, Vivotek Video Servers, Network Camera or Video Receivers will be located by the Installation Wizard. There may be several entries shown in the window. The Administrator may differentiate the Video Receivers with the serial number.

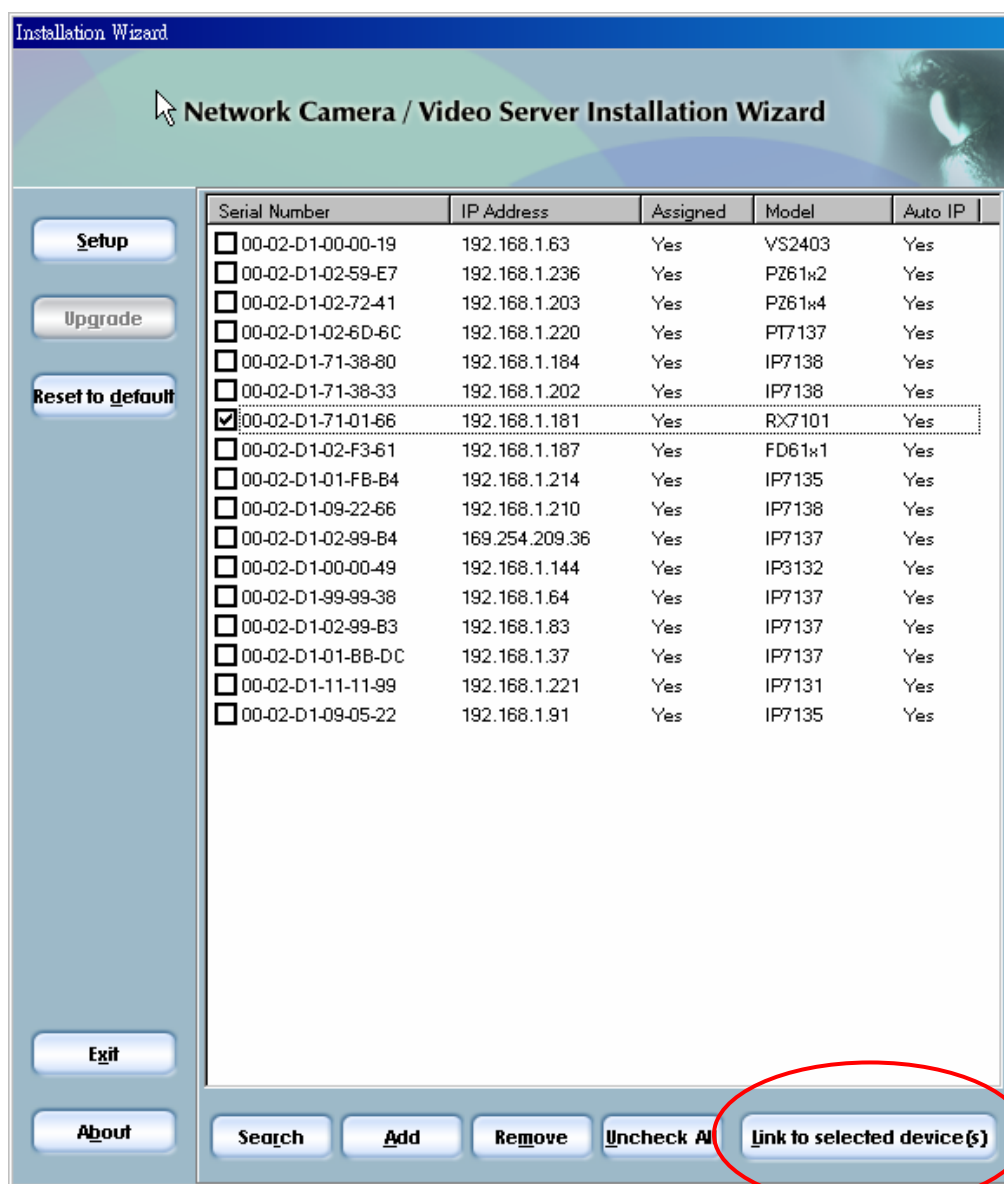
For the series number in the "Serial Number" field, please check the label on the bottom of the Video Receiver.



The IP addresses shown in the "Current IP Address" field reflect those on the local network. They may be from the DHCP server. If there is no DHCP server, the camera will try to find a free IP address (this takes from 15 second to 3 minutes, depending on the LAN status). The method of finding IP address is seeking from 192.168.0.99, to 192.168.0.254. If any of the address inside this range is free, the Video Receiver will be assigned to this IP address, and its subnet mask would be 255.255.255.0. If none of the addresses is free, the Video Receiver will try the range from 192.168.0.2 to 192.168.0.98. After

an IP address is assigned to the camera, the "Activity" status LED blinks.

If the Video Receiver is not on the IP installer list, click on the "Search" button to search for the Video Receiver on the LAN.



For more detailed usage of the Installation Wizard, please refer to the user's manual of the Installation Wizard included in the product CDROM to find the location of the Video Receiver. There may be many Video Receivers in the local network. Users can differentiate the Video Receivers with the serial number. The serial number is printed on the labels on the carton and the bottom of the Video Receiver body. Please refer to the user's manual of Installation Wizard for detail.

## Initial Access to the Video Receiver

### Check Network Settings

The Video Receiver can be connected either before or immediately after software installation onto the Local Area Network. The Administrator should complete the network settings on the configuration page, including the correct subnet mask and IP address of gateway and DNS. Ask your network administrator or Internet service provider for the detail information. By default the Video Receiver requires the Administrator to run installation every time it reboots. Please refer to "Network settings" on the System Configuration page for details. If any setting is entered incorrectly and cannot proceed to setting up the Video Receiver, restore the factory settings following the steps in the "Troubleshooting" chapter of the Appendix.

### Add Password to Prevent Unauthorized Access

The default Administrator's password is blank and the Video Receiver initially will not ask for any password. The Administrator should immediately implement a new password as a matter of prudent security practice. Once the Administrator's password is saved, the Video Receiver will ask for the user's name and password before each access. The user name for the Administrator is permanently assigned as "root". Once the password is changed, the browser will display an authentication window to ask for the new password. **Once the password is set, there is no provision to recover the Administrator's password. The only option is to restore to the original factory default settings.**

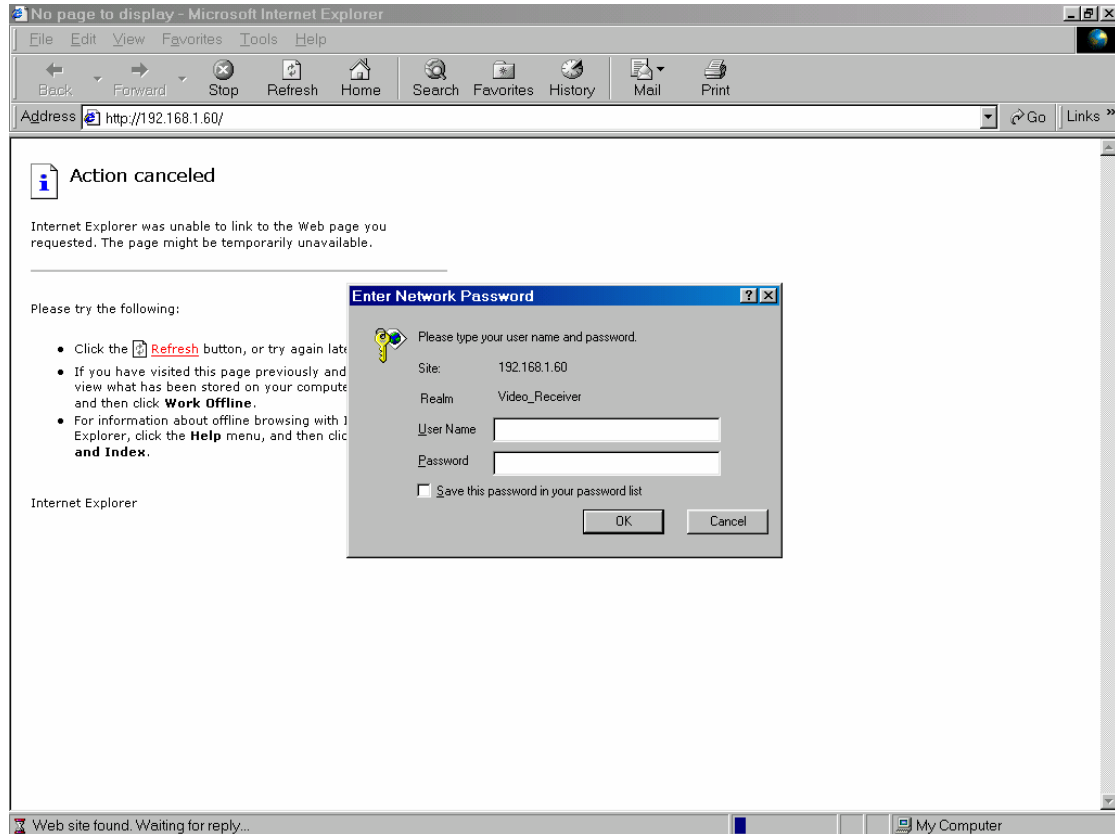
## How to Use

### Authentication

After opening the Web browser and typing in the URL of the Video Receiver, a dialogue window pops up to request a username and password. Upon successful authentication,

the following figure is displayed.

The foreground is the login window and the background shows the message if authentication fails. The option box can be checked to save the password for future convenience. But it is not available to the Administrator for obvious reason.



\*If the administrator (root user) assigns no password, everybody can access the homepage directly.

## Primary capability of Video Receiver

### Video

The Video Receiver supports maximum four video sources. The display mode can be single channel and multiple channels. And the multiple channel display can be display four channel simultaneously or sequentially. In sequential mode the period of showing a channel can be adjusted.

- When single channel mode is selected, only channel 1 is effective.
- In single channel mode, the video resolution can be set up to D1, the receiver automatically scale all other resolutions to full D1 at display.
- In multiple channel mode, the maximum video resolution is CIF, the receiver automatically scale all other resolutions to CIF at quad display mode and scale to D1 in sequential display mode

### Audio

The Video Receiver only supports single audio channel output and the volume can be tuned.

### I/O

#### ***Digital output***

The Video Receiver has four digital outputs, they can be configured to following any digital output of video source.

#### ***Keyboard***

The Video Receiver supports keyboard to send PTZ commands to control PTZ camera.

- The Video Receiver only supports PELCO-D protocol now.
- The Video Receiver can send CGI command to control the PT functions of PT 7000

series.

### **OSD**

The Video Receiver provides the following information for showing the connection or display status.

- If the IP address is empty, the video output shows "No Video" on the top-right corner.
- If the IP address is configured but the channel is disconnected, the video output shows the IP address on the top-right corner.
- In sequential multi-channel mode, if the periodic channel switch is stopped, there should be a channel ID on the top-right corner.

## Administrator's capability

### Software revision upgrade

Customers can obtain the up-to-date software from the web site of Vivotek. An easy-to-use Installation Wizard is provided to upgrade the Video Receiver with just a few clicks. The upgrade function is opened to the Administrator only. To upgrade the system, follow the procedures below.

1. Download the firmware file named "rx7101\_xxxxx.zip" and upgrade the firmware from HTTP web page.
2. The whole process will finish in a few minutes and it will automatically restart the system.

Note: Please do NOT remove power connection during the upgrade process. Doing so



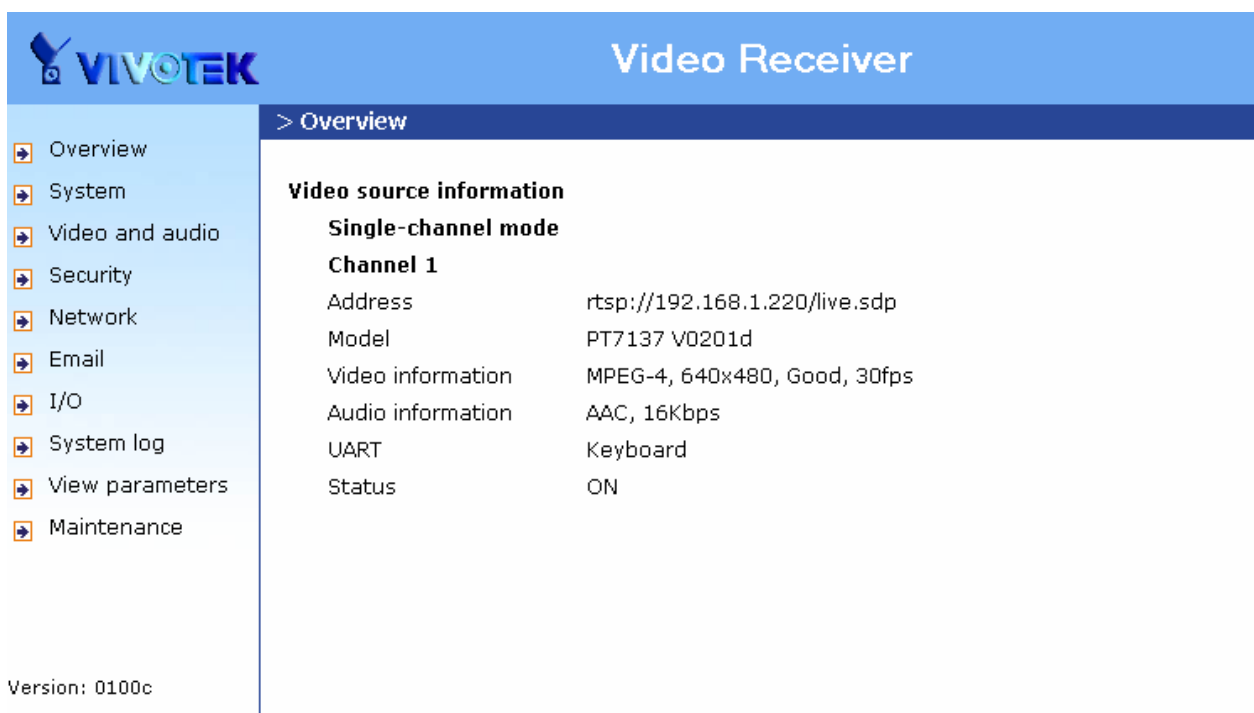
If power fails during the writing process of Flash memory, the program in the memory of the Video Receiver may be destroyed permanently. If the Video Receiver cannot restart properly, ask your dealer for technical service.

# Definitions in Configuration

The Administrator can access system configuration. Each category in the left column will be explained in the following pages. The bold texts are the specific phrases on the Option pages. The Administrator may type the URL below the figure to directly enter the frame page of configuration. If the Administrator also wants to set certain options through the URL, read the reference appendix for details.

## Overview

If the sources have been set, the overview page will show the basic information about the servers. In the default situation, it will show the information of channel 1. If the "Multiple channel mode" is selected, it will show the information of four channels. Please refer to "Video and audio" setting for the detail.



The screenshot shows the VIVOTEK Video Receiver configuration interface. The top header is blue with the VIVOTEK logo on the left and "Video Receiver" on the right. Below the header is a dark blue navigation bar with "> Overview" selected. On the left is a light blue sidebar menu with icons and labels for: Overview, System, Video and audio, Security, Network, Email, I/O, System log, View parameters, and Maintenance. The main content area is white and displays "Video source information" in bold. Underneath, "Single-channel mode" is indicated, followed by "Channel 1". A table-like structure shows the following details:

Address	rtsp://192.168.1.220/live.sdp
Model	PT7137 V0201d
Video information	MPEG-4, 640x480, Good, 30fps
Audio information	AAC, 16Kbps
UART	Keyboard
Status	ON

At the bottom left of the sidebar, the text "Version: 0100c" is displayed.

## System settings

**"Host name"** The text displays the title at the top of the banner.

**"Keep current date and time"** Click on this to reserve the current date and time of the Video Receiver. An internal real-time clock maintains the date and time even when the power of the system is turned off.

**"Sync with computer time"** Synchronizes the date and time of the Video Receiver with the local computer. The read-only date and time of the PC is displayed as updated.


**"Manual"** Adjust the date and time according to what is entered by the Administrator. Notice the format in the related fields while doing the entry.


**"Automatic"** Synchronize with the NTP server over the Internet whenever the Video Receiver starts up. It will fail if the assigned time-server cannot be reached.

**"NTP server"** Assign the IP address or domain name of the time-server.

**"Time zone"** Adjust the time with that of the time-servers for local settings.

**"Update interval"** Select hourly, daily, weekly, or monthly update with the time on the NTP server.

Remember to click on  to immediately validate the changes. Otherwise, the correct time will not be synchronized.



# Video Receiver

- Overview
- System
- Video and audio
- Security
- Network
- Email
- I/O
- System log
- View parameters
- Maintenance

Version: 0100c

## > System

**Host name :**

☒ **Keep current date and time**

☐ **Sync with computer time**

PC date:  [yyyy/mm/dd]

PC time:  [hh:mm:ss]

☐ **Manual**

Date:  [yyyy/mm/dd]

Time:  [hh:mm:ss]

☐ **Automatic**

NTP server:

Time zone:  ▼

Update interval:  ▼

<url> <http://<Video Receiver>/setup/system.html>

<Video Receiver> is the domain name or original IP address of the Video Receiver.

## Video and audio settings

**"Single channel mode"** Video Receiver shows Channel 1 in video output. The video resolution can be set up to D1, the receiver automatically scale all other resolutions to full D1 at display.

**"Multiple channel mode"** Video Receiver shows four channels in video output.

**"Sequential display"** Video Receiver shows Channel 1, 2, 3, 4 in order. The period of showing a channel can be adjusted below this item. The receiver automatically scales all other resolutions to full D1 at display.

**"Quad display"** Video Receiver shows four channels at the same time. The maximum video resolution is CIF; the receiver automatically scales all other resolutions to CIF at quad display mode.

**"Address"** Full access URL to access the streaming of Video Server or Network Camera.

**"HTTP port"** The HTTP port of Video Server or Network Camera

**"User name"** and **"Password"** The account in Video Server or Network Camera. The privilege of this account must at least be able to access the video and audio streaming.

**"Protocol"** The protocol of streaming. There are three types for RTSP streaming: Multicast, UDP and TCP.


**"Media"** Video and audio can be chosen independently.

**"Auto connect"** If it is configured as "Yes", the channel will connect automatically on system boot time or after click on . If it is configured as "No", the channel will keep connection status after click on .

**"Video output"** Video out put modulation type. It can be "NTSC" or "PAL".

**"Audio output channel"** Only one audio channel can be outputted. The default channel is Channel 1.

**"Audio output volume"** The audio volume can be tuned in Video Receiver.


Video Receiver

- Overview
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- Video and audio
- Security
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Version: 0100d

> Video and audio

**Mode**

☐ Single channel mode

☒ Multiple channel mode

☐ Sequential display  
Channel switch period:  seconds

☒ Quad display

**Video source settings**

**Channel 1**

Address:

HTTP port:

User name:

Password:

Protocol: ☐ Multicast ☐ UDP ☒ TCP

Media: ☒ Audio & video ☐ Audio only ☐ Video only

Auto connect:

**Channel 2**

Address:

HTTP port:

User name:

Password:

Protocol: ☐ Multicast ☐ UDP ☒ TCP

Media: ☐ Audio & video ☐ Audio only ☒ Video only

Auto connect:

**Channel 3**

Address:

HTTP port:

User name:

Password:

Protocol: ☐ Multicast ☐ UDP ☒ TCP

Media: ☒ Audio & video ☐ Audio only ☐ Video only

Auto connect:

**Channel 4**

Address:

HTTP port:

User name:

Password:

Protocol: ☐ Multicast ☐ UDP ☒ TCP

Media: ☒ Audio & video ☐ Audio only ☐ Video only

Auto connect:

**Video output**

☒ NTSC

☐ PAL

**Audio output**

Channel:

Volume (1-100):

<url> <http://<Video Receiver>/setup/videoaudio.html>

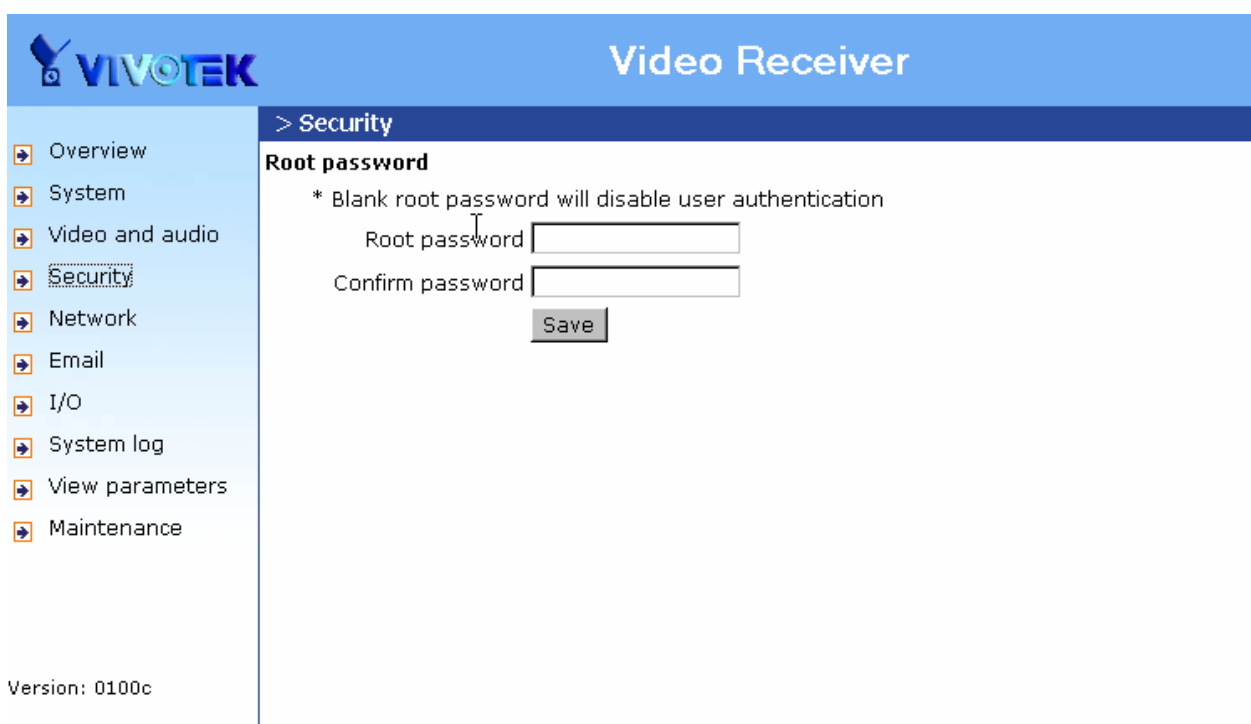
- 22 -

www.vivotek.com

<Video Receiver> is the domain name or original IP address of the Video Receiver.

## Security settings

**“Root password”** Change the Administrator’s password by typing in the new password identically in both text boxes. The typed entries will be displayed as asterisks for security purposes.



Version: 0100c

<url> <http://<Video Receiver>/setup/security.html>

<Video Receiver> is the domain name or original IP address of the Video Receiver.

## Network settings

Any changes made on this page will restart the system in order to validate the changes. Make sure every field is entered correctly before clicking on .

### Network type

#### "LAN" & "PPPoE"

The default type is LAN. Select PPPoE if using ADSL

#### "Get IP address automatically" & "Use fixed IP address"

The default status is **"Get IP address automatically"**. This can be tedious having to perform software installation whenever the Video Receiver starts. Therefore, once the network settings, especially the IP address, have been entered correctly, select **"Use fixed IP address"** then the Video Receiver will skip installation at the next boot. The Video Receiver can automatically restart and operate normally after a power outage. Users can run IP installer to check the IP address assigned to the Video Receiver if the IP address is forgotten. **"IP address"** This is necessary for network identification.

**"Subnet mask"** This is used to determine if the destination is in the same subnet. The default value is "255.255.255.0".

**"Default router"** This is the gateway used to forward frames to destinations in a different subnet. Invalid router setting will fail the transmission to destinations in different subnet.

**"Primary DNS"** The primary domain name server that translates hostnames into IP addresses.

**"Secondary DNS"** Secondary domain name server that backups the Primary DNS.

**"PPPoE"** If using the PPPoE interface, fill the following settings from ISP

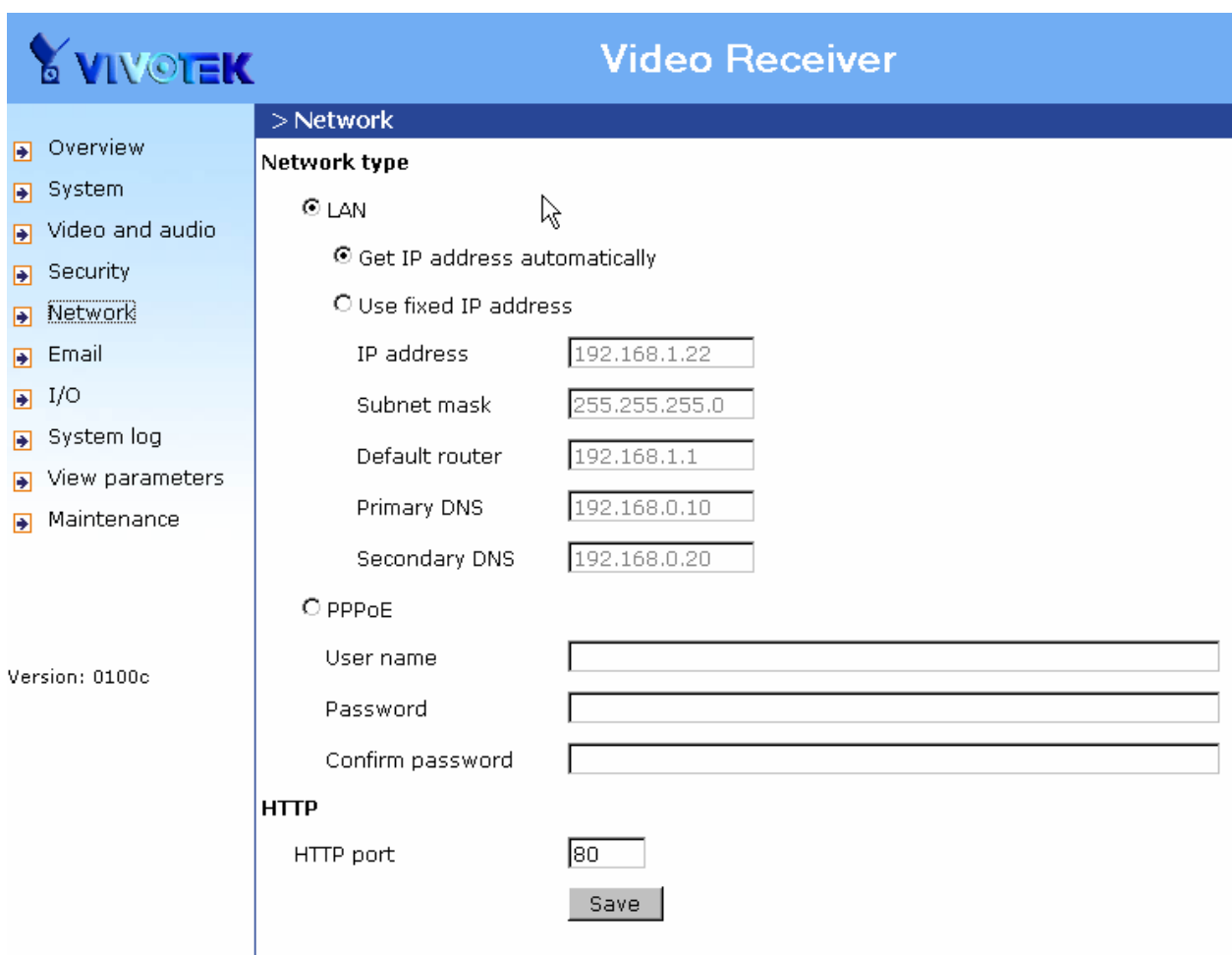
**"User name"** The login name of PPPoE account

**"Password"** The password of PPPoE account

**"Confirm password"** Input password again for confirmation

## HTTP

**"Http port"** This can be other than the default Port 80. Once the port is changed, the users must be notified the change for the connection to be successful. For instance, when the Administrator changes the HTTP port of the Video Receiver whose IP address is 192.168.0.100 from 80 to 8080, the users must type in the web browser "http://192.168.0.100:8080" instead of "http://192.168.0.100".



**VIVOTEK Video Receiver**

**> Network**

**Network type**

☒ LAN

☒ Get IP address automatically

☐ Use fixed IP address

IP address: 192.168.1.22

Subnet mask: 255.255.255.0

Default router: 192.168.1.1

Primary DNS: 192.168.0.10

Secondary DNS: 192.168.0.20

☐ PPPoE

User name:

Password:

Confirm password:

**HTTP**

HTTP port: 80

Save

<url> *http://<Video Receiver>/setup/network.html*

<Video Receiver> is the domain name or original IP address of the Video Receiver.

**⚠** Some invalid settings may cause the system failing to respond. Change the configuration only if necessary and consult with your network supervisor or experienced users for correct settings. Once the system has lost contact, refer to Appendix A for reset and restore procedures.

## Email settings

When the SMTP server support SMTP authentication, users need to give the valid user name and password to send email via the server.

There are two external mail server can be configured, primary and secondary email server, The Video Receiver will use primary server as default , and use secondary server when primary server is unreachable.

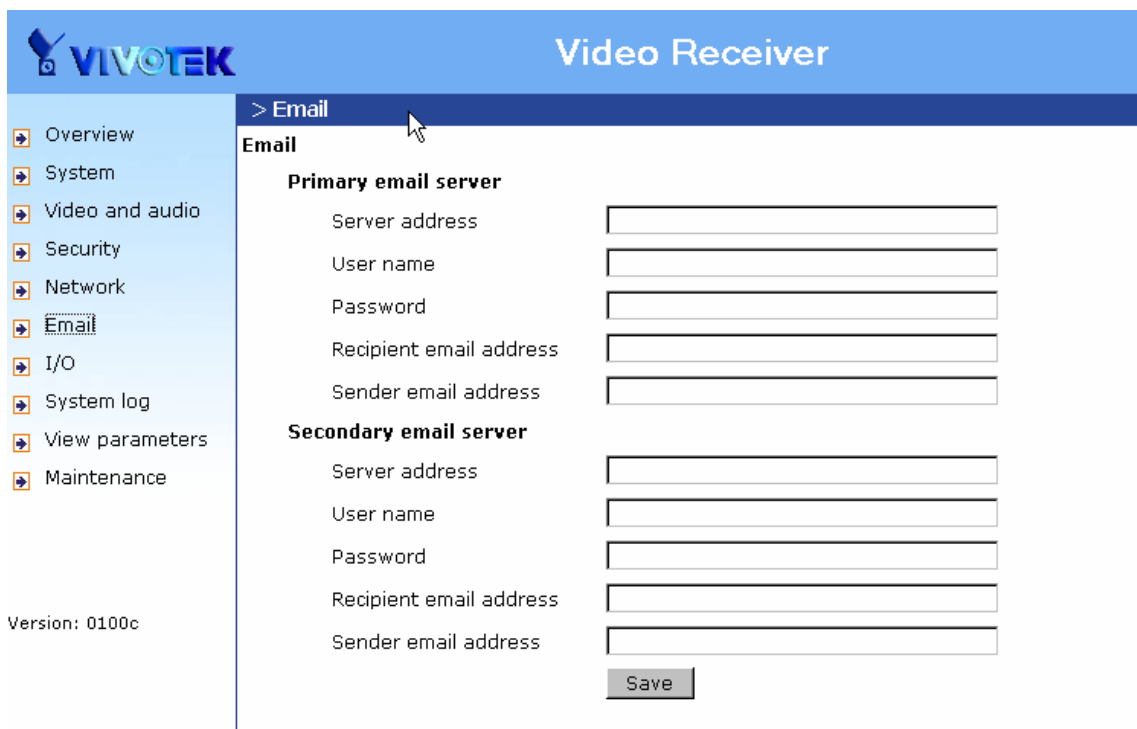
**"Server address"** The domain name or IP address of the external email server.

**"User name"** This granted user name on the external email server.

**"Password"** This granted password on the external email server.

**"Recipient email address"** The email address of the recipients for snapshots or log file. Multiple recipients must be separated by semicolon, `;`.

**"Sender email address"** The email address of the sender



Version: 0100c

<url> <http://<Video Receiver>/setup/mail.html>

<Video Receiver> is the domain name or original IP address of the Video Receiver.

## I/O settings

### Digital output

Video Receiver supports four digital outputs, they can be configured to following any digital output of video source.

**"Enable"** Select it to enable the digital output of Video Receiver. This digital output will follow D/O ID 1~4 (Ex:  ) of channel 1~4 (Ex:  ).

### Keyboard


The keyboard can be connected with Video Receiver via RS485 interface. The following fields in Video Receiver must be set the same with the keyboard.

**"Baud rate"** The transmission speed between Video Receiver and keyboard

**"Data bits"** The length of a data

**"Stop bits"** The length of stop bit

**"Parity bits"** The type of parity check



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> I/O

### Digital output

☐ D/O #1 enable  
Follow channel  D/O

☐ D/O #2 enable  
Follow channel  D/O

☐ D/O #3 enable  
Follow channel  D/O

☐ D/O #4 enable  
Follow channel  D/O

### Keyboard

Port settings

Baud rate:

Date bits:

Stop bits:

Parity bits:

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<url> *http://<Video Receiver>/setup/io.html*

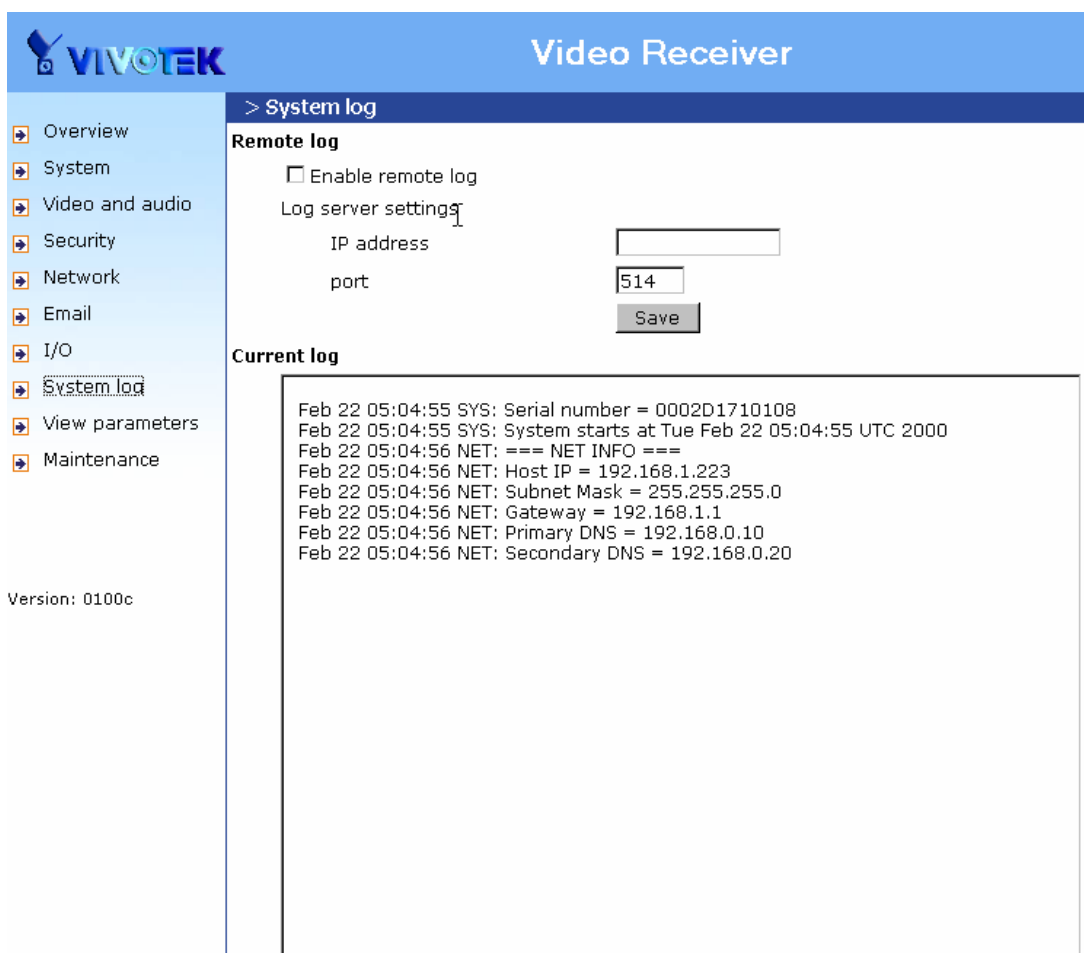
<Video Receiver> is the domain name or original IP address of the Video Receiver.

## System log

The Video Receiver support log the system messages on remote server. The protocol is compliant to RFC 3164. If you have external Linux server with **"syslogd"** service, use **"-r"** option to turn on the facility for receiving log from remote machine. Or you can use some software on Windows which is compliant to RFC 3164.

Check **"Enable remote log"** and input the **"IP address"** and **"port"** number of the log server to enable the remote log facility.

In the **"Current log"**, it displays the current system log file. The content of the log provides useful information about configuration and connection after system boot- up.



The screenshot shows the VIVOTEK Video Receiver web interface. The left sidebar contains a menu with options: Overview, System, Video and audio, Security, Network, Email, I/O, System log (selected), View parameters, and Maintenance. The main content area is titled 'Video Receiver' and 'System log'. It has two sections: 'Remote log' and 'Current log'. The 'Remote log' section includes a checkbox for 'Enable remote log' (unchecked), a label 'Log server settings', and input fields for 'IP address' and 'port' (set to 514), with a 'Save' button. The 'Current log' section displays a text box with system log messages.

Version: 0100c

**Remote log**

☐ Enable remote log

Log server settings

IP address

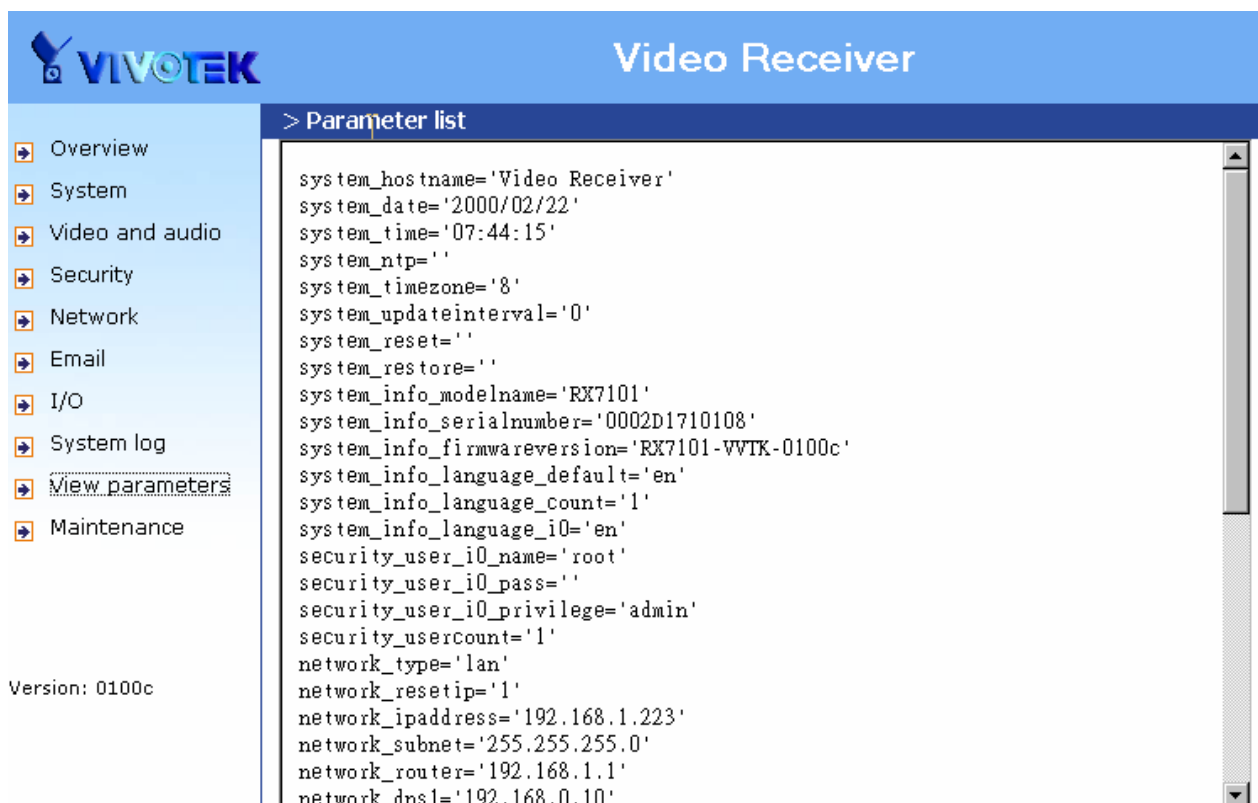
port

**Current log**

```
Feb 22 05:04:55 SYS: Serial number = 0002D1710108
Feb 22 05:04:55 SYS: System starts at Tue Feb 22 05:04:55 UTC 2000
Feb 22 05:04:56 NET: === NET INFO ===
Feb 22 05:04:56 NET: Host IP = 192.168.1.223
Feb 22 05:04:56 NET: Subnet Mask = 255.255.255.0
Feb 22 05:04:56 NET: Gateway = 192.168.1.1
Feb 22 05:04:56 NET: Primary DNS = 192.168.0.10
Feb 22 05:04:56 NET: Secondary DNS = 192.168.0.20
```

## Viewing system parameters

Click on this link on the configuration page to view the entire system's parameter set.



The screenshot displays the VIVOTEK Video Receiver configuration interface. On the left is a navigation menu with options: Overview, System, Video and audio, Security, Network, Email, I/O, System log, View parameters, and Maintenance. The 'View parameters' option is selected, and the main area shows a 'Parameter list' with the following system parameters:

```
system_hostname='Video Receiver'
system_date='2000/02/22'
system_time='07:44:15'
system_ntp=''
system_timezone='8'
system_updateinterval='0'
system_reset=''
system_restore=''
system_info_modelname='RX7101'
system_info_serialnumber='0002D1710108'
system_info_firmwareversion='RX7101-VVTK-0100c'
system_info_language_default='en'
system_info_language_count='1'
system_info_language_i0='en'
security_user_i0_name='root'
security_user_i0_pass=''
security_user_i0_privilege='admin'
security_usercount='1'
network_type='lan'
network_resetip='1'
network_ipaddress='192.168.1.223'
network_subnet='255.255.255.0'
network_router='192.168.1.1'
network_dns1='192.168.0.10'
```

At the bottom left of the configuration page, the text 'Version: 0100c' is visible.

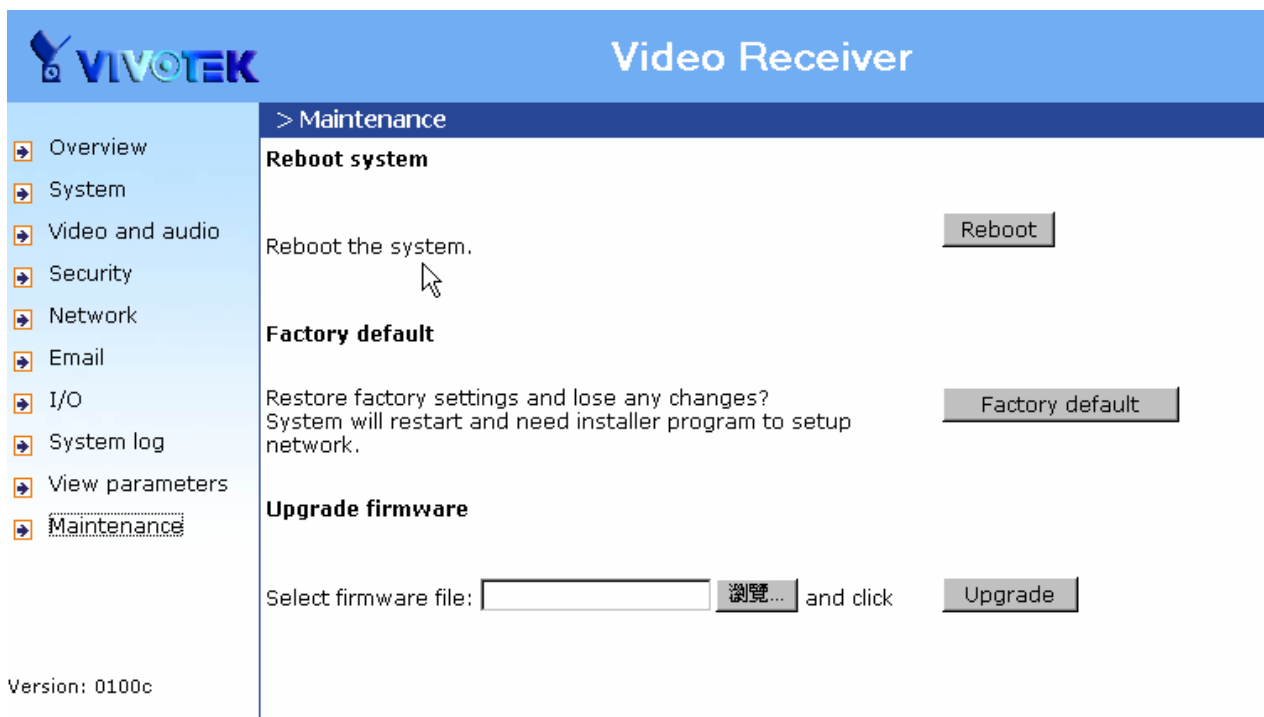
## Maintenance

Three actions can be selected

**“reboot”** click the reboot button to restart system

**“factory default”** Click on Factory default button on the configuration page to restore the factory default settings. Any changes made so far will be lost and the system will be reset to the initial factory settings. The system will restart and require the installer program to set up the network again.

**“upgrade firmware”** Select the firmware file and click upgrade button



The screenshot shows the 'Video Receiver' configuration interface. On the left is a sidebar with a menu: Overview, System, Video and audio, Security, Network, Email, I/O, System log, View parameters, and Maintenance (which is highlighted). The main content area is titled '> Maintenance' and contains three sections: 'Reboot system' with a 'Reboot' button, 'Factory default' with a 'Factory default' button, and 'Upgrade firmware' which includes a text input for 'Select firmware file:', a file selection button (labeled '瀏覽...'), and an 'Upgrade' button. The version '0100c' is displayed at the bottom left of the interface.

# Appendix

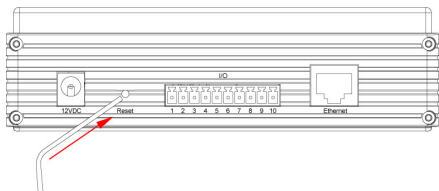
## A. Troubleshooting

### Status LED

The following table lists the LED patterns in all cases. The priority 1 is the highest priority. If there are multiple statuses at the same time, the Video Receiver will show the highest priority one.

	LED status	Description	Priority
1	Steady Red	Power on and system booting	5
	Red LED unlighted	Power off	
2	Steady Red + Blink Green every 1 sec.	Network works(heartbeat)	4
	Steady Red + Green LED unlighted	Network fail	
3	Steady Red + Blink Green every 0.15 sec.	UART control message	3
4	Blink Red every 0.15 sec. + Blink Green every 1 sec.	Upgrading F/W	2
5	Blink Red every 0.15 sec. + Blink Green every 0.15 sec.	Restore default	1

## Reset and restore



There is a button in the back side of the Video Receiver. It is used to reset the system or restore the factory default settings.

RESET: Click on the button.

RESTORE:

1. Press on the button continuously.
2. Wait for all LED blink fast.
3. Free the button.



Restoring the factory defaults will erase any previous settings.

## B. URL commands of the Video Receiver

For some customers who already have their own web site or web control application, the Video Receiver can be easily integrated through convenient URLs. This section lists the commands in URL format corresponding to the basic functions of the Video Receiver.

### Get server parameter values

**Note:** This request require administrator access

**Method:** GET/POST

Syntax:

```
http://<servername>/cgi-bin/admin/getparam.cgi?[<parameter>]  
[&<parameter>...]
```

Where the *<parameter>* should be *<group>[\_<subgroup>][\_<name>]* If you do not

specify the any parameters, all the parameters on the server will be returned. If you specify only *<group>*, the parameters of related group will be returned. There may be none or multiple subgroups between group and subgroup. If you specify *<group>[\_<subgroup>] [\_...][\_<subgroupN>]*, the parameters of related subgroup will be returned.

When query parameter values, the current parameter value are returned.

Successful control requests returns parameter pairs as follows.

Return:

```
HTTP/1.0 200 OK\r\n
Content-Type: text/html\r\n
Context-Length: <length>\r\n
\r\n
<parameter pair>
```

where *<parameter pair>* is

*<parameter>=<value>\r\n*

*[<parameter pair>]*

*<length>* is the actual length of content.

**Example:** request IP address and it's response

Request:

```
http://192.168.0.123/cgi-bin/admin/getparam.cgi?network_ipaddress
```

Response:

```
HTTP/1.0 200 OK\r\n
```

```
Content-Type: text/html\r\n
```

```
Context-Length: 33\r\n
```

```
\r\n
```

```
network.ipaddress=192.168.0.123\r\n
```

## Set server parameter values

**Note:** This request require administrator access

**Method:** GET/POST

Syntax:

```
http://<servername>/cgi-bin/admin/setparam.cgi?
[nosync=<value>&]<parameter>=<value>
[&<parameter>=<value>...][&return=<return page>]
```

parameter	value	description
<b>&lt;group&gt;[_&lt;subgroup&gt;] _&lt;name&gt;.</b>	value to assigned	Assign <value> to the parameter <group>_<name>.
<b>return</b>	<return page>	Redirect to the page <return page> after the parameter is assigned. The <return page> can be a full URL path or relative path according the the current path. If you omit this parameter, it will redirect to an empty page.  (note: The return page can be a general HTML file(.htm, .html) or a Vivotek server script executable (.vspx) file. It can not be a CGI command. It can not have any extra parameters. This parameter must be put at end of parameter list)

Return:

```
HTTP/1.0 200 OK\r\n
Content-Type: text/html\r\n
Context-Length: <length>\r\n
\r\n
<parameter pair>
```

where <parameter pair> is  
<parameter>=<value>\r\n

[<parameter pair>]

Only the parameters that you set and readable will be returned.

**Example:** Set the IP address of server to 192.168.0.123

Request:

[http://myserver/cgi-bin/admin/setparam.cgi?Network\\_IPAddress=192.168.0.123](http://myserver/cgi-bin/admin/setparam.cgi?Network_IPAddress=192.168.0.123)

Response:

HTTP/1.0 200 OK\r\n

Content-Type: text/html\r\n

Context-Length: 33\r\n

\r\n

network.ipaddress=192.168.0.123\r\n

## Available parameters on the server

The follow is the list of the security level of parameters.

### Security level

SECURITY LEVEL	SUB-DIRECTORY	DESCRIPTION
0	anonymous	Unprotected.
1 [view]	anonymous, viewer, dido, camctrl	1. Can view, listen, talk to camera 2. Can control dido, ptz of camera
4 [operator]	anonymous, viewer, dido, camctrl, operator	Operator's access right can modify most of camera's parameters except some privilege and network options
6 [admin]	anonymous, viewer, dido, camctrl, operator, admin	Administrator's access right can fully control the camera's operation.
7	N/A	Internal parameters. Unable to be changed by any external interface.

Group: **sourceinfo\_c<0~(n-1)>** n is the source count

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
------	-------	---------	--------------------	-------------

address	<domain name>, <ip address>, <blank>[128]	<blank>	6/7	Full address to access the media
model	string[15]	<blank>	6/7	Model of IP Camera or Video server. Ex: PT7137
firmver	string[15]	<blank>	6/7	Firmware version
video_codec	string[15]	<blank>	6/7	Video codec type
audio_codec	string[15]	<blank>	6/7	Audio codec type
do_number	0, <positive integer>	0	6/7	Number of DO
ptzenabled	< boolean >	0	6/7	indicate whether to support PTZ control
camctrltunnel	<boolean>	0	6/7	Indicate whether to support the http tunnel for camera control
uarttunnel	<boolean>	0	6/7	Indicate whether to support the http tunnel for uart transfer
connection_status	<boolean>	0	6/7	The status of connection
connection_request	<boolean>	0	7/7	Request a connection

Group: **system**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
hostname	string[40]	<Video Receiver>	6/7	host name of server (Network Camera, Wireless Network Camera, Video Server, Wireless Video Server)
date	<yyyy/mm/dd> ,	<current date>	6/6	Current date of system. Set to 'keep' keeping date

	keep, auto			unchanged. Set to 'auto' to use NTP to synchronize date.
time	<hh:mm:ss> , keep, auto	<current time>	6/6	Current time of system. Set to 'keep' keeping time unchanged. Set to 'auto' to use NTP to synchronize time.
ntp	<domain name>, <ip address>, <blank>	<blank>	6/6	NTP server
timezone	-12.00 ~ 12.00	<product dependent >	6/6	time zone, 5.75 means GMT +5:45
updateinterval	0 ~ 2592000	0	6/6	0 to Disable automatic time adjustment, otherwise, it means the seconds between NTP automatic update interval.
restore	0, <positive integer>	N/A	7/6	Restore the system parameters to default value. Restart the server after <value> seconds if <value> is positive integer.
reset	0, -1, <positive integer>	N/A	7/6	Restart the server after <value> seconds if <value> is non-negative.
restoreexceptnet	0, <positive integer>	N/A	7/6	Restore the system parameters to default value except (ipaddress, subnet, router, dns1, dns2, ddns settings). Restart the server after <value> seconds if <value> is positive integer.

SubGroup of **system: info** (The fields in this group are unchangeable.)

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
modelName	string[40]	<RX7101>	0/7	ODM specific model name of server (eg. DCS3220)
serialnumber	<mac address>	<product mac address>	0/7	12 characters mac address without hyphen connected
firmwareversion	string[40]	<product dependent>	0/7	The version of firmware, including model, company, and version number in the format <MODEL-BRAND-VERSION>
webpageversion	string[40]	<product dependent>	0/7	Current webpage version.
language_default	string[16]	<product dependent>	0/7	Default webpage language.
language_count	<integer>	<product dependent>	0/7	number of webpage language available on the server
language_i<0~(count-1)>	string[16]	<product dependent>	0/7	Available language lists

Group: **source\_c<0~(n-1)>** n is the source count

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
address	<domain name>, <ip address>, <blank>[128]/40	<blank>	6/6	IP Camera or Video server
port	80, 1025 ~ 65535	<blank>	6/6	HTTP port
username	string[64]/16	<blank>	6/6	User's name
password	password[64]/16	<blank>	6/6	User's password

protocol	multicast, udp, tcp	<multicast >	6/6	The protocol of streaming
media	av, audio, video	<av>	6/6	The media for streaming
autoconnect	<boolean>	1	6/6	Auto connect to the server

Group: **videoout**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
channelmode	single, multiple	<single>	6/6	Single channel mode always shows the channel 1. There are two display mode in multiple channel mode.
displaymode	sequential, quad	<quad>	6/6	Display mode in multiple channel mode
switchperiod	10-99	10	6/6	The channel switch period in sequential display mode
modulation	ntsc, pal	<ntsc>	6/6	Modulation for video output

Group: **audioout**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
channel	0~3	<1>	6/6	Output audio channel
volume	1~100	<50>	6/6	The volume of audio output

Group: **security**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
user_i0_name	string[64]/16	<blank>	6/6	User's name, only root's account
user_i0_pass	password[64] /16	<blank>	6/6	User's password, only root's account

Group: **network**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
type	lan, pppoe	lan	6/6	Network connection type
resetip	<boolean>	1	6/6	1 => get ipaddress, subnet, router, dns1, dns2 from DHCP server at next reboot 0 => use preset ipaddress, subnet, router, dns1, and dns2
ipaddress	<ip address>[15] /16	192.168.0. 99**	6/6	IP address of server
subnet	<ip address>	<blank>	6/6	subnet mask
router	<ip address>	<blank>	6/6	default gateway
dns1	<ip address>	<blank>	6/6	primary DNS server
dns2	<ip address>	<blank>	6/6	secondary DNS server

Subgroup of **network: http**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
port	80, 1025 ~ 65535	80	6/6	HTTP port
alternateport	1025~65535	8080	6/6	Alternative HTTP port
authmode	basic, digest	basic	6/6	HTTP authentication mode
enablessl	<boolean>	0	6/6	Enable HTTP over SSL

Subgroup of **network: pppoe**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
user	string[128]/40	<blank>	6/6	PPPoE account user name
pass	password[64]/16	<blank>	6/6	PPPoE account

				password
--	--	--	--	----------

Group: **server**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
email_ i<0~(in-1)>_address	string[128]/ 40	<blank>	6/6	The address of SMTP server
email_ i<0~(in-1)>_username	string[64]/1 6	<blank>	6/6	The username to login in the server
email_ i<0~(in-1)>_password	string[64]/1 6	<blank>	6/6	The password of the user
email_ i<0~(in-1)>_senderemail	string[128]/ 40	<blank>	6/6	The email address of sender
email_ i<0~(in-1)>_recipientemail	string[128]/ 40	<blank>	6/6	The email address of recipient

Group: **upnpresentation**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
enable	<boolean>	1	6/6	Enable or disable the UPNP presentation service.

Group: **do\_i<0~(ndo-1)>** (capability.ndo > 0)

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
enable	<boolean>	0	6/6	Enable digital output
followchannel	0~3	<n-1>	6/6	The DO status follows channel 1,2,3,4.
serverdo	0(~3)	<0>	6/6	The DO index of server

Group: **uart\_i<0~(n-1)>** n is uart port count (capability.nuart>0)

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
baudrate	110,300,600, 1200,2400, 4800, 9600,19200, 38400	2400	6/6	set baud rate of COM port
databit	5,6,7,8	8	6/6	
stopbit	1,2	1	6/6	0 1 2-1.5 , data bit is 5 2-2
paritybit	none, odd, even	none	6/6	

Group: **syslog**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
enableremotelog	<boolean>	0	6/6	enable remote log
serverip	<IP address>	<blank>	6/6	Log server IP address
serverport	514, 1025~65535	514	6/6	Server port used for log

Group: **capability**

NAME	VALUE	DEFAULT	SECURITY (get/set)	DESCRIPTION
api_httpversion	0200a	<product dependent>	0/7	The HTTP API version.
nir	0, <positive integer>	<0>	0/7	number of IR interface
ndi	0, <positive integer>	<0>	0/7	number of digital input

ndo	0, <positive integer>	<4>	0/7	number of digital output
naudioin	0, <positive integer>	<0>	0/7	number of audio input
naudioout	0, <positive integer>	<1>	0/7	number of audio output
nvideoin	<positive integer>	<0>	0/7	number of video input
nvideochannel	<positive integer>	<4>	0/7	number of video channel
naudiochannel	0,<positive integer>	<1>	0/7	number of audio channel
nuart	0, <positive integer>	<1>	0/7	number of UART interface
ptzenabled	< boolean >	<0>	0/7	indicate whether to support PTZ control
ptzenabledclient	< boolean >	<1>	0/7	indicate whether to support PTZ control at client side
protocol_https	< boolean >	<0>	0/7	indicate whether to support http over SSL
protocol_rtsp	< boolean >	<1>	0/7	indicate whether to support rtsp
protocol_sip	<boolean>	<0>	0/7	indicate whether to support sip
protocol_rtp_multicast_scalable	<boolean>	<1>	0/7	indicate whether to support scalable multicast

protocol_rtp_multicast_backchannel	<boolean>	<0>	0/7	indicate whether to support backchannel multicast
protocol_rtp_tcp	<boolean>	<1>	0/7	indicate whether to support rtp over tcp
protocol_rtp_http	<boolean>	<1>	0/7	indicate whether to support rtp over http
protocol_spush_mjpeg	<boolean>	<1>	0/7	indicate whether to support server push motion jpeg
protocol_snmp	<boolean>	<0>	0/7	indicate whether to support snmp
videoin_resolution	<a list of the available resolution separates by comma>	<160x120, 176x120, 176x144, 320x240, 352x240, 352x288, 640x480, 704x480, 704x576>	0/7	available resolutions list
videoin_codec	<a list of the available codec types separators by comma>	<mpeg4, mjpeg>	0/7	available codec list
videoout_type	0, 1, 2, 3	<3>	0/7	0 => no 1 => NTSC 2 => PAL 3 => BOTH

audio_aec	<boolean>	<0>	0/7	indicate whether to support acoustic echo cancellation
audio_extmic	<boolean>	<0>	0/7	indicate whether to support external microphone input
audio_linein	<boolean>	<0>	0/7	indicate whether to support external line input
audio_lineout	<boolean>	<1>	0/7	indicate whether to support line output
audio_headphoneout	<boolean>	<0>	0/7	indicate whether to support headphone output
audioin_codec	<a list of the available codec types separaters by comma>	<aac4, gamr>	0/7	available codec list
camctrl_httpstunnel	<boolean>	<0>	0/7	Indicate whether to support the http tunnel for camera control
camctrl_httpstunnelclient	<boolean>	<1>	0/7	Indicate whether to support the http tunnel for camera control at client side
uart_httpstunnel	<boolean>	<0>	0/7	Indicate whether to support the http tunnel for uart transfer
uart_httpstunnelclient	<boolean>	<1>	0/7	Indicate whether to support the http

				tunnel for uart transfer at client side
transmission_mode	Tx, Rx, Both	<RX>	0/7	Indicate what kind of transmission mode the machine used. TX: server, Rx: receiver box, Both: DVR?.
network_wire	<boolean>	<1>	0/7	Indicate whether to support the Ethernet
wireless_s802dot11b	<boolean>	<0>	0/7	Indicate whether to support the wireless 802.11b+
wireless_s802dot11g	<boolean>	<0>	0/7	Indicate whether to support the wireless 802.11g
wireless_encrypt_wep	<boolean>	<0>	0/7	Indicate whether to support the wireless WEP
wireless_encrypt_wpa	<boolean>	<0>	0/7	Indicate whether to support the wireless WPA
wireless_encrypt_wpa2	<boolean>	<0>	0/7	Indicate whether to support the wireless WPA2

## System logs

**Note:** This request require administrator privilege

**Method:** GET/POST

Syntax:

<http://<servername>/cgi-bin/admin/syslog.cgi>

Server will return the up-to-date system log.

Return:

```
HTTP/1.0 200 OK\r\n
Content-Type: text/plain\r\n
Content-Length: <syslog length>\r\n
\r\n
<system log information>\r\n
```

## Upgrade firmware

**Note:** This request requires administrator privilege

Method: POST

Syntax:

```
http://<servername>/cgi-bin/admin/upgrade.cgi
```

**Post data:**

```
fimage=<file name>[&return=<return page>]\r\n
\r\n
<multipart encoded form data>
```

Server will accept the upload file named <file name> to be upgraded the firmware and return with <return page> if indicated.

## D. Technical specifications

### - System

CPU: VVTK-1000 and PNX-1502  
RAM: 32MB SDRAM  
ROM: 8MB FLASH ROM  
Embedded OS: Linux 2.4

### - Networking

Protocol  
TCP/IP, HTTP, SMTP, FTP, NTP, DNS, DHCP and RTSP  
Physical  
10 baseT or 100 baseT Fast Ethernet auto negotiation

### - Video

Motion JPEG video with resolution up to D1  
MPEG-4 video with resolution up to D1  
Frame rates: up to 30fps  
4-channel CIF real-time decoding

### - Audio

GSM-AMR speech decoding  
AAC audio decoding

### - Microphone

Omni-directional  
Frequency: 50 – 16000Hz  
S/N ratio: more than 60dB

### - General I/O

4 digital output  
RS-485

### - LED indicator

Two color system status indicators

### - Security

Administrator password authentication

### - Dimension

166mm(L) \* 147mm(W) \* 42mm(H)

### - Weight

NET. 703g

### - Power

Input: 100-240VAC, 50/60Hz  
Output: 12VDC, 1.5A  
Consumption: 6 W

### - Operating Environment

Temperature: 0-50°C/32-122°F  
Humidity: 95%RH

### - EMI & Safety

CE, FCC, VCCI

### - Application

Installation wizard

### - Viewing system requirement

Operating system  
Microsoft Windows 98SE/ME/2000/XP  
Browser  
Internet Explorer 6 or above

## Technology License Notice

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### MPEG-4 AAC Technology

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## Electromagnetic Compatibility (EMC)

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions.

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

**Europe** € - This digital equipment fulfills the requirement for radiated emission according to limit B of EN55022/1998, and the requirement for immunity according to EN50082-1/1992.

## Liability

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