

# **Prestel VCS-G1 Videoconferencing Endpoint Administrator Guide**

## **Copyright Notice**

All contents of this manual, whose copyright belongs to Prestel Ltd.

No part of this document may be reproduced or transmitted in any form or by any means without prior consent of Prestel Ltd.

All specifications and information in this document do not constitute a warranty of any kind, express or implied, and the content will be updated at any time without prior notice.

Prestel Ltd.

<http://prestel.ru/>

E-mail: [sale@prestel.ru](mailto:sale@prestel.ru)

Technical support: [support@prestel.ru](mailto:support@prestel.ru)

Phone: 8(800) 333-43-06

Fax: 8(800) 333-43-06

# Contents

1. Overview.....	3
1.1. Definition of an Endpoint Administrator .....	3
1.2. Requirements on an Administrator.....	3
1.3. Related Documentation .....	4
1.4. Safety Precaution.....	5
1.5. How to Obtain Help.....	7
2. Menu Structure of the UI interface .....	8
3. Conference Experience .....	13
3.1. Installation Wizard.....	13
3.2. Initiating a Conference .....	13
3.2.1. Initiating a Conference from the Call Page.....	13
3.3. Initiating a Conference from Address Book.....	14
3.4. Send Dual-Stream .....	14
3.5. Setting the Combined Picture .....	15
4. Managing the Local Address Book.....	16
4.1. Adding the Local Address Book .....	16
4.2. Editing the Local Address Book .....	16
4.3. Deleting the Local Address Book .....	16
5. Device Control .....	18
5.1. Controlling Audio.....	18
5.2. Controlling Video.....	20
5.2.1. Video input .....	20
5.2.2. Video output .....	20
5.3. Controlling a Camera .....	21
5.4. Setting Camera Parameters .....	22
5.4.1. Setting Camera Parameters .....	22
5.4.2. Setting a Camera Preset .....	24
5.4.3. Clearing a Camera Preset.....	25
6. System Setting.....	26
6.1. Setting the System Time .....	26
6.2. Setting the System Language.....	26
6.3. Specifying Network Settings.....	27
6.3.1. Setting IP parameters .....	27
6.3.2. Setting H.323 Account.....	28
6.3.3. Setting SIP account.....	29
6.3.4. Setting Firewall Parameters .....	30
6.4. Security Configuration.....	32
6.5. Specifying Conference Parameters .....	33
6.5.1. Setting Audio Protocols.....	34
6.5.2. Setting Video Protocols.....	34
6.5.3. Setting General Parameters .....	34
7. Conference diagnostic information.....	36

8. Upgrading .....	38
9. Troubleshooting .....	40
10. Technical Specifications.....	41
10.1. Physical Spcifications.....	41
10.2. Preformance Specifications.....	41
10.3. Ports and Protocols.....	42
10.4. Standards Compliance .....	42
A Shotcut Description of Remote Control.....	44
B Glossary.....	46

# 1. Overview

This document guides you through configuring, managing, maintaining, and troubleshooting the endpoint.

## 1.1. Definition of an Endpoint Administrator

An endpoint administrator is an enterprise employee who is responsible for managing and maintaining endpoint operations.

An endpoint administrator has the following job responsibilities:

- Configures and manages the endpoint.
- Routinely maintains the endpoint.
- Troubleshoots the endpoint failures.
- Answers standard users' questions about endpoint use.

## 1.2. Requirements on an Administrator

As an administrator, you must meet the following basic endpoint administrator proficiencies and be capable of collecting all information related to the endpoint and its working environment.

### Basic Endpoint Administrator Proficiencies

- Windows operating system
- Gatekeeper (GK) and Session Initiation Protocol (SIP) servers
- Ethernet, TCP/IP, and Client/Server (C/S) model
- H.323 and SIP protocols
- Safe and effective use of electronic devices
- Common maintenance tools
- Videoconferencing endpoint functions and services

Information About the Endpoint and Its Working Environment

**Table 1-1** lists the endpoint and working environment information that must be collected, which helps you fulfill your job responsibilities and check the preparations for a recovery from an emergency.

**Table 1-1** Information to be collected

<b>Category</b>	<b>No.</b>	<b>Item</b>	<b>Description</b>
Device information	1	Device location	Record the endpoint location in as much detail as possible so the endpoint can be quickly located.
	2	Networking condition	Record the network topology and hardware connection diagram that include every device.
	3	Endpoint information	List the IP address, user name, and password for the endpoint so you can quickly log in to the endpoint in case of an emergency. If you are not permitted to record the password for security reasons, memorize it.
Software and tools	4	Software versions and tools	List the software versions corresponding to the endpoint. Prepare troubleshooting tools.
Contact information	5	Purchased parts' service information	Record the manufacturer contact information, serial numbers, and manufacturers' warranty clauses for purchased parts.
	6	Technical support personnel's contact information	Maintain a list of technical support personnel with their contact information and responsibilities.
Spare parts	7	Spare parts	List all spare parts (including the spare parts that Huawei can provide) and corresponding procurement methods.
	8	Redundant or temporary devices	such as standby file servers and database servers.

### 1.3. Related Documentation

You can refer to the documentation listed in [Table 1-2](#).

Document	Description	When to Use
C9 Videoconferencing Endpoint Quick Installation Guide	Describes the packaged items and provides guidance for quick installation, and common configuration.	When checking whether the carton contains all the required items and when installing the endpoint
C9 Videoconferencing Endpoint Quick Installation Guide	Describes the remote controlled UI and provides quick instructions in commonly-used endpoint functions.	When answering questions from standard users who are using the endpoint for the first time or unfamiliar with the endpoint

### 1.4. Safety Precautions

For safety purposes, carefully read through these safety precautions and observe them during operation.

#### Basic Precautions

- Keep the device dry and secure from collision during storage, transportation, and operation of the device.
- Do not attempt to dismantle the device by yourself. In case of any fault, contact the appointed maintenance center for assistance or repair.
- Without prior written consent, no organization or individual is permitted to make any change to the structure or safety and performance design of the device.
- While using the device, observe all applicable laws, directives, and regulations, and respect the legal rights of others.

#### Environmental Precautions

- Place the device in a well-ventilated place. Do not expose the device to direct sunlight.
- Install the device strictly according to the requirements of the manufacturer.
- Do not place any object on the top of the device. Reserve a minimum space of 10 cm at the four sides of the device for heat dissipation.
- Do not place the device on or near inflammable materials such as foam.
- Keep the device away from heat source or fire, such as a radiator or a candle.
- Keep the device away from any household appliances with strong electromagnetic fields, such as a microwave oven, refrigerator, or mobile phone.

#### Operating Precautions

- Do not allow children to play with the device or accessories. Swallowing the accessories

may be fatal.

- Before touching the device, holding the board, circuit board, IC chip, etc., to prevent human static damage sensitive components, you must wear anti-static bracelet, and connect another side of the anti-static bracelet to grounding
- Use the accessories such as the power adapter and battery provided or authorized only by the manufacturer.
- Please ensure that the equipment supply voltage to meet the input voltage requirements of equipment, please use the supporting lightning protection plug board
- Ensure that the three-phase power socket is grounded properly. The neutral line and the live line cannot be connected inversely.
- Keep the power plug clean and dry, to prevent electric shock or other dangers.
- Do not step on, pull, or over bend any cable. Otherwise, the cable may be damaged, leading to malfunction of the device.
- Do not scratch or abrade the shell of the device. The shed painting may lead to skin allergy or malfunction of the device. If the shed painting material drops into the host, a short circuit may occur.
- Ensure that no object (such as metal shavings) enters the device through the heat dissipation vent.
- Before plugging or unplugging any cable, shut down the device and disconnect the power supply. While plugging or unplugging any cable, ensure that your hands are dry.
- Before connecting any other cable, connect the ground cable of the device. Do not disconnect the ground cable until you have disconnected all the other cables.
- Ensure that the device does not get wet. If water gets into the device, disconnect the power supply immediately and unplug all the cables connected to the device, including the power cable, telephone cable, video cable, audio cable, network cable, and serial cable, and then contact the appointed maintenance center.
- If smoke, sound, or smell is emitted from the device, stop using the device immediately, disconnect the power supply, unplug the power plug and other cables, and remove the batteries. Then, contact the appointed maintenance center for repair.
- In lightning weather, disconnect the device from the power supply and unplug all the cables connected to the device., Such as Power Supply, Video Cable, Audio Cable, Network Cable and RS485/RS232 Cable
- If the device is not used for a long time, disconnect the power supply and unplug the power plug., Such as Power Supply, Video Cable, Audio Cable, Network Cable and RS485/RS232 Cable

### **Cleaning Precautions**

- Before cleaning the device, stop using it, disconnect the power supply, and unplug all the cables connected to the device, including the power cable, telephone cable, video cable, audio cable, network cable, and serial cable.
- Do not clean the device shell with any cleaning solution or cleanser spray. Use a piece of soft cloth to clean the device shell.

### **Battery Usage Precautions of the Remote Control**

- Use only the recommended battery. Pay attention to the polarity of the batteries while installing them.
- If a battery does not fit in the device, do not apply force. Otherwise, the battery may leak or explode.
- If any battery leaks, emits smoke, or emits abnormal smell, stop using it immediately.
- Do not use a new battery with an old battery. When you replace batteries, replace all of them at the same time.

### **1.5. How to Obtain Help**

When you encounter an endpoint issue, Please contact technical support personnel.



## 2. Menu Structure of the Web Interface

Knowing the menu structure of the endpoint web interface helps you quickly find each function item.

Below Picture shows the menu structure

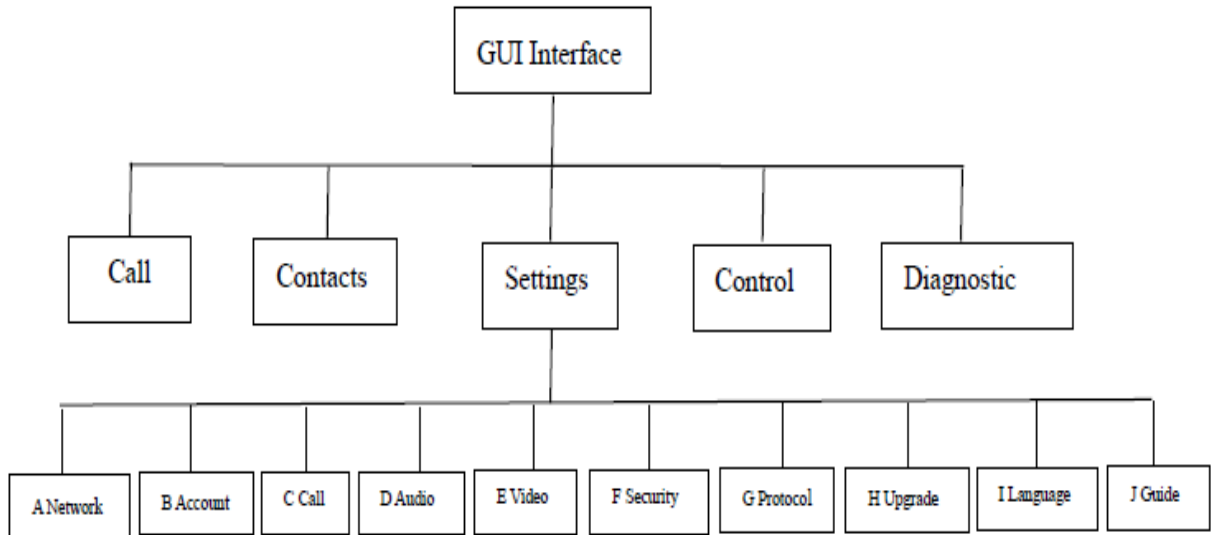


Figure 2-1 shows the Endpoint GUI structure.

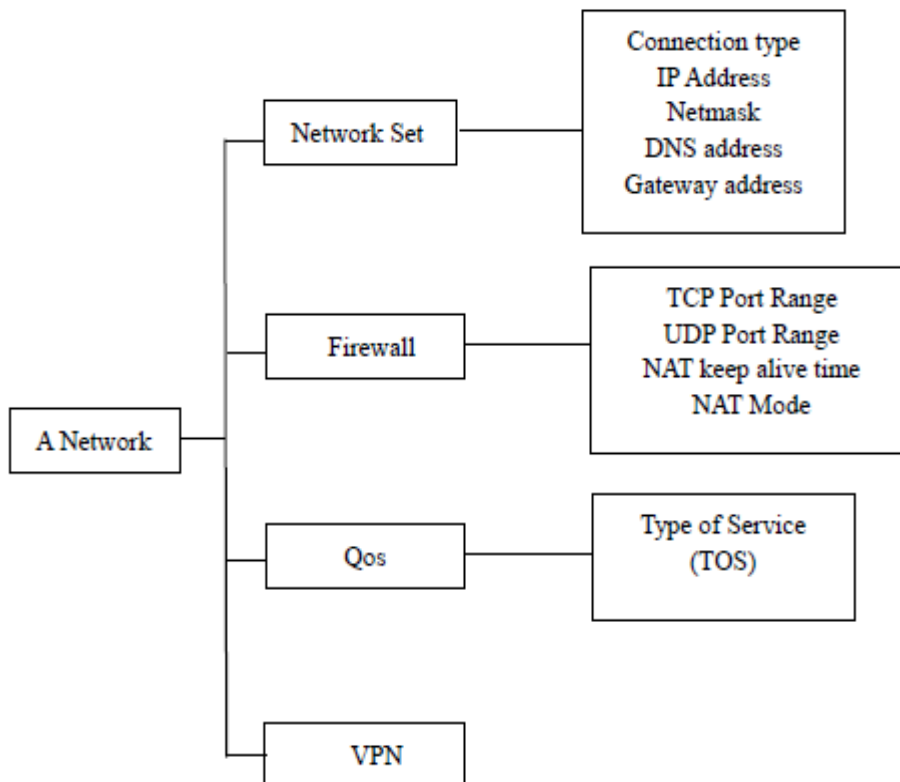


Figure 2-2 shows the Web Page structure.

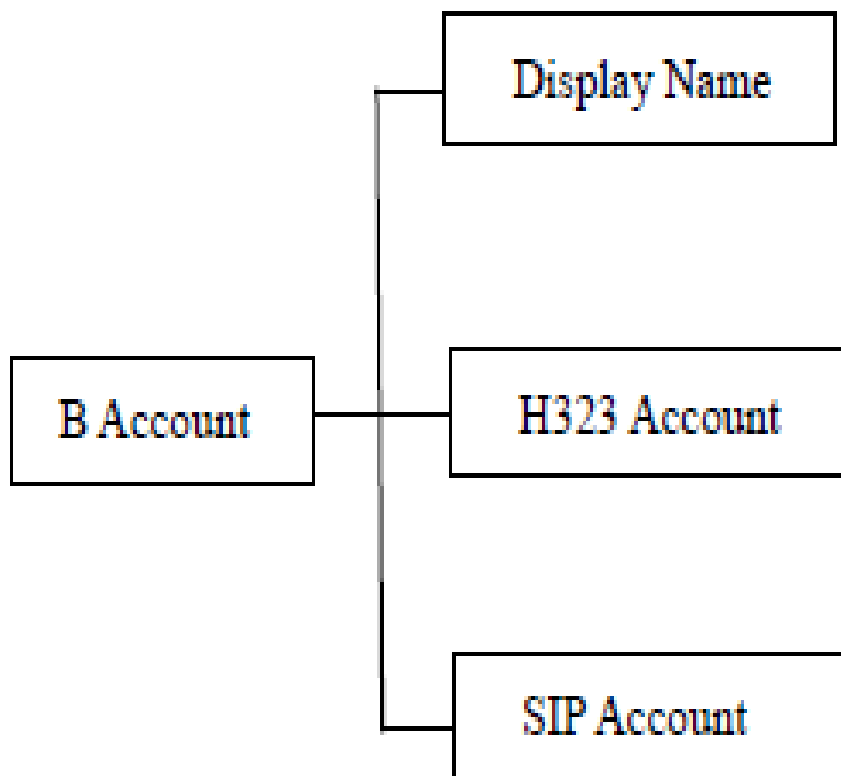


Figure 2-3 shows the Account Page structure.

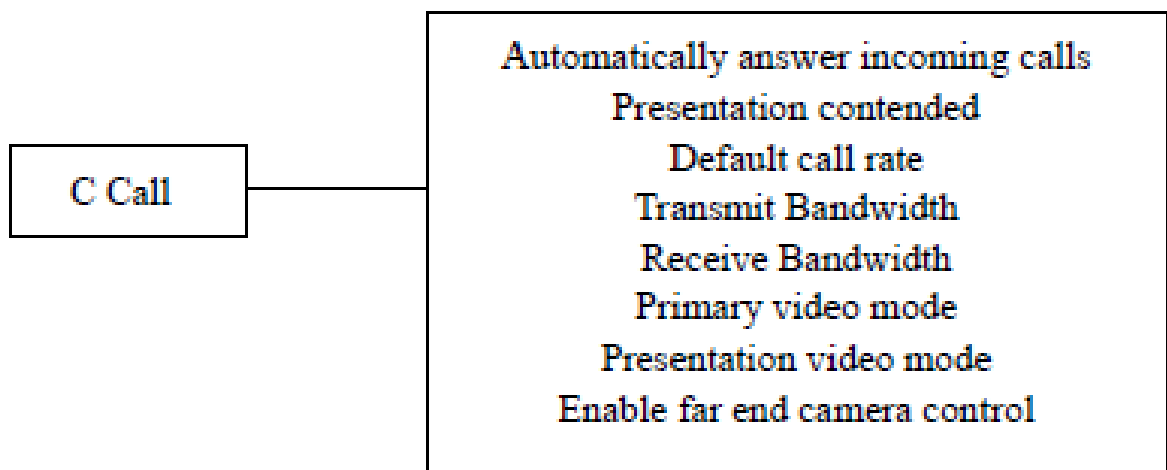


Figure 2-4 shows the Call Page structure.

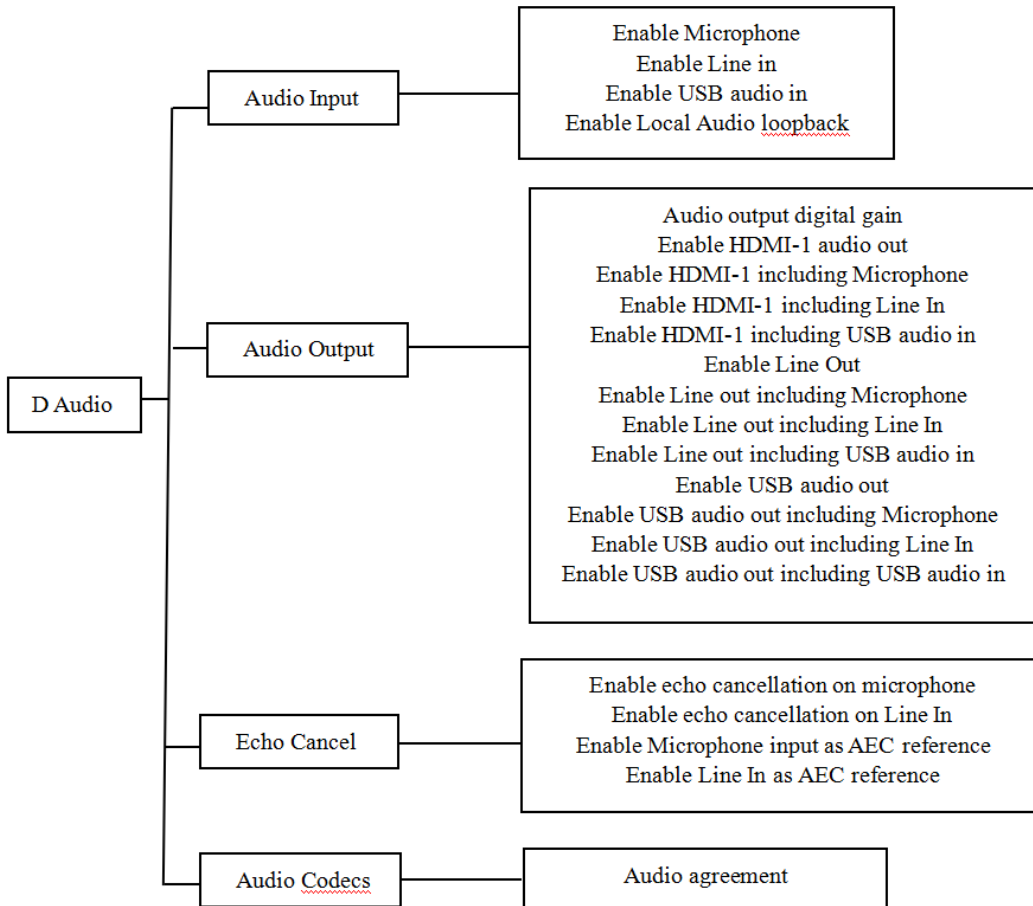


Figure 2-5 shows the Audio Page structure.

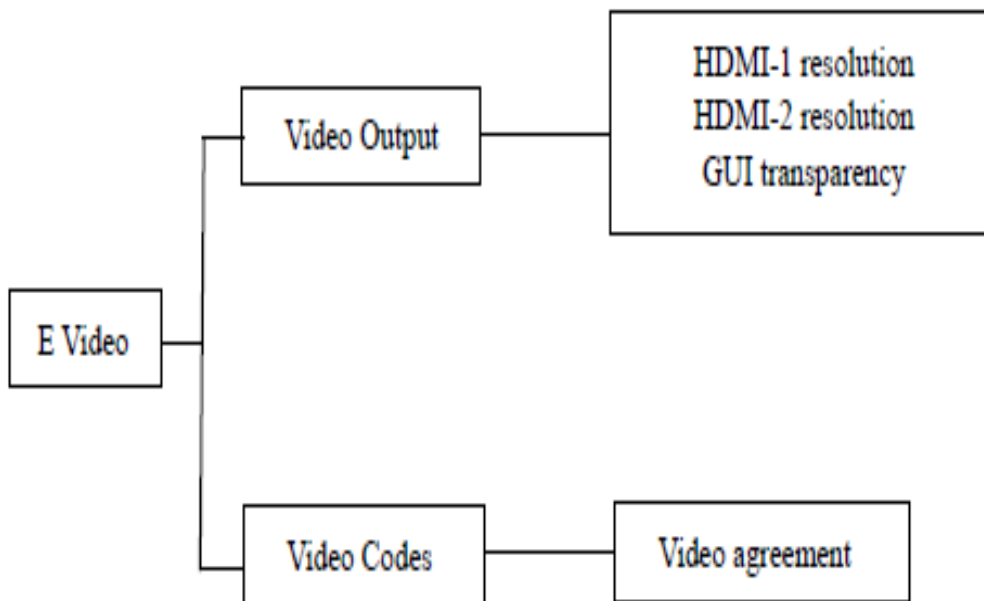


Figure 2-6 shows the Video Page structure.

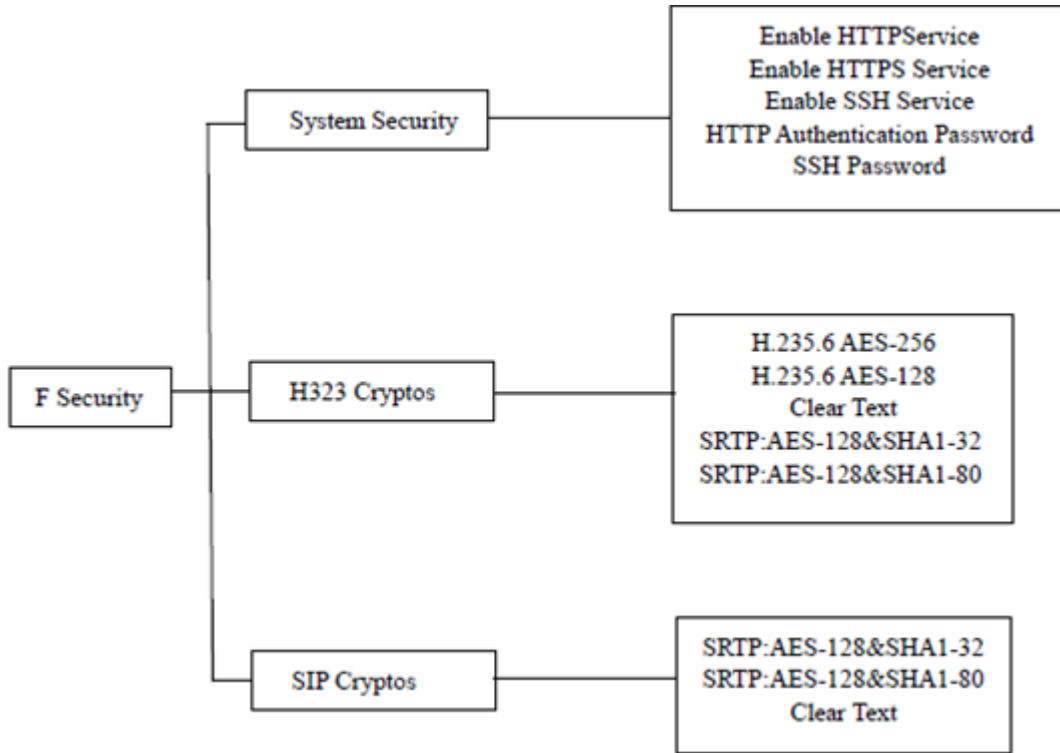


Figure 2-7 shows the Security Settings Page structure.

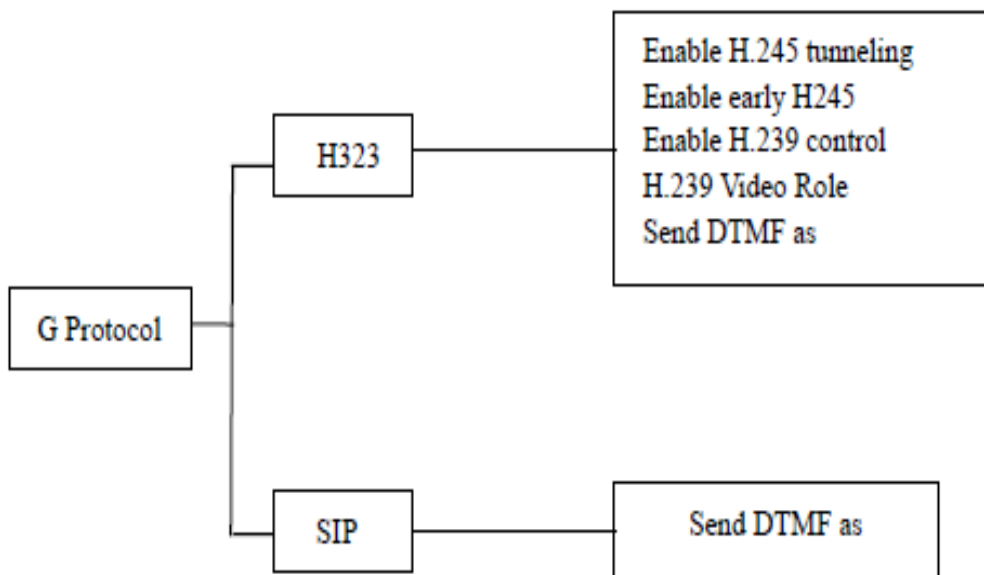
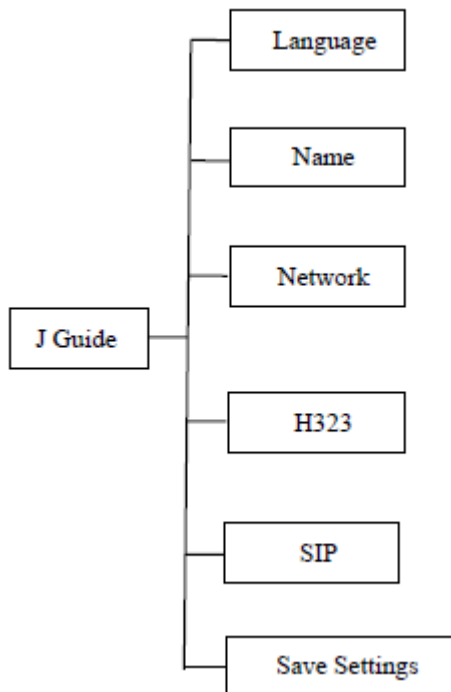


Figure 2-8 shows the protocol configuration Page structure.



**Figure 2-9** shows the configuration wizard Page structure.

## 3. Conference Experience

You can initiate or join conferences in multiple ways on the endpoint web interface. During a conference, you can control the conference or share presentations.

### 3.1. Installation Wizard

The installation wizard starts automatically when the terminal is turned on for the first time, You can also start the setup wizard through the setup menu to complete the basic setup

#### Procedure

**Step 1** "Setting > Guide", enter Guide setting page

**Step 2** "Language > Setting > Language and input", Select the language according to your requirements.

**Step 3** Choose "next step", enter "endpoint name" page, enter the endpoint name at input

**Step 4** Select "Next" to enter the "Network" page. Select "Settings> Ethernet Configuration" to set the network parameters and save them. (For details, refer to section 6.3.1 "Configuring IP Parameters".)

**Step 5** Select "Next" to enter the "H 323" page. Complete the GK account parameter settings. (See the specific parameter settings 6.3.2 Configuring the H.323 Account. )

**Step 6** Select "Next" to enter the "Save" page. Save Settings. The terminal interface is then reloaded

----End

**Note:**

You can choose Back to modify the configuration, or Exit to discard the wizard settings.

### 3.2. Initiating a Conference

You can initiating a conference as below two ways;

#### 3.2.1. Initiating a Conference from the Call Page

On the call page, you can select a site, configure the line type and rate for the site, and place a call to the site to start a conference.

**Procedure**

**Step 1** Choose **Conference > Call**.

**Step 2** Select a remote site you want to call using either of the following methods:

- Click **Call History** and select the remote site.
- Enter the name, number, or IP address of the remote site.

**Step 3** Set the site parameters, listed in **Table 3-1**.

**Table 3-1** Site parameters

Parameter	Description	Setting
Site name/IP address/Number	Specifies the name, number, or IP address of the site you want to call.	By default, the last used type is displayed. Meeting room name/IP/number
Call Type	set this parameter to <b>H.323</b> or <b>SIP</b>	By default, the last used type is displayed.
Rate	Specifies the data transmission rate required.	Select the best available data transmission rate. <b>NOTE</b> If this parameter is set incorrectly, the video quality will be affected or the call might even fail to be set up.

**Step 4** Select Call

----End

### 3.3. Initiating a Conference from the Address Book

You can select a site from the address book and place a call to the site to initiate a conference

#### Procedure

**Step 1** Choose **Address Book**

**Step 2** Select one site you want to call from the local address book

**Step 3** Select **Call**.

----End

#### Note:

Initiating a conference calling through the address book, the call type of the site parameter and call rate are the parameter which set by call page.

### 3.4. Send Dual-Stream

You can connect the computer to the endpoint to display the content of the stored on a computer, the remote site can see you and the content you displayed on the computer.

#### Precondition

Connect the computer to the DVI IN input interface of endpoint through cable

#### Procedure:



**Step 1** Press button **CONTENT**, send the dual-stream request.

----End

### 3.5. Setting the Combined Picture

With the combined picture function, you can view multiple videos (such as the local and remote videos and presentations) in Picture in Picture (PiP) or split-screen mode on one display.

#### Prerequisites

Two or more of the following video sources are available: local video, local presentation, remote video, and remote presentation.

#### Procedure



**Step1** Press remote control button **LAYOUT** to Setting the Combined Picture.

----End

## 4. Managing the Local Address Book

The address book stores site information. You can add, edit, and delete site entries. The address book saves time because you do not need to enter site information to initiate a conference and prevents entry of incorrect IP addresses.

### 4.1. Adding the Local Address Book

From the address book page ,you can add a site.

#### Procedure

**Step 1** Choose Address Book, enter to the address book page

**Step 2** Select "Add"

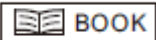
**Step 3** Entering contact name in the input box" contact"

**Step 4** Entering site No. or IP address in the input box" Address"

**Step 5** Click " Confirm"

----End

#### Note:

Also you can Press Shortcut  enter to Address Book page by remote control

### 4.2. Editing the Local Address Book

From the address book page, you can Editing a site

#### Procedure

**Step 1** Choose **Address Book > Address Book.**

**Step 2** Select the editing line from the Local address list, then "Editing"

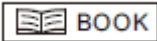
**Step 3** Editing contact name in the input box which is pop-up editor address book page

**Step 4** Editing Site No. or IP address in the input box which is pop-up editor address book page

**Step 5** Select "confirm"

----End

#### Note:

Also you can Press Shortcut  enter to Address Book page by remote control

### 4.3. Deleting the Local Address Book

Deleting the site at the address page

#### Procedure

**Step 1** Choose **Address Book > Address Book.**

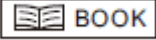


**Step 2** Select the editing line at local address list ,click “editing”.

**Step 3** Click” Deletng ” at the pop-up editor address book interface.

----End

**Note:**

Also you can Press Shortcut  entre to Address Book page by remote control

# 5. Device Control

After a conference starts, you can control the video and audio devices on the endpoint web interface to obtain the expected conference effect.

## 5.1. Controlling Audio

On your TE30, you can adjust the audio effects. For example, you can adjust the volume of the microphone and speaker.

### Procedure

**Step 1** Choose **Device Control > Device Control** a

**Step 2** Set the audio parameters listed in **Table 5-1**

**Table 5-1** Audio parameters

Parameter	Description	Setting
<b>Audio Input</b>		
Audio Input Gain	Adjust input Gain	The Default Value: 8 Value Range: 0 ~16
Enable Microphone input	Remote site connect the local Microphone input, After enable Microphone input and connect correctly to the back of endpoint Microphone,	The Default Value: Enabled
Enable linearity Input	Remote site can receive the local linearity input After Enable linearity input and connect correctly to the back of endpoint Audio In,	The Default Value: Enabled
Enable The Local Audio loopback	You can check the local Audio is normal or not in a conference after enable the local audio loopback.	The Default Value : Disable
<b>Audio Output</b>		
Audio output Gain	Adjust Audio output Gain	The Default Value: 8 Value Range: 0 ~16
enable HDMI-1 Audio output	You can hear the voice of the remote audio output from TV after enable HDMI-1 Audio output and connect the TV to the back of endpoint HDMI-1.	The Default Value : Enabled
HDMI-1 output including	Your can hear the voice from the	The Default Value :


Microphone input.	local microphone input	Disable
HDMI-1 output and linearity input	You can hear the voice from the local linearity input after enable HDMI-1 output including linearity input.	The Default Value : Disable
Enable linearity Output	You can hear the remote voice from the Speaker after enable linearity output and the Speaker connect correctly to the back of endpoint "AUDIO OUT"	The Default Value : Disable
linearity output including the Microphone input	You can hear the local voice from Speaker after enable the linearity output including the Microphone input.	The Default Value : Disable
Line in output including line in input	You can hear the local linearity input voice from the TV which connected to the HDMI-OUT1 after enable HDMI-1 output including Microphone input.	The Default Value : Disable
<b>AEC</b>		
Enable AEC for Microphone input	If echo cancellation is enabled, the endpoint removes echo in the audio input from the Microphone interfaces.	The Default Value : Enabled
Enable AEC for Line in	If echo cancellation is enabled, the endpoint removes echo in the Line in	The Default Value : Disable
Add Microphone to AEC for refer	If echo cancellation is enabled, it can effectively suppress howling.	The Default Value : Disable
Add the linearity to AEC for refer	If echo cancellation is enabled, it can effectively suppress howling	The Default Value : Disable

**Step 3** Select “Save”

----End

**Note:**

Press the remote control shortcut  for Cycle shutdown or Enable Microphone

input; press shortcut  to adjust volume.

## 5.2. Controlling Video

You can set up the parameter of video input and output, in order to meet your requests.

### 5.2.1. Video input

You are familiar with the the endpoint Video input capability to setup the correct video input parameters.

The endpoint offer one DVI IN interface from the Built-in camera, this interface is connect to the computer output interface and use for enter the computer desktop content, it can also use for connect the external camera as a second input.

### 5.2.2. Video output

You are familiar with the endpoint Video output capability to setup the correct video output parameters.

The endpoint have two video output interface: HDMI OUT 1 HDMI OUT 2.

Different interface support different output image format, please according to the actual demand to select the video output interface,

**Table 5-2** Video output ability

Interface	Type	Default after boot-strap
HDMI OUT 1	HDMI	The Default is “Main output”
HDMI OUT 2	HDMI	The Default is “the second output”, Black screen, Generally used for output desktop display.

### Procedure

**Step 1** Choose “Setting>Video>video output”

**Step 2** Setup Video output parameters. List in Table 5-3

**Table 5-3** Video output parameters

Parameter	Description	Setting
HDMI -1 Resolution	Below five format are available for Video output format, Please choose one of format according to your need. <ul style="list-style-type: none"> <li>● 1080P60</li> <li>● 1080P50</li> <li>● 1080I50</li> <li>● XGA</li> <li>● SXGA</li> </ul>	The default of output format: "1080P60"
HDMI -2 Resolution	Below five format are available for Video output format, Please choose one of format according to your need. <ul style="list-style-type: none"> <li>● 1080P60</li> <li>● 1080P50</li> <li>● 1080I50</li> <li>● XGA</li> <li>● SXGA</li> </ul>	The default of output format: "1080P60"
GUI transparency	You can adjust the GUI transparency according to your request.	The default Value: 30 Value Range: 0~50

**Step3** Select" Save"





----End


### 5.3. Controlling a Camera

You can perform Pan, tilt, and zoom (PTZ) control over a local or remote camera.


#### Prerequisites

You are familiar with the following buttons for camera control:

-  : Brings up a menu of camera parameters
-  : Set preset
-  : Call preset
-  : Clear Preset


- ▲ : Rotate the camera to upward when you control the camera.
- ► : Rotate the camera to rightward when you control the camera.
- ▼ : Rotate the camera to downward when you control the camera.
- ◀ : Rotate the camera to light leftward when you control the camera.
-  : Zoom in or Zoom out

**Procedure**

**Step 1** When display GUI, press remote control shortcut  , enter the camera control interface.(When the GUI is hide, the camera have entered the camera control interface, so ignore this step 1.)

**Step 2** According to your request to control the camera, the remote control shortcuts instruction as describe above.

**Note :**


You also can press shortcut  directly to enter the camera control interface.

**5.4. Setting camera parameters**

On your endpoint, you can set its camera parameters, including white balance, image inversion parameters and image inversion, You can view the video result of your settings on the display connected to your endpoint ,Otherwise set and store the preset, call preset according to your request,

**5.4.1. Setting camera parameters**

**Procedure**

**Step 1** Press remote control 

**Step 2** Setting built-in camera parameters list in [Table 5-4.](#)

**Table 5-4** camera parameters

Parameter	Description	Setting
White	White balance including six mode <ul style="list-style-type: none"> <li>● <b>Auto</b>: The built-in camera automatically selects the optimum exposure and white balance settings based on the ambient environment</li> <li>● "indoor": Built-in camera automatically set for the optimal allocation under the indoor</li> </ul>	The Default Value: "Auto".

Balance	<p>scenarios</p> <ul style="list-style-type: none"> <li>● “outdoor”: Built-in camera automatically set for the optimal allocation under the outdoor scenarios</li> <li>● <b>Manual:</b> You must manually set the following exposure and white balance parameters:  “R Gain”: adjusts the brightness of red signals.  “B Gain”: adjusts the brightness of blue signals.</li> </ul> <p><b>Note:</b>  When you adjust “R Gain” and “B Gain” at same time, the white balance switch to Manual mode automatic</p>	
Picture parameter	<p>You can adjust below picture parameters according to your request.</p> <ul style="list-style-type: none"> <li>● “Contrast”:  The higher the ratio, the better the contrast, the images more clearly ,the color more bright.</li> <li>● “Brightness”:  Image of the light and shade degree</li> <li>● “Chromaticity”:  The color of the hue and saturation</li> </ul>	<p>The Default Value:  Contrast: 0  Bright degree: -2  Chromaticity: 3</p>
Backlight setting	<p>If a light behind the subject ,the subject will become dark, in that case, process Backlight compensation</p> <ul style="list-style-type: none"> <li>● “Enable backlight compensation”:  Backlight compensation make the image more bright, when the camera is behind light, the image will become dark, enable backlight compensation improved the image more bright..</li> </ul>	<p>The Default Value: disable</p>
Anti-Flicker Mode	<p>The frequency of the Endpoint anti-flicker mode have to stay with the frequency of the local alternating current</p> <ul style="list-style-type: none"> <li>● “50HZ” : China’s alternating current frequency.</li> </ul>	<p>The Default Value: 50HZ</p>

	<ul style="list-style-type: none"> <li>● “60HZ” : The USA, Canada and other country alternating current frequency</li> </ul>	
Other setting	<ul style="list-style-type: none"> <li>● “Enable inversion”: Enable this function, image will flip horizontal</li> <li>● “Enable the mirror”: Enable this function, image will flip horizontal</li> </ul>	The Default Value: Enable inversion: Disable Enable the mirror: Disable


**Step 3** Select “Save”

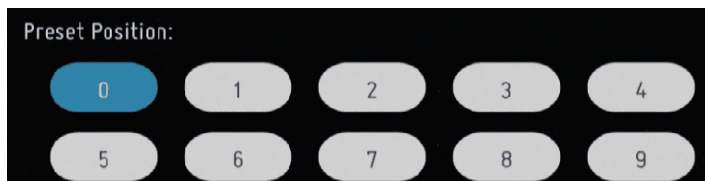
----End


#### 5.4.2. Setting a Camera Preset

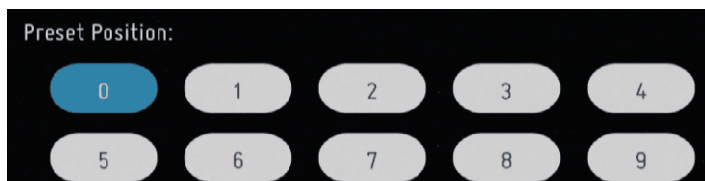
Camera presets are camera positions you set and save ahead of time. You can configure remote camera presets before and during conferences.

##### Saving a Camera Preset:

**Step 1** Press the remote control button , enter the page “adding a preset”




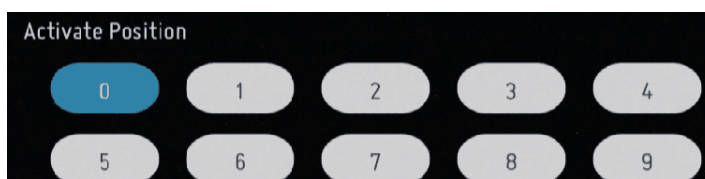
**Step 2** Choose the preset with “not set”, press remote control button , the preset is saved, as shown as below.



----End

##### Calling a Camera Preset:

**Step 1** Press the remote control button , enter the page “calling a preset”





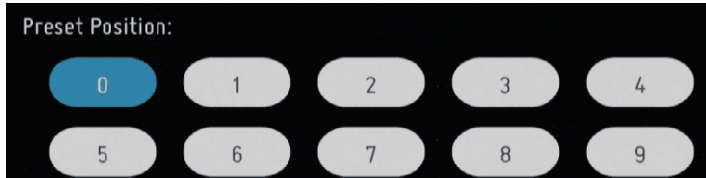
**Step 2** Choose one preset which was saved before, press remote control button

, the camera operation to the specified location.

----End

### 5.4.3. Clearing a Camera Preset

**Step 1** Press the remote control button  , enter the page “removing a preset”



**Step 2** Choose one preset which was saved before, press remote control button

, Removing the preset which was saved before.

----End

## 6. System Settings

### 6.1. Setting the System time

You must correctly set the system time of the endpoint for services to run properly.

#### Procedure

**Step 1** Choose "System Settings>Network>Network Setting"

**Step 2** Click the **Time and Time Zone** tab and set the parameters listed in [Table 6-1](#).

**Table 6-1** Time and Time Zone parameters

Parameters	Description	Setting
Adjust time and time zone automatically	Obtain automatically the time from Network when it's start	The Default Value : "enable".
Setting Time	Setting time manually	The Default Value : "1970-1-1"
Setting Date	Setting date manually	The Default Value : "disable".
NTP server	Specifies whether to automatically synchronizes system time with a Network Time Protocol (NTP) server <b>NOTE</b> If you set this parameter to Enable NTP, you must also set <b>NTP server address</b> .	The Default Value : "enable".
Time zone	Specifies the time difference between the local time and the Greenwich Mean Time (GMT).	The Default Value : "GMT+00.00".
Use 24 hour format	display 12 hours format when it's disable Display 24 hours format when it's enable	The Default Value: "Disable"
Date format	Display the date format	The Default Value : "Year-Month-Day".

### 6.2. Setting the System language

You can select the language as your need.

#### Procedure

**Step 1** Click "Setting >Language "

**Step 2** Enter " Language and input" page ,setting the language as you need.

**Note:**

”English “and “Chinese” are available for now.

### 6.3. Specifying Network Settings

The endpoint can communicate with other devices properly only after network settings are.

#### 6.3.1. Setting IP parameters

To use the endpoint on an IP network to implement video communication, correctly set IP parameters, which include DNS server address, network interface mode, and gateway address.

**Procedure**

**Step 1** Select “Setting >Network>Network Setting >Ethernet Configuration”

**Step 2** Configuration IP parameters listed in [Table 6-2](#)

**Table 6-2** IP parameters

Parameters	Description	Setting
Connection type	Specifies the mode in which the endpoint obtains an IP address. I <b>Static IP</b> : The network administrator assigns an IP address to the endpoint. If you select this option, you must also set <b>Local IP address</b> , <b>Subnet mask</b> , and <b>Gateway address</b> . I <b>Dynamic IP</b> : When a DHCP server is available on the network, the endpoint automatically obtains an IP address using the Dynamic Host Configuration Protocol (DHCP).	The Default Value : “Static IP”
Local IP address	Specifies the endpoint IP address.	The Default Value : 192.168.1.2
Subnet mask	Specifies the endpoint IP address.	The Default Value : 255.255.255.0
DNS Address	Specifies the IP address of the active Domain Name System (DNS) server. After you set this parameter, domain names can be used as the addresses of network gatekeeper (GK) and Session Initiation Protocol (SIP) servers. The DNS server will translate the domain names into the IP addresses of the GK and SIP servers.	The Default Value : 192.168.1.1

Default Gateway	Specifies the gateway address that corresponds to the endpoint IP address.	The Default Value : 192.168.1.1
-----------------	--	---------------------------------

**Step 3** Select “Save ”

----End

### 6.3.2. Setting H.323 Account

#### Procedure

**Step 1** Choose “Setting >Account>H.323 account “ and click the H.323 setting tab.

**Step 2** Configuration GK address, Registered name, endpoint number and password.

The parameters listed in [Table 6-3](#).

**Table 6-3** H.323 Parameters

Parameters	Description	Setting
Enable GK	Specifies whether your endpoint uses a GK. <b>I Enable:</b> When your endpoint starts, it registers with the specified GK. An endpoint that registers with a GK can place calls to remote sites using their site numbers if the remote sites also register with GKs. <b>I Disable:</b> Your endpoint does not register with the GK. To call another endpoint through H.323, your endpoint can only use the called endpoint's IP address.	The Default Value: disable
GK Address	Specifies the IP address or domain name of the server where the desired GK is installed. If you set this parameter to the domain name, you must enable the DNS server and set correct mapping information on the server.	No Default, Please contact the server administrator to obtain.
Resign name	Specifies the name by which a GK identifies your endpoint after your endpoint registers with the GK.	No Default, Please contact the server administrator to obtain.
Endpoint number	Specifies the site number for your endpoint. If your endpoint registers with a GK, endpoints that also register with GKs can dial this site number to call your endpoint.	No Default, Please contact the server administrator to obtain.

Password	Specifies the password your endpoint uses to register with a GK. The GK uses this password to authenticate your endpoint. For successful GK authentication, the password defined on your endpoint must be consistent with the password predefined on the GK.	No Default, Please contact the server administrator to obtain.
----------	--	--

**Step 3** Select “Save “

---End

### 6.3.3. Setting SIP account

To prepare your endpoint for video communication using Session Initiation Protocol (SIP), set and SIP parameters, such as whether to register the endpoint with a SIP server

#### Procedure

**Step 1** Choose “Setting >Account>SIP account “ and click the SIP setting tab.

**Step 2** Configuration SIP parameters listed in Table 6-4.

**Table 6-4** SIP Parameters

Parameters	Description	Setting
Enable SIP	<p>Specifies whether your endpoint registers with a SIP server.</p> <ul style="list-style-type: none"> <li>●<b>Enable</b>: An endpoint that registers with a SIP server can place calls to remote sites using their IP addresses or site numbers if the remote sites also register with SIP servers.</li> <li>●<b>Disable</b>: Your endpoint does not register with the SIP server. To call another endpoint through SIP, your endpoint can only use the called endpoint's IP address.</li> </ul> <p><b>NOTE</b> If you set this parameter to <b>Enable</b>, you must also set <b>Server address</b>, <b>Conference service number</b>, <b>Site number</b>, <b>User name</b>, and <b>Password</b>.</p>	The Default Value: “Disable”
Register Server	<p>Specifies the IP address or domain name of the SIP server with which you want your endpoint to register.</p> <p>If you set this parameter to the SIP server domain name, enable the domain name server (DNS). If the DNS is not enabled,</p>	No Default, Please contact the SIP server administrator to obtain.

	<b>Enable Proxy server.</b>	
Proxy server	Select this parameter when the network environment requires the proxy server or when <b>Server address</b> is set to the SIP server domain name but the configured DNS server fails to resolve this domain name or the DNS server is not configured.	No Default, Please contact the SIP server administrator to obtain.
User Name	Specifies the user name for register	No Default, Please contact the SIP server administrator to obtain.
Authentication user name	Specifies the user name for authentication registration.	No Default, Please contact the SIP server administrator to obtain.
Authentication domain	Applied to identify the sip server corresponding to the domain of the domain name.	No Default, Please contact the SIP server administrator to obtain.
Password	Specifies the password your endpoint uses to register with a SIP. The SIP uses this password to authenticate your endpoint. For successful SIP authentication, the password defined on your endpoint must be consistent with the password predefined on the SIP.	No Default, Please contact the SIP server administrator to obtain.

**Step 3** Select “Save “.

---End

#### 6.3.4. Setting Firewall Parameters

Correct firewall settings ensure the security of the video conferences held using your endpoint.

With Network Address Translation (NAT) technology, a device on a local area network (LAN) is allocated a dedicated internal IP address and uses an external IP address to communicate with external devices. If your LAN uses NAT technology, set the IP address of the NAT wide area network (WAN) on your endpoint.

##### Procedure

**Step 1** Select “Setting >Network >Firewall”

**Step 2** Set the firewall parameters listed in [Table 6-5](#)

**Table 6-5** Firewall parameters

Parameters	Description	Setting
TCP port range	Specifies the port your site uses to receive TCP packets during communication with remote sites.	Value Range: 30000~30010
UDP port range	Specifies the port your site uses to receive UDP packets during communication with remote sites.	Value Range: 30000~30010
NAT alive time	In order to prevent the network device from resetting the TCP connection when there is no data packet for a long time, the terminal needs to send the keep alive message periodically when there is no data transmission	Value Range: 20 second
NAT Traversal method	<ul style="list-style-type: none"> <li>● H.460 and Static NAT are available, You can according to your requirements to choose it, also you can choose unable NAT traversal.</li> <li>● H.460 Suitable for H.323 Protocol of NAT which one of the methods to traversal. If you set this parameter to <b>Enable</b> and your endpoint is recognized as a private network endpoint, H.460 will be used for traversal between public and private networks</li> <li>● Static NAT One of traversal method for NAT. Specifies whether NAT is enabled for traversal between public and private networks. An endpoint installed on a private network is considered as a public network endpoint after NAT is enabled on the endpoint. Choose static NAT, the public network need to fill public IP address of NAT device.</li> </ul>	Value Range: "No Default"

	<ul style="list-style-type: none"> <li>● No</li> </ul> <p>You can choose “No” to disable “static NAT” and “H460” ,If the NAT device enable “H.323 and SIP ,You can choose this item.</p>	
--	--	--

**Step 3** Select “Save“

----End

When the traversal method is “static NAT”, it need to set up the router at the same time.

**Procedure**

**Step 1** Disable ALG function at router

**Step 2** Set to expose the terminal to the network in the router, and the range of endpoint TCP and UDP map out on the router.

**Step 3** Choose “Setting>Network>Firewall>NAT Traversal method >Static NAT ,then enter the router WAN IP address.

**Step 3** Select “Save “

----End

**Note :**

Future setting information please refer to the router Manual or consult your network administrator.

### 6.4. Security Configuration

To improve communication security, you can encrypt conferences, set or change conference passwords, and disable remote access to the endpoint.

**Procedure**

**Step 1** Select “Setting >Security”

**Step 2** Setting Security Parameters listed in [Table 6-6](#).

**Table 6-6** Security Parameters

Parameters	Description	Setting
System Security	<ul style="list-style-type: none"> <li>● enable HTTP service</li> </ul> <p>You can visit the endpoint web interface or API without encryption after enable HTTP service</p> <ul style="list-style-type: none"> <li>● Enable HTTP service</li> </ul> <p>You can visit the endpoint web interface or API with encryption after enable HTTP service</p> <ul style="list-style-type: none"> <li>● Enable SSH service</li> </ul>	<p>The Default Value</p> <p>Enable HTTP Service</p> <p>Enable HTTPS Service</p> <p>Enable SSH Service</p>



	<p>A set of standards and an associated network protocol that allows establishing a secure channel between a local and a remote computer. A feature to protect information and provide powerful authentication function for a network when a user logs in to the network through an insecure network. It prevents IP addresses from being deceived and simple passwords from being captured. You can remote login security terminal after enable HTTPS service</p> <ul style="list-style-type: none"> <li>●HTTP Visit password Need enter password while you visit endpoint through HTTP or HTTPS, The user name is admin.</li> <li>●SSH visit password Need enter password while you visit endpoint through SSH, The user name is admin.</li> </ul>	<p>HTTPS Password: admin SSH Password: admin</p>
H323 Media Security	<ul style="list-style-type: none"> <li>● H235.6 AES-128</li> <li>● Plain text (unencrypted)</li> <li>● SRT: AES-128 &amp; SHA1-32</li> <li>● SRT: AES-128 &amp; SHA1-80</li> </ul>	<p>The Default Value: Enable H235.6 AES-128 Enable the plaintext (unencrypted)</p>
SIP Media Security	<ul style="list-style-type: none"> <li>● SRT: AES-128 &amp; SHA1-32</li> <li>● SRT: AES-128 &amp; SHA1-80</li> <li>● Plain text (unencrypted)</li> </ul>	<p>The Default Value: All enable</p>

**Step 3** Select "Save "

----End

## 6.5. Specifying Conference Settings

Your endpoint is ready for videoconferencing with its default conference settings, but you can customize the conference settings based on the site requirements.

### 6.5.1. Setting Audio Protocols

Your endpoint supports multiple audio and video protocols, Select the protocols required for call purposes.

Using the audio or video protocols that you select, your endpoint negotiates the audio or video capability with a remote endpoint to set up a call

#### Procedure

**Step 1** "Setting>Audio>Audio capability."

**Step 2** Select audio protocols according to your requirements.

----End

#### Note:

Select at least one audio protocol and one video protocol so that you can use your endpoint to place audio calls or video calls.

The endpoint supports G.722.1C, AAC-LCD, SILK, G.722, G.711  $\mu$ , G.711 A, G.726, G.722, G.722.1\*, G.722.1C\* protocols and so on at present.

Both of side are supports G722.1C, the default select is G722.1C as the best audio capability .

### 6.5.2. Setting Video protocol

Your endpoint supports multiple video protocols ,select the protocols required for call supposes.

Using the audio or video protocols that you select, your endpoint negotiates the video capability with a remote endpoint to set up a call

#### Procedure

**Step 1** "Setting>Audio>Video capability."

**Step 2** Select video protocols according to your requirements.

----End

#### Note:

Select at least one video protocol so that you can use your endpoint to place a video calls.

The endpoint supports H.264 HP, H.264 ...etc. video protocols at present.

Both of side are supports H.264 HP, the default select is H.264 HP as the best video capability.

### 6.5.3. Setting General Parameters

You can set the modes in which the endpoint places and answer calls, For example, you can set the endpoint to automatically answer calls ,manually answer calls.

#### Procedure

**Step 1** "Setting>Calling"

**Step 2** Set the general conference parameters listed in [Table 6-7](#)

**Table 6-7** general conference parameters

Parameters	Description	Setting
Answer Mode	<p>Specifies how your endpoint handles incoming calls.</p> <ul style="list-style-type: none"> <li>● <b>Manual:</b> Your endpoint prompts you to handle a call when the call comes in.</li> <li>● <b>Answer call automatically:</b> Your endpoint automatically answers incoming calls when not being used in a conference.</li> </ul>	The default value: enable
Default call bandwidth	<p>Specifies the default data transmission rate for your endpoint.</p> <p><b>NOTE</b> If this parameter is set incorrectly, the video quality will be affected or the call might even fail to be set up.</p>	The default value : “1920 kbps”
Send bandwidth	Up-link bandwidth	The default value : “8000 kbps”
Receive bandwidth	Down-link bandwidth	The default value : “8000 kbps”
Main Video resolution	<p>Specifies the video format. The available options vary depending on your settings of <b>Video protocol</b>.</p> <ul style="list-style-type: none"> <li>● <b>Sharp:</b> Your endpoint uses a high video resolution to ensure clear video.</li> <li>● <b>Smooth:</b> Your endpoint uses a high frame rate to ensure smooth video.</li> </ul>	The default value: “Smooth”
Presentation resolution	<p>Specifies the presentation format. The available options vary depending on your settings of <b>Presentation protocol</b>.</p> <ul style="list-style-type: none"> <li>● <b>Smooth:</b> Your endpoint uses a high frame rate to ensure smooth video.</li> <li>● <b>Sharp:</b> Your endpoint uses a high video resolution to ensure clear video.</li> </ul>	The default value: “Sharp”

**Step 3** select “Save”

----End

## 7. Conference diagnostic information

After the conferencing, you can enter the diagnostic information page, real-time to understand the quality of the meeting.

### Prerequisite

Only when the meeting is started, can the meeting parameter be displayed in real time.

### Procedure


Step 1 select the "diagnosis" and enter the diagnostic page. Parameter description list in table 7-1

Table 7-1 conference diagnostic parameters

parameter	Descriptions
Call Bandwidth	Actual call bandwidth after negotiation
Audio protocol	Actual audio protocol after negotiation
Audio rate	Bandwidth allocated to audio
Main video bandwidth	Bandwidth allocated to video
Main video rate	Real time rate of main video. The value can be changed in real time.
Main video protocol	Main video protocol after negotiation
Main video resolution	Main video at the resolution of the current session
The main video frame rate agreement	Display the main video frames per second. This value can be changed dynamically according to the current network environment.
Auxiliary video bandwidth	Bandwidth allocated to auxiliary video.
Auxiliary video rate	Real time rate of auxiliary video. The value can be changed in real time.
Auxiliary video protocol	The actual auxiliary video protocol after capability negotiation.
Auxiliary video resolution	Auxiliary video at the resolution of the current session
The auxiliary video frame rate	The auxiliary display video frames per second. This value can be changed dynamically according to the current network environment.
Shake	The degree of change of the network delay.
Packet loss rate	Network congestion can cause packet loss, the higher the degree of congestion, the greater the packet loss rate.

----End

**Note:**

You can also press the Key  on the remote control to access the Diagnostics page

## 8. Upgrading

Your endpoint supports two software upgrade methods; U disk upgrade and HTTP upgrade

- U disk upgrade

The endpoint automatically detects the last version of the U disk, then differential upgrade

- HTTP upgrade

The endpoint obtains the upgrade file from specified server and automatically upgrades.

### U disk upgrade

You only need to copy the software version to the U disk, then insert to the endpoint USB interface, follow the prompts to complete the upgrade, please note that you must use the first U disk partition, and the partition format must be FAT32, if there is hidden partition, you need to remove the hidden partition, please use the windows disk management tool to see if there is a hidden partition.

#### Procedure

**Step 1** Enter “**Setting>Upgrading**” click enable upgrading

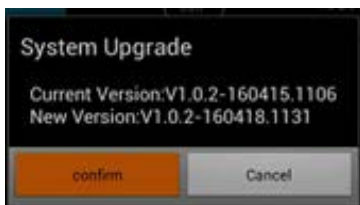
**Step 2** Choose “through U disk to upgrade” at “select upgrade mode”

**Step 3** Choose “save”

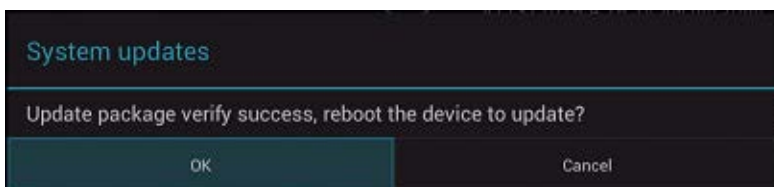
**Step 4** Please make update files under U disk directory

**Step 5** insert U disk in to the back of USB interface

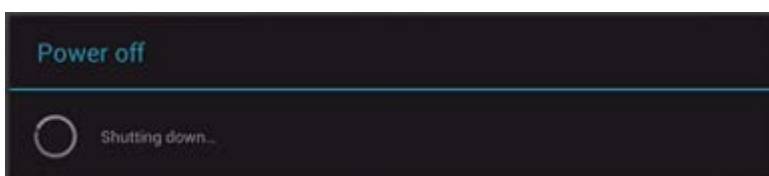
**Step 6** The GUI interface will automatically pop up “ the current version: XXXX new version: XXXX” Select “confirm”



**Step 7** The GUI will pop up “the system upgrade package is finished, whether to restart to install the update?” select “confirm”



**Step 8** The endpoint will close-down automatically and restart, enter the upgrade.



**Step 9** The upgrade finished

**----End**

**Note :**

After select “confirm” at step 5 ,If the endpoint always stay at the interface, does not restart automatically, you need restart the terminal manually.( For the system version is relatively old version).

## 9. Troubleshooting

This chapter describes how to diagnose and troubleshoot endpoint faults.

### Video

**Table 9-2** lists the troubleshooting methods for video problems.

**Table 9-2** Methods for troubleshooting video problems

Problem	Possible Cause	Solution
While the endpoint is powered on and not in a conference, the display device is black	The display device is powered off.	Power on the display device.
	The video cable connection is not secure.	secure the video cable between the endpoint and display device.
	Some device don't support 1080p60 output format	Enter" Setting>Video >video output "Menu, Switch the video output format.
While the endpoint is powered on and in a conference, the local point send sub-stream, the display device is black	The DVI IN interface did not connect to the SUB-Stream source,	Connect to the computer's VGA interface via VGA to DVI cable
	The DVI IN interface connect to the sub-stream source, but the video cable connection is not secure.	Secure the video cable between the endpoint and display device.
The endpoint local video is shock.	According to the frequency of the alternating current to adjust the corresponding local resistance value.	According to the frequency of the alternating current to adjust the corresponding local resistance value.



# 10. Technical Specifications

## 10.1. Physical Specifications

Item	Specifications
<b>Electricity supply requirements</b>	
Operating voltage and frequency	100V AC~240V AC, 50Hz~60Hz
Maximum operating current	1.6A
Maximum power consumption	36W
<b>Physical specifications</b>	
Codec dimensions (H x W x D)	239.4mm×148.4mm×157mm
Weight	1.75kg
<b>Built-in camera features</b>	
Imaging component	200W Effective Pixel 1/3 inch CMOS
Resolution	1920×1080 (1080p 60fps) , 1280×720 (720p)
Lens	<ul style="list-style-type: none"> <li>● Zoom: 72.5°wide-angle lens, 12X optical zoom</li> <li>● Focal length: 12x, f3.5mm ~ 42.3mm, F1.8 ~ F2.8</li> <li>● Maximum horizontal angle: 72.5°</li> <li>● Panning angle: ±170°</li> <li>● tilting angle: -30°~+90°</li> <li>● Automatic white balance (AWB)、automatic exposure (AE)、and autofocus (AF)</li> <li>● Support for inverted installation</li> </ul>
Exposure mode	Automatic and manual
White balance	Automatic, manual, indoor and outdoor
Backlight compensation	Support

## 10.2. Performance Parameters

Item	Specifications
Call bandwidth	64kbit/s~8Mbit/s
Video resolution	<ul style="list-style-type: none"> <li>● 1080p 30fps with a minimum bandwidth of1024 kbit/s</li> <li>● 720p 30fps with a minimum bandwidth of512 kbit/s</li> <li>● 576p 30fps with a minimum bandwidth of384 kbit/s</li> </ul>

	<ul style="list-style-type: none"> <li>● 488p 30fps with a minimum bandwidth of 256 kbit/s。</li> </ul>
Presentation resolution	<ul style="list-style-type: none"> <li>● Input: 1920×1200、1080p (1920×1080)、1600×1200、1680×1050、1600×900、XGA+ (1400×1050)、1440×900、WXGA (1366×768)、1360×768、SXGA (1280×1024)、1280×960、WXGA (1280×800)、WXGA (1280×768)、1280×600、720p (1280×720)、1152×864、XGA (1024×768)、SVGA (800×600)、VGA (640×480)</li> <li>● Output: 1920×1080、1280×1024、1280×720、1024×768</li> <li>● Coding/Decoding resolution: 1920×1080、1280×1024、1280×720、1024×768</li> </ul>
Audio features	AEC, ANS, AGC, and lip synchronization

### 10.3. Ports and Protocols
















Port	Quantity	Remarks
Video input	<ul style="list-style-type: none"> <li>● 1×VGA</li> <li>● 1× Built-in camera</li> </ul>	Users can select one or two mode for video input.
Video output	<ul style="list-style-type: none"> <li>● 2×HDMI</li> </ul>	HDMI OUT 1 Normally use to output main video; HDMI OUT 2 Normally use to output Sub video
MIC port	<ul style="list-style-type: none"> <li>● 1×MIC input port</li> </ul>	This port can be connected to microphone
Audio input	<ul style="list-style-type: none"> <li>● 1×LINE IN</li> </ul>	User for audio input
Audio output	<ul style="list-style-type: none"> <li>● 1×LINE OUT</li> <li>● 1×HDMI</li> </ul>	User for audio output
USB port	<ul style="list-style-type: none"> <li>● 2×USB 2.0</li> </ul>	This port can be connected to mouse or U disk and USB device
Network port	<ul style="list-style-type: none"> <li>● 10/100Base-T1×RJ45</li> </ul>	Connect to network cables
Infrared remote control port	<ul style="list-style-type: none"> <li>● 1×Infrared signal reception</li> </ul>	Receive infrared signal from remote control






### 10.4. Standards Compliance

Item	Specifications
Video encoding and decoding protocols	H.264 HP、H.264 BP

Video encoding and decoding protocols	AAC-LD、G.711A、G.711U、G.722、G.722.1、G.722.1C、iSAC  IMA ADPCM、SILK
Multimedia frame protocols	ITU-T H.323、IETF SIP
Dual-stream standard	ITU-T H.239
Network transmission protocols	TCP/IP、RTP、RTCP、DHCP、SNMP、HTTP、SSH、HTTPS、SNTP
Other communications protocols	H.225、H.235、H.241、H.245、H.281、H.350、H.460、T.140
IP protocol	Support IPv4
Protocol for signaling and media stream encryption	H.235、TLS and RTP

# A Shortcut description of the Remote control

Shortcut key	instructions
CAMERA 	Brings up a menu of camera parameters
	Save a preset
	Call a preset
	Clear a preset
	When GUI is hidden, the arrows show is Turns the camera upward When GUI is displayed, the arrows show is turns the GUI menu focus upward
	When GUI is hidden, the arrows show is turns the camera rightward When GUI is displayed, the arrows show is turns the GUI menu focus rightward
	When GUI is hidden, the arrows show is Turns the camera downward When GUI is displayed, the arrows show is turns the GUI menu focus downward
	When GUI is hidden, the arrows show is Turns the camera leftward When GUI is displayed, the arrows show is turns the GUI menu focus leftward
变焦 	Enlarges and Shrinks the image taken by a camera.
	Switch control model
	Send dual-stream
CONTENT 	Setting the Combined Picture
LAYOUT 	Setting the Combined Picture
	Brings up address book
MUTE 	Mute the microphone

	Adjust volume
	Initiating a conference
	End a conference
	Call a conference diagnostic message
	Confirm

# B Glossary

## A

**AAC-LD** Advanced Audio Coding-Low Delay;

**AC** Alternating Current;

**AEC** Acoustic Echo Cancellation;

**AES** Advanced Encryption Standard;

## C

**CA** Certificate Authority;

**CIF** Common Intermediate Format;

**CRC** Cyclic Redundancy Check;

## D

**DHCP** Dynamic Host Configuration Protocol;

**DNS** Domain Name Server;

**DNS** Domain name server

**DVI** Digital Visual Interface;

## F

### Firewall

A combination of a series of components set between different networks or network security domains. By monitoring, limiting, and changing the data traffic across the firewall, it masks the interior information, structure and running state of the network as much as possible to protect the network security.

## G

### G.711

Audio codec standard (A-law or U-law) that uses pulse code modulation (PCM). Its data rate is 64 kbit/s.

### G.722

Audio codec standard that uses adaptive differential pulse-code modulation (ADPCM). Its data rate is 48 kbit/s, 56 kbit/s, or 64 kbit/s.

**GMT** Greenwich Mean Time;

**GUI** Graphical User Interface;

## H

**H.239** ITU-T A standard recommended by ITU-T. It enables a video conference to

have simultaneous transmission of both video and data content (for example, computer desktop).

#### **H.264**

Compared with H.263, H.264 can provide the same-quality video at half of the bit rate, with strong error resilience characteristics.

**H.323** is a recommendation from the ITU Telecommunication Standardization Sector (ITU-T) that defines the protocols to provide audio-visual communication sessions on any packet network.

**HD** High Definition;

**HDMI** High Definition Multimedia Interface;

**HTTP** Hypertext Transfer Protocol;

**HTTPS** Hypertext Transfer Protocol Secure;

## **I**

**IP** Internet Protocol;

**IP address** "internet protocol address", is a unique identifying number given to every single computer on the Internet. Like a car license plate, an IP address is a special serial number used for identification.

**IPv4** Internet Protocol version 4; The current version of the Internet Protocol (IP). IPv4 utilizes a 32bit address which is assigned to hosts. An address belongs to one of five classes (A, B, C, D, or E) and is written as 4 octets separated by periods and may range from 0.0.0.0 through to 255.255.255.255. Each IPv4 address consists of a network number, an optional subnetwork number, and a host number. The network and subnetwork numbers together are used for routing, and the host number is used to address an individual host within the network or subnetwork.

**ITU-T** International Telecommunication Union-Telecommunication standardization sector;

## **L**

**LAN** Local Area Network; A network formed by the computers and workstations within the coverage of a few square kilometers or within a single building, featuring high speed and low error rate. Current LANs are generally based on switched Ethernet or Wi-Fi technology and run at 1,000 Mbit/s (that is, 1 Gbit/s).

## **N**

**NAT** Network Address Translation; An IETF standard that allows an organization to present itself to the Internet with far fewer IP addresses than there are nodes on its internal network. The NAT technology, which is implemented in a router, firewall or PC, converts private IP addresses (such as in the 192.168.0.0 range) of the machine on the internal private network to one or more public IP addresses for the Internet. It changes the packet headers to the new address and keeps track of them via internal tables that it builds. When packets come back from the Internet, NAT uses the tables to perform the reverse conversion to the IP address of the client machine.

**NTP** Network Time Protocol;

## **Q**

**QoS** Quality of Service; A commonly-used performance indicator of a telecommunication system or channel. Depending on the specific system and service, it may relate to jitter, delay, packet loss ratio, bit error ratio, and signal-to-noise ratio. It functions to measure the quality of the transmission system and the effectiveness of the services, as well as the capability of a service provider to meet the demands of users.

## **R**

**RAS** Registration Admission and Status; A signaling set used for the connection between an H.323 gatekeeper and endpoints, and endpoint management

**RTCP** Real-time Transport Control Protocol; A protocol used to monitor data delivery. RTCP enables the receiver to detect if there is any packet loss and to compensate for any delay jitter.

**RTP** Real-time Transport Protocol;

## **S**

**SRTP** Secure Real-time Transport Protocol; A real time transport protocol with enhanced security and encryption mechanism-based RTP.

**SSH** Secure SHell; A set of standards and an associated network protocol that allows establishing a secure channel between a local and a remote computer. A feature to protect information and provide powerful authentication function for a network when a user logs in to the network through an insecure network. It prevents IP addresses from being deceived and simple passwords from being captured.

**SSL** Secure Sockets Layer; A security protocol that works at a socket level. This layer exists between the TCP layer and the application layer to encrypt/decode data and authenticate concerned entities.

## **T**

**TCP** Transmission Control Protocol; The protocol within TCP/IP that governs the breakup of data messages into packets to be sent using Internet Protocol (IP), and the reassembly and verification of the complete messages from packets received by IP. A connection-oriented, reliable protocol (reliable in the sense of ensuring error

**TCP/IP** Transmission Control Protocol/Internet Protocol;

## **U**

**UDP** User Datagram Protocol; A TCP/IP standard protocol that allows an application program on one device to send a datagram to an application program on another. UDP uses IP to deliver datagrams. UDP provides application programs with the unreliable connectionless packet delivery service. That is, UDP messages may be lost, duplicated, delayed, or delivered out of order. The destination device does not actively confirm whether the correct data packet is received.

**URL** Uniform Resource Locator; An address that uniquely identifies a location on



the Internet. A URL is usually preceded by http://, as in http://www.microsoft.com. A URL can contain more details, such as the name of a hypertext page, often with the file name extension .html or .htm.

**USB** Universal Serial Bus; A serial bus standard to interface devices. It was designed for computers such as PCs and the Apple Macintosh, but its popularity has prompted it to also become commonplace on video game consoles and PDAs.

**W**

**Gateway** A device that connects two network segments using different protocols. It is used to translate the data in the two network segments.