



# Reach Bee7

## User Manual

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Shenzhen Reach TECH Co., Ltd provides full technical supports for the customers. If you have any inquiries, please contact the local Reach office or directly contact the headquarters of the company.

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### **Note**

This user manual is compiled to ensure easy installation and configuration of the product. Please read this manual carefully before using the product, so that you can make best use of all its functions.

This manual is subject to update from time to time without prior notice. If you come across any problem that cannot be solved according to the manual, please contact our company for solutions. Thank you.

REACH Bee7

User Manual 1

# Contents

# 1. Overview

## 1.1 Product Functions

Reach Bee 7 is a high-performance multimedia meeting recording and streaming produce latest developed by Shenzhen Reach IT Co., Ltd. It integrates functions of course recording, course management, and course release. Bee 7 can record the entire teaching process and course content, including the PPT courseware and the teacher's and students' video signals (picture and sound). Figure 1-1 shows the appearance of a Bee 7 product.



Figure 1-1

The Bee 7 can be connected to and work together with a Web manage interface, a management platform (Bee Keeper), a touch panel, and a media center. Figure 1-2 shows the networking diagram of a Reach Bee 7 product.

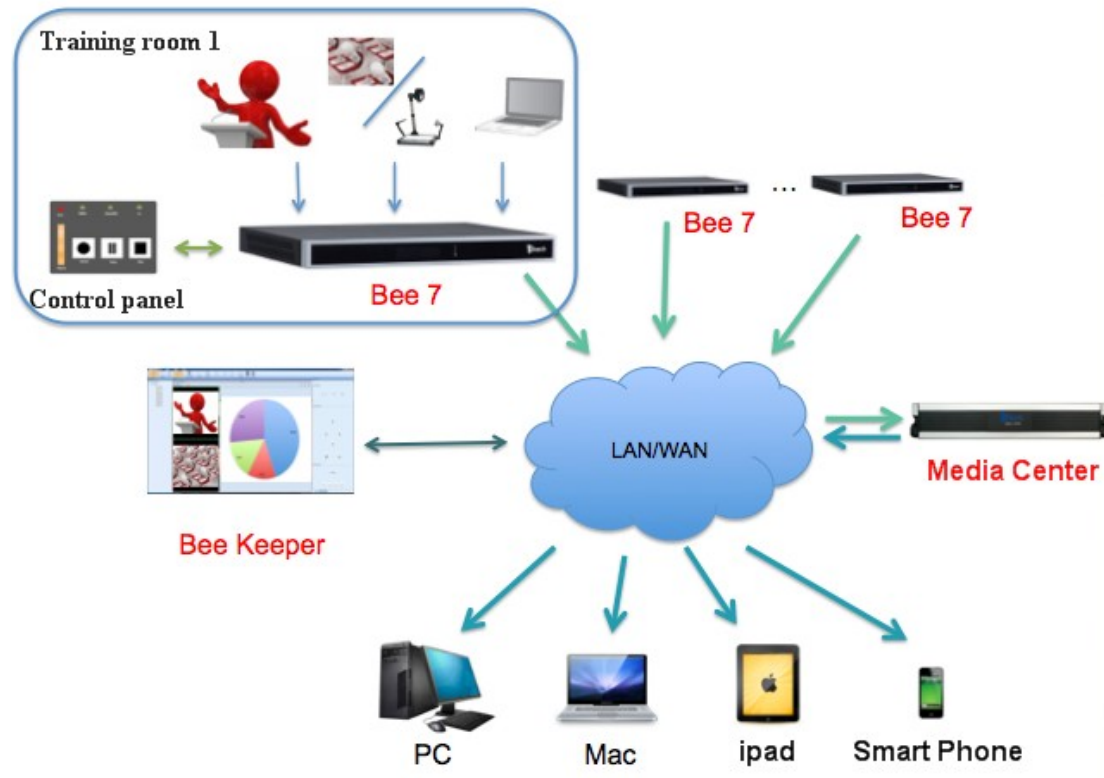


Figure 1-2

Bee 7, media center, and management platform are in the same network.

The touch panel and Bee 7 are connected through serial ports for communications.

Users use the touch panel to send recording control commands to Bee 7.

Bee 7 encodes the collected source signals by high and low bit-rate streams, records the course, and uploads the recorded file to the media center for live streaming through an IP network. The File Transfer Protocol (FTP) is used to upload files to the media center. The file uploaded to the media center will be deleted automatically on the local PC.

When users log in to the Web page and play recording course files, the media center will automatically identify users (PC or mobile terminal). PC users can get access to the PPT courseware and both the teacher's and students' video images; but mobile terminal users only the PPT courseware and the teacher's video image.

Through the IP network, the management platform can be used to manage the media center and Bee 7, including abnormal alarm, monitoring, fine tuning, remote control, and upgrade.

**Functions provided by Bee 7 include:**

- Collecting the electronic whiteboard information and the teacher's and students' video and audio signals. The video signals can be standard definition (SD) or high definition (HD) 720p, 1080i and 1080p signals. The maximum resolution of Video Graphics Array (VGA) signals is 1920 x 1080, with the maximum frame rate of channel 1 and channel 2 signals being 30 fps.
- Sending the collected signals to the media center for user query or to the management platform for monitoring and remote control, and automatically uploading the course videos to the media center for users to view, edit, or release it to a third-party platform.

**Functions provided by the Web management interface include:**

- Controlling and managing Bee 7 remotely, and setting Bee 7 system parameters.

**Functions provided by the touch panel include:**

- Connecting and controlling Bee 7 through the serial port. The touch panel can display the sound volume of the source signal, check the status of Bee 7, and enable Bee 7 to start, pause, or stop recording through different buttons.

**Functions provided by the management platform include:**

- Connecting the media center and Bee 7 through the IP network to monitor the status of Bee 7, remotely control cameras in the classroom, and fine-tune VGA images.
- Collecting warning and log messages from the media center and Bee 7.

**Functions provided by the media center include:**

- Making interaction with users and connecting Bee 7 through the IP network to carry out operations such as parameter setting and recording management.

- Allowing users to log in to the Web page to view the live image of the classroom or view the recorded course videos on demand according to the permission settings. The administrator can set Bee 7 parameters, assign user permissions, configure the curriculum, and edit and release course videos.

## 1.2 Product Advantages

- **Convenient usage:** Bee 7 is compatible with the user system and Learning Management System (LMS)/Content Management System (CMS) of the school in a seamless manner. With the support for various terminals (such as PC, MAC computer, tablet computer, and smart phone), Bee 7 enables students to access course resources at any time and any place, making the learning easier.
- **Simple operation:** Bee 7 can automatically start recording as scheduled (in the curriculum). No action is required on the part of the teacher, which reduces the interference in the teaching process.
- **Easy management and maintenance:** Bee 7 uses a specialized system management platform to manage and maintain all the video signal collecting devices in the campus in a centralized manner.

## 2. Bee 7 Operation Guide

### 2.1 Front Panel Button Description

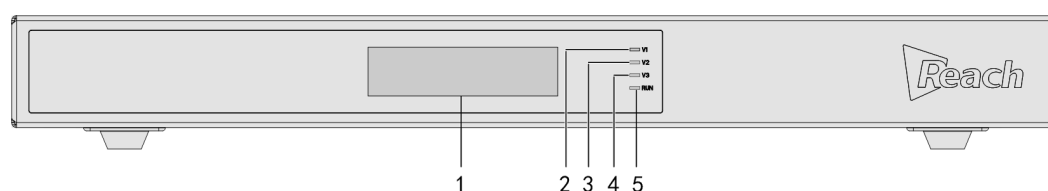


Figure 2-1

Table 2-1 Front panel button description

No.	Name	Description
1	LCD screen	Displays device information. For example, during the starting process of Bee 7, <b>Starting</b> is displayed on the screen. After the startup, information such as the system version, IP address, subnet mask, and network gateway is displayed on the LCD screen in scrolling mode.
2	V1	The indicator is on when signals are input from the DVI IN 1 interface at the rear panel; the indicator is off when no signal is input.
3	V2	The indicator is on when signals are input from the DVI IN 2 interface at the rear panel; the indicator is off when no signal is input.
4	V3	The indicator is on when signals are input from the DVI IN 3 interface at the rear panel; the indicator is off when no signal is input.
5	RUN	Indicator 7 specifies the operation status of Bee 7. When Bee 8 operates normally, indicator 6 blinks; when Bee 8 becomes faulty, indicator 6 goes off.

## 2.2 Rear Panel Ports Description

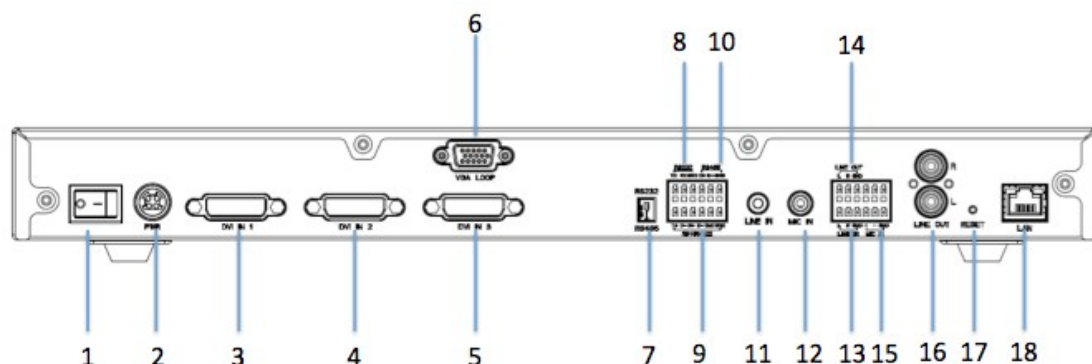




Figure 2-2

Table 2-2 Rear panel port description

No.	Name	Description
1	Power switch	Switches on or off the power supply of Bee 7.
2	PWR	Indicates a power interface, used to connect to the power adapter.
3	DVI IN 1	Indicates a video input interface, used to connect to a camera.
4	DVI IN 2	Indicates a video input interface, used to connect to a camera.
5	DVI IN 3	Indicates a VGA input interface, used to connect to a PC.
6	VGA LOOP	Indicates a loop output interface, used to loop out analog VGA signals input from the DVI IN 3 interface.
7	RS 232/RS 485	Indicates a switch to select the camera control interface.
8	RS 232	Indicates a camera control interface, used to connect to a camera.
9	RS 485/RS 422	Connects to a desktop control panel.
10	RS 485	Indicates a camera control interface, used to connect to a camera.
11	LINE IN	Inputs stereo signals.
12	MIC IN	Inputs unbalanced microphone signals.
13	LINE IN	Inputs stereo signals.
14	LINE OUT	Loops out audio signals input from the 3.5mm TRS interface (LINE IN 11 and 13).
15	MIC IN	Inputs balanced microphone signals.

No.	Name	Description
16	LINE OUT	Loops out audio signals input from two channels MIC IN interfaces (LINE OUT 12 and 15).
17	RESET	<p>Indicates a reset key. It can be used to enter the backup system and upgrade the master system in the situation where the master system does not work well.</p> <p>The system reset can be carried out when Bee 7 is powered on. You can press RESET for at least 10 seconds, and then release the key. After Bee 7 is restarted, enter the IP address displayed on the LCD screen to the IE browser and then log in to the Web page of Bee 7.</p> <p>Upgrade the system version in the <b>System Upgrade</b> page.</p>
18	LAN	Connects to the network.

## 3. Bee 7 Configuration

Bee 7 Web interface is used in conjunction with Bee 7. You can log in to the Web page to remotely set Bee 7 parameters.

### 3.1 Bee 7 Web Interface Login

Open the IE browser (IE8 or higher is required), enter the IP address of Bee 7 in the address bar, and press **Enter**. The Bee 7 Web login interface is displayed as shown in Figure 3-1.

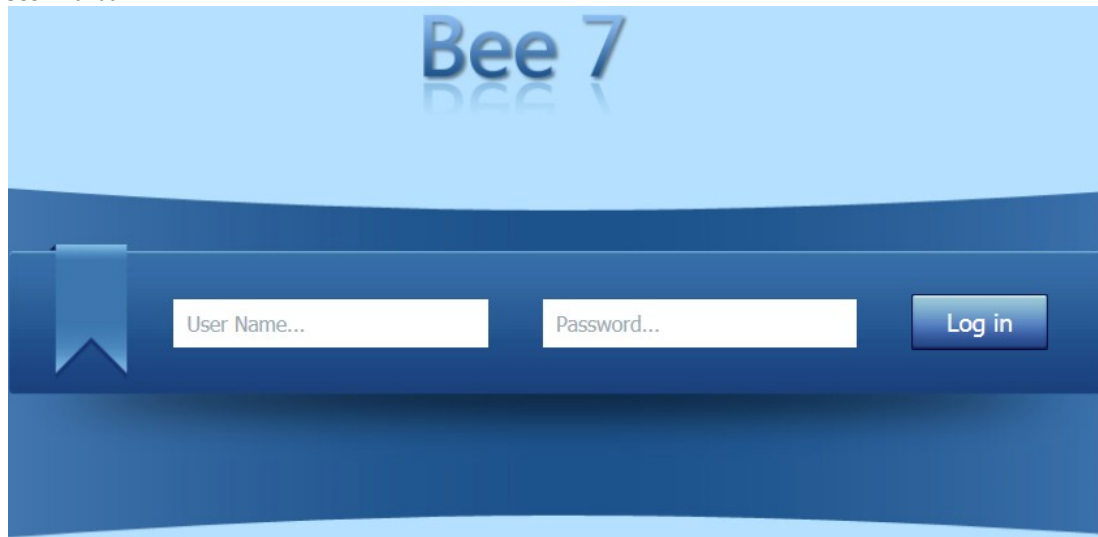


Figure 3-1

Enter the username and password (both of them are **admin** by default), and click **Log in**. The Bee 7 Web interface is displayed as shown in Figure 3-2. By default, the **System info** page is displayed, allowing you to check the series number, model, and version of Bee 7.



Figure 3-2

## 3.2 Parameter Setting

Click **Settings** to display the parameter setting page. By default, the **AV Setting** tab is displayed as shown in Figure 3-3. The **Settings** page consists of three tabs, namely, **Input Setting**, **Camera Control**, and **Title/Logo**.

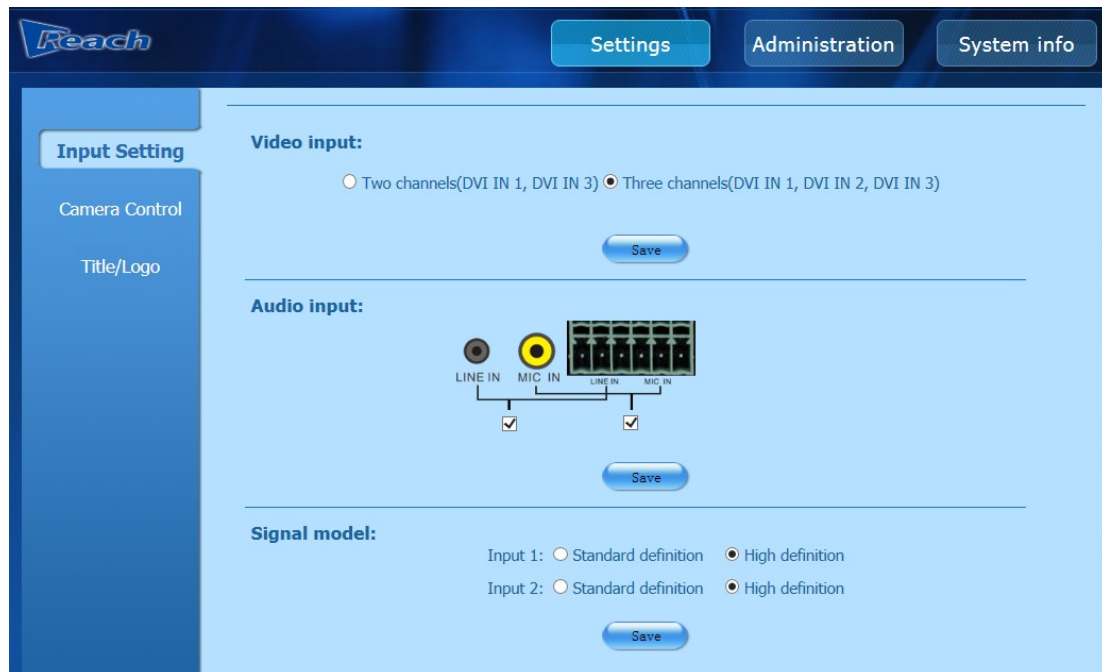


Figure 3-3

### 3.2.1 Input Setting

Input settings consist of three parts: **Video input**, **Audio input**, and **Signal model**.

#### Video input:

After Bee 7 is connected to input signals, you need to select the number of video channels in the Web page. For example, when Bee 7 is configured to input dual-channel signals from DVI IN 1 and DVI IN 3 interfaces, you need to select **Two channels (DVI In 1, DVI IN 3)** to display video normally.

1. Select the number of channels as needed in **Video Input**, as shown in Figure 3-4.
2. Click **Save** and a dialog box "Save success!" is prompted.
3. Click **OK** to complete the setting.

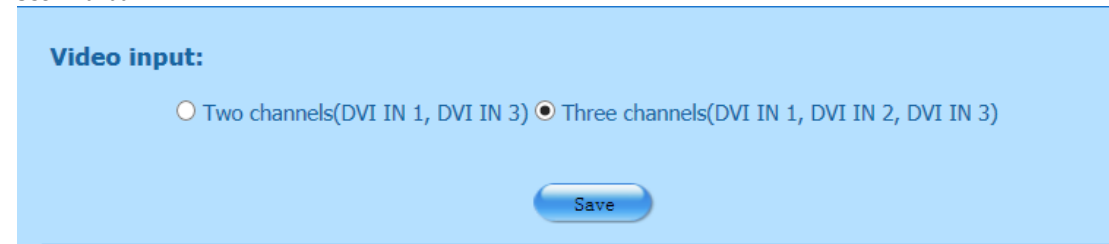


Figure 3-4

### Audio input:

After Bee 7 establishes the connection with an audio input device, the audio input device can work properly only after **LINE IN** or **MIC IN** is ticked off in the Web interface according to the interface connection type at the rear panel of Bee 7. If not, the sound will not be output.

- 1 Tick off **LINE IN** or/and **MIC IN** according to the interface connection type, as shown in Figure 3-5.

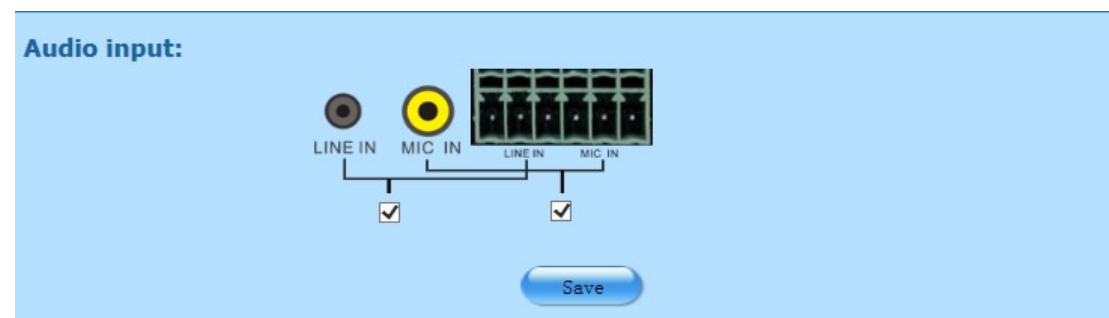


Figure 3-5

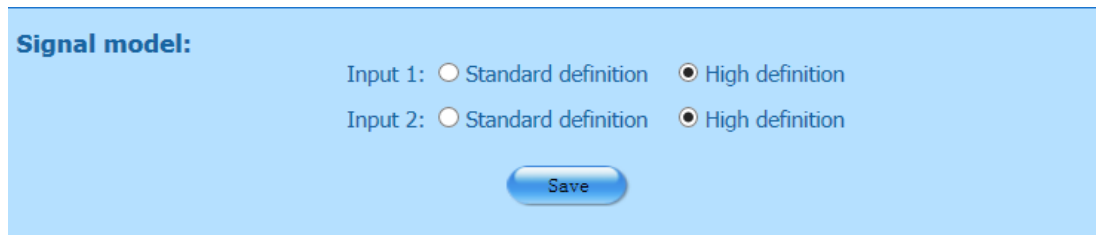
- 2 Click **Save** and a dialog box “Save success!” is prompted.
- 3 Click **OK** to complete the setting.

### Signal model:

After Bee 7 is connected to input video signals from a certain interface, you need to determine the signal format by ticking off **High definition** or **Standard definition** in the Web interface. For example, if **DVI IN 1** on the rear panel is connected to input SD signals and **DVI IN 2** is connected to input HD signals, to ensure that the

corresponding video signals can be displayed normally, you need to choose **Standard definition** for **Input 1** and **High definition** for **Input 2**.

- 1 Choose a respective signal standard for **Input 1** and **Input 2** according to the interface connection type, as shown in Figure 3-6.



Signal model:

Input 1: ☐ Standard definition ☒ High definition

Input 2: ☐ Standard definition ☒ High definition

Save

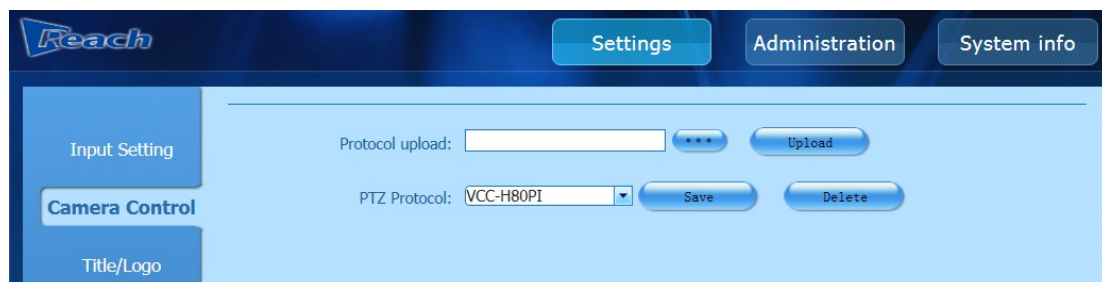
Figure 3-6

4. Click **Save** and a dialog box “Save success!” is prompted.
5. Bee 7 will reboot automatically after Click **OK** and then complete the setting.

### 3.2.2 Camera Control

#### Uploading a PTZ protocol

Click Camera Control to open the parameter setting page, as shown in Figure 3-7.



Reach

Settings Administration System info

Input Setting

Camera Control


Title/Logo

Protocol upload:

PTZ Protocol:

Figure 3-7

If there is no suitable camera control protocol for the existing camera, you need to upload an appropriate one. Note: Changing the input setting will lead to system reboot. You are recommended to stop recording first.

1 Click  to select a camera control protocol file (in **.ini** format) from the local directory.

6. Click Open (O)

7. Click **Upload**.

8. Click **Save** and a dialog box “Save success!” is prompted.

9. Click **OK** to complete the setting.

### Selecting a PTZ protocol

1 Click the drop-down list in **PTZ protocol** to select a protocol file.

2 Click **Save**.

3 Restart Bee 7 manually to validate the setting.

### Deleting a PTZ protocol

1 Click the drop-down list in **PTZ protocol** to select a protocol file.

2 Click Delete and a dialog box “do you want to delete the protocol?” is prompted.

3 Click OK to delete the file and a dialog box “Success!” is prompted.

4 Click OK to complete the deletion.

### 3.2.3 Title/Logo

Click **Title/Logo** to open the parameter setting page, as shown in Figure 3-8.

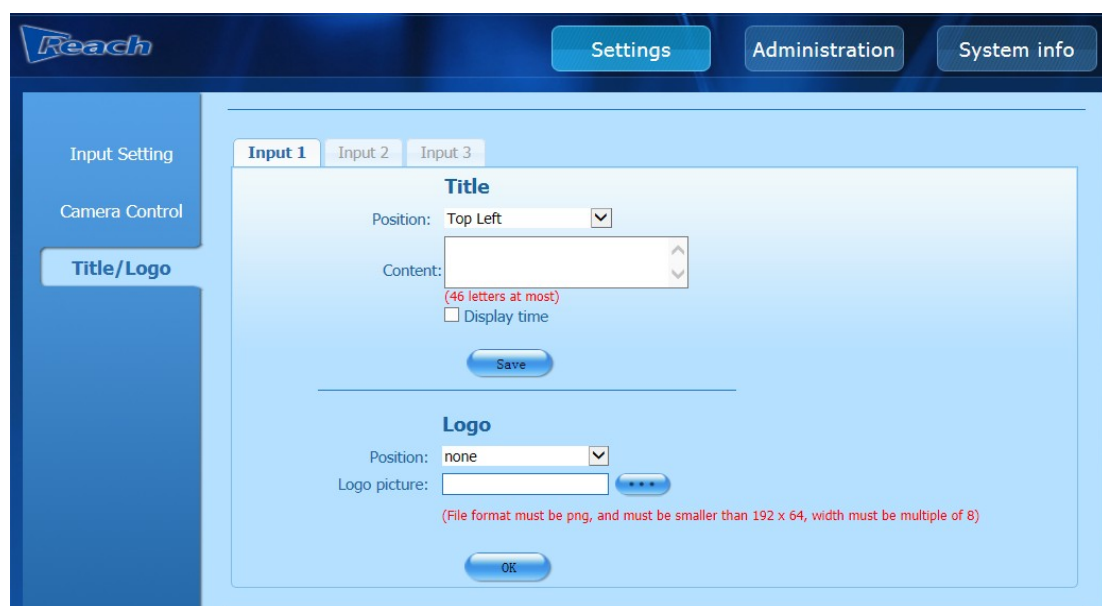


Figure 3-8

You can set the title, current time, and logo in **Input 1** and **Input2** and set the logo and non-title in **Input 3**.

### Title setting

- 1 Click the drop-down list of Position to select the position of the title text in the video image. This parameter has two values, Top left, and Top right.
- 2 Enter the title text to be displayed in Title contents.
- 3 Tick off Display time to display the system time of Bee 7 in the video image.
- 4 Click Save and a dialog box is prompted.
- 5 Click OK to complete the setting.


### Title deletion

When there is no title content, click **Save** and a dialog box is prompt. Click **OK** to complete the operation.

### Logo setting

Note: The logo picture is in the **.png** format. The logo picture of channels 1 and 2 cannot exceed 192 x 64, with its width being a multiple of 8. The logo picture of VGA signals from channel 3 cannot exceed 64 x 64.

You can add, hide, and display a logo as needed.

- 1 Click the drop-down list of **Position** to select the logo position in the video image. This parameter has five values, **Top left**, **Top right**, **Bottom left**, **Bottom right**, and **None**. **None** indicates that no logo is present.
- 2 Click  to select a logo image file from the local directory.
- 3 Click **Open (O)** after a file is selected.
- 4 Click **OK** and a dialog box is prompted.
- 5 Click **OK** to complete the setting.



## 3.3 System Configuration

Click **Administration** to display the system configuration page. By default, the **Network** tab is displayed as shown in Figure 3-9. The **Administration** page consists of three tabs, namely, **Network**, **User**, and **System Upgrade**.

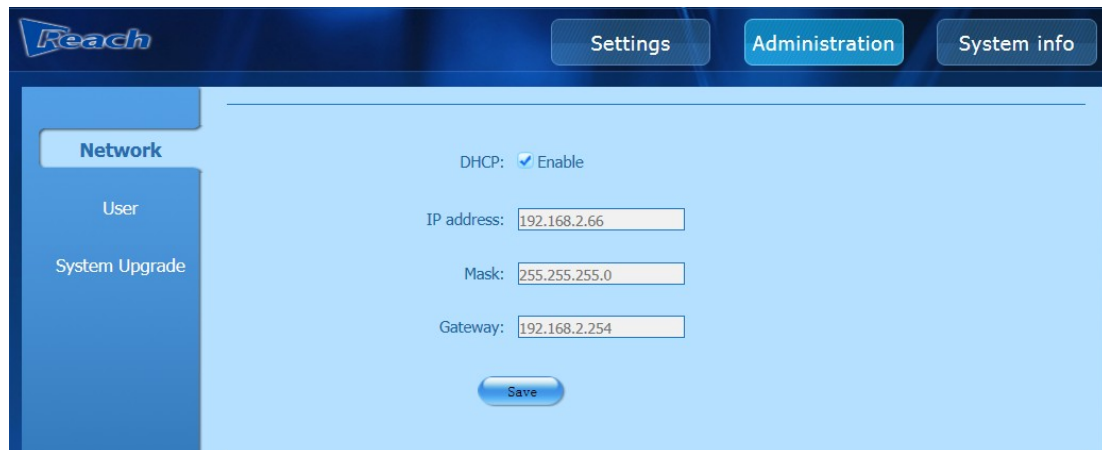


Figure 3-9

### 3.3.1 Network

You can obtain the IP address of Bee 7 automatically by enabling Dynamic Host Configuration Protocol (DHCP). Alternatively, you can enter the IP address of Bee 7 manually.

- Tick off **Enable** in **DHCP** to obtain the IP address of Bee 7 automatically. Bee 7 will reboot automatically after the setting, and you can view the IP address obtained automatically in the LCD screen.
- If **Enable** is not ticked off, you can fill the IP address information of Bee 7 manually in **IP address**, **Mask**, and **Gateway**. Bee 7 will reboot automatically after the setting, and you can view the configured IP address in the LCD screen.

### 3.3.2 User

Click **User** to open the parameter setting page, as shown in Figure 3-10.

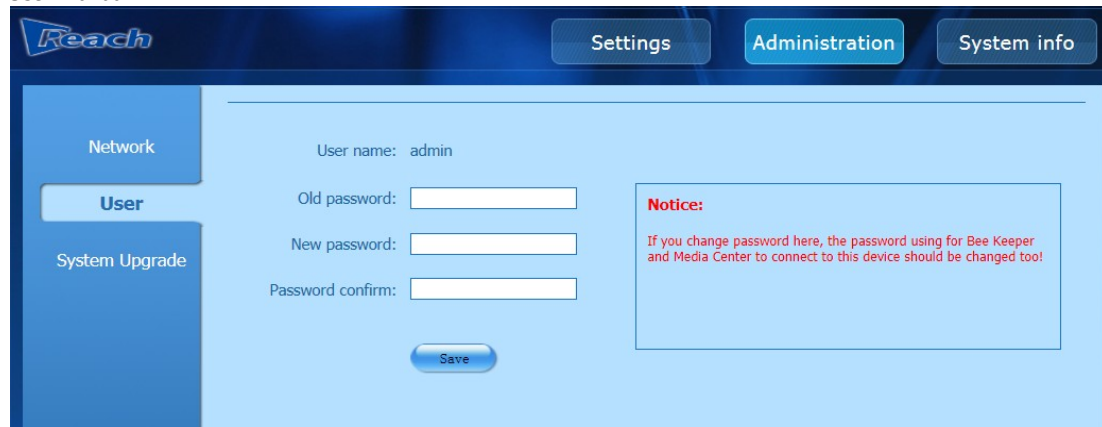


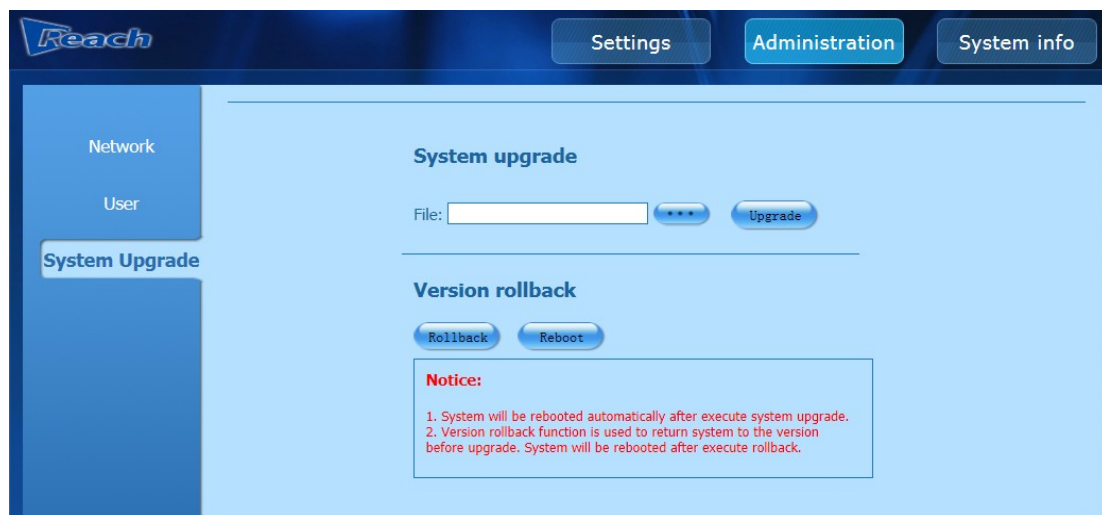
Figure 3-10

Note: After changing the system administrator password, you need to change the password for connecting the management platform and media center accordingly.

- 1 Enter the original password in Old password (the default password is admin).
- 2 Enter the new password in New password.
- 3 Re-enter the new password in Password confirm.
- 4 Click Save in the System Admin part to complete the setting.


### 3.3.3 System Upgrade

Click **System Upgrade** to open the parameter setting page, as shown in Figure 3-11.



## System Upgrade

This parameter upgrades the system version of Bee 7. The detailed process is as follows:

- 1 Click  to select the system upgrade file.
- 2 Click Open (O).
- 3 Click Upgrade and a dialog box is prompted.
- 4 Click OK. The system upgrade is completed after Bee 7 reboots automatically.

## Version Rollback

This parameter rolls back the current version to the version before upgrade.

Click **Rollback** to roll back to the previous version.

## System Reboot

Click **Reboot** to restart Bee 7.

# 3.4 System Information

Click **System info** to view the system version, hard disk space, and IP address.

# 4. PC Management Platform

The PC management platform is connected to Bee 7 through the IP network to monitor the status of Bee 7, remotely control cameras in the classroom, and fine-tune the VGA images.

## 4.1 Installing the Management Platform

Double-click the installation package to install the management platform as prompted.

## 4.2 Opening the Management Platform

Double-click the shortcut of **Beekeeper.exe** on the desktop to open the management platform.

## 4.3 Adding a Device

The management platform does not have information about the Bee 7 that is connected to it for the first time. Therefore, you need to add information about the Bee 7 to the management platform in **Add a Device**.

If **Media Center** is added, you can monitor the status of Bee 7 in all classrooms managed by the media center. If **Terminal** is added, you can only monitor the status of Bee 7 in a specific classroom.

The procedure of adding a Bee 7 to the management platform is as follows:

- 1 Click **Add Device** to open the parameter setting page, as shown in Figure 4-1.

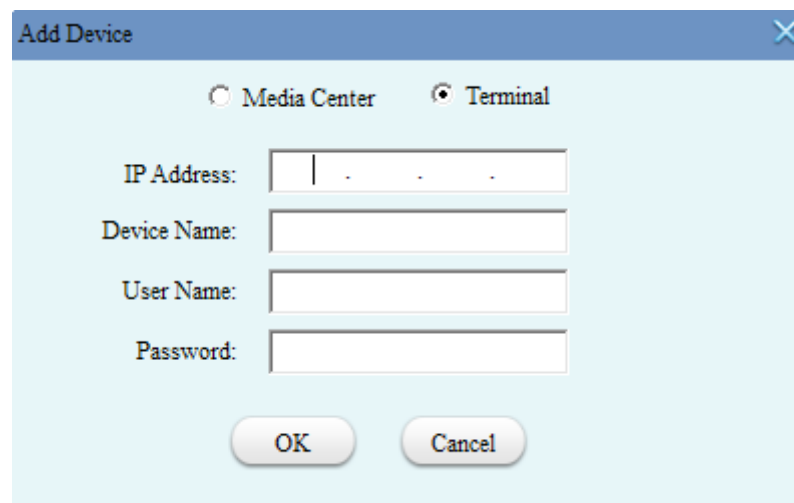


Figure 3-2

- 2 Enter the IP address of Bee 7 in IP Address.
- 3 Enter a user-defined name of Bee 7 in Device Name.
- 4 Enter the username in User Name. The default value is admin.

- 5 Set the password in Password. The default value is admin.
- 6 Click OK to complete the device addition.

After that , the system will display the status of the new Bee 7, as shown in Figure 4-2. You can control the recording in **Recording Operations**.

Parent Directory	Room	Room Status	Signal Status	Volume Status	Recording Status	Recording Operation
003(192.168.82.26)	Room0(192.168.82.26)					

Figure 4-2

## 5. PC Management Platform Interface

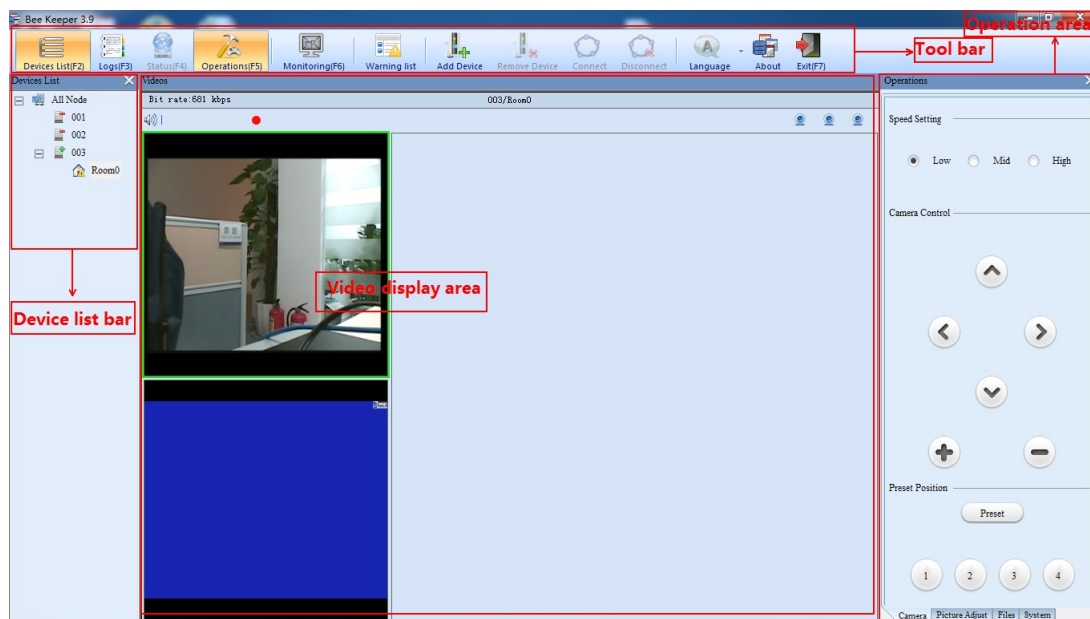
Figure 5-1 shows the layout of the management platform interface:

The topmost part of the interface is **Tool bar**.

The left part of the interface is **Device list bar**.

The middle part of the interface is **Video display area**.

The right part of the interface is **Operation area**.



## 5.1 Tool Bar

**Device List:** displays information about the device. You can open or close the Device List window by clicking it.

**Logs:** displays the log information about the connected Bee 7 and management platform, such as the operation type and operation status (success or failure). You can open or close the **Logs** bar by clicking it.

**Status:** displays the status Information about the classroom, such as the classroom name, recording status, and available disk space. You can open or close the **Status** bar by clicking it.

**Operations:** displays the list of operations available. You can open or close the **Operations** bar by clicking it.

**Monitoring:** monitors a maximum of nine pictures of Bee 7. You can open or close the **Monitoring** bar by clicking it.

**Warning list:** displays warning information about Bee 7, such as no video signals. You can open or close the **Warning list** bar by clicking it.

**Add Device:** adds a device by clicking it.

**Remove Device:** deletes a selected Bee 7 by clicking it.

**Connect:** connects a Bee 7 in the disconnected state by clicking it. After the connection is established, double-click **Room0** of the corresponding Bee 7 to open and play the video file again.

**Disconnect:** disconnects a connected Bee 7 by clicking it.


Note: **Connect** and **Disconnect** are mutually exclusive. Only one of them can be enabled at a time.

**Language:** selects the language of the management platform. Available languages include simplified Chinese, traditional Chinese and English.

**About:** displays information (such as version number) about the management platform by clicking it.

**Exit:** quits the management platform by clicking it.

## 5.2 Device List Bar

Click  in **Devices List** as shown in Figure 5-2 to close the device list. Alternatively, you can click **Devices List** to open/close the device list bar.

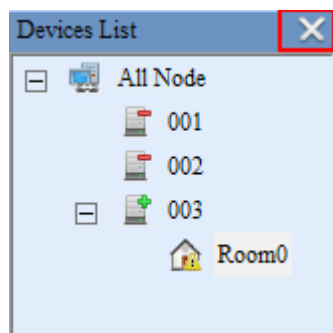


Figure 5-2

You can view all connected Bee 7 devices in **Devices List**. Place the mouse on a specific Bee 7 and you can view detailed information, such as IP address of the Bee 7, as shown in Figure 5-3.

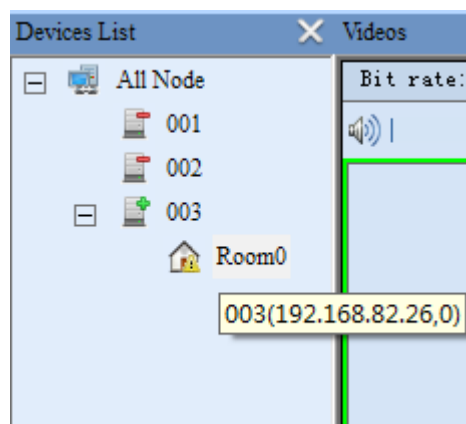


Figure 5-3

## 5.3 Videos Area

### 5.3.1 Non-monitoring mode

In non-monitoring mode, information in the Videos bar includes: bit rate, audio signal, video connections, and recording state (record, pause, and stop), as shown in Figure 5-4.

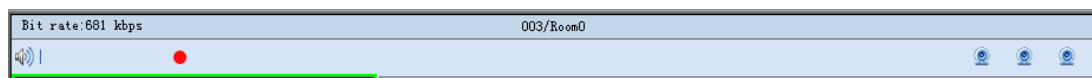

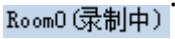



Figure 5-4

Click the corresponding status icon to start, pause, or stop a recording task:

When no video is recorded, click  to start recording, and the **Room0** status is

displayed as .

When a video is being recorded, click  to stop recording.

When a video is being recorded, click  to pause recording, and the **Room0** status is

displayed as .

### 5.3.2 Monitoring mode

In monitoring mode, you can monitor a maximum of nine video pictures concurrently.

When the video display mode is non-monitoring, click **Monitoring** to switch the mode to monitoring, as shown in Figure 5-5.



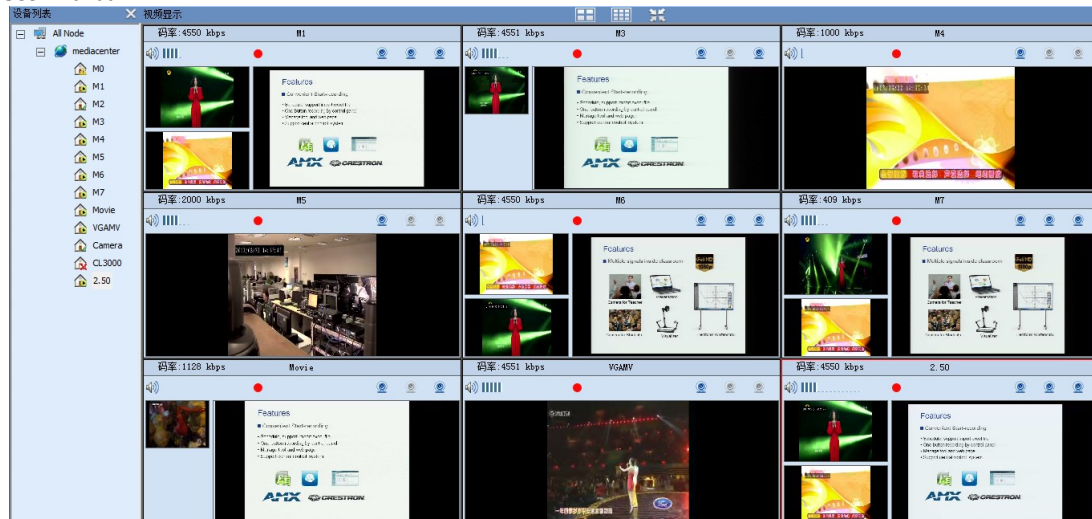





Figure 5-5

You can click  to display four pictures on the screen; click  to display nine pictures; click  to display the full-screen picture; and press Esc to quit the full-screen mode.

In the monitoring mode, you can record a video. The record controlling is the same as that in the non-monitoring mode. For details, see 5.3.1.

## 5.4 Operation Area

In the non-monitoring mode, you can perform operations such as remote control, picture fine-tuning, file management, and system management over a single Bee 7.

Click  in **Operations** as shown in Figure 5-6 to close the operation area.

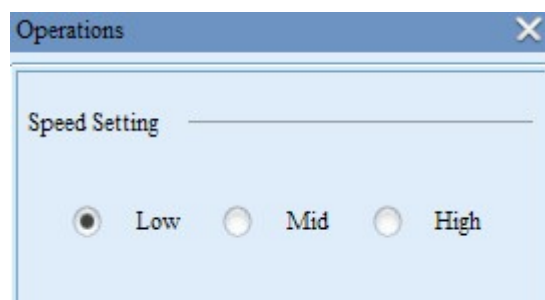


Figure 5-6

### 5.4.1 Camera Management

Figure 5-7 shows the **Camera** tab for camera management.

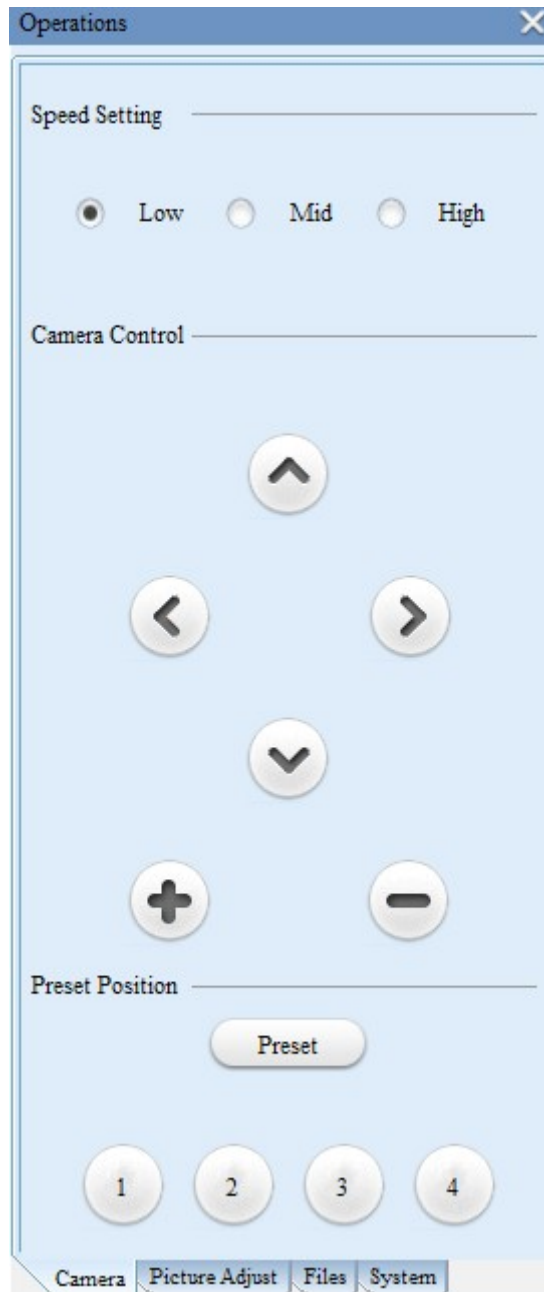








Figure 5-7

## Selecting a camera

Click a video picture and select it.

**Speed Setting:** controls the moving speed of the camera direction. The higher the speed level, the faster the direction moving. The speed levels include **Low**, **Mid**, and **High**.

**Camera Control:** controls the direction of a camera through , , , or ;

adjusts the focal length through  or .

**Preset Position:** adjusts the position of a camera. The setting can be saved for the next invoking.

### Setting a Preset Position

Click **Preset** and then click any of the numbers 1 to 4 to set a preset position.

### Invoking a Preset Position

Click any of the numbers 1 to 4 to adjust the camera direction to the preset position.

## 5.4.2 Picture Adjustment

Figure 5-8 shows the **Picture adjust** tab. Note that only analog signals, not digital signals, can be adjusted in this tab.

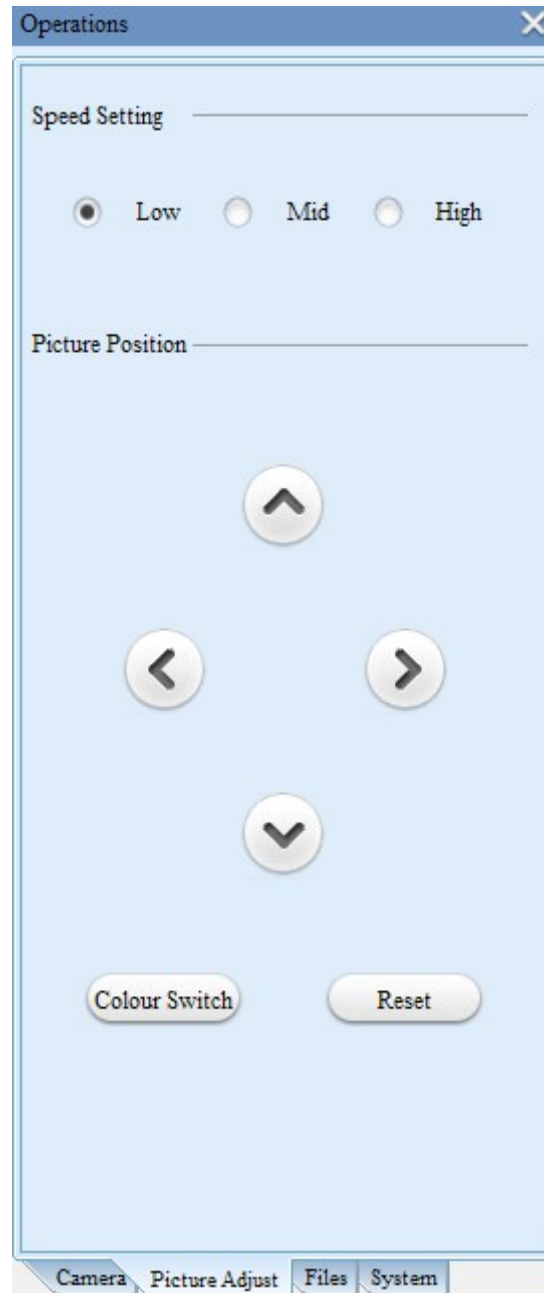










Figure 5-8

**Speed Setting:** Options **Mid** and **High** control the moving speed of the video image. The higher the speed level, the faster the direction moving. The option **Low** modifies the color cast of the image.

**Picture Position:** When **Speed setting** is set to **Mid** or **High**, click , , , or

 to control the moving direction of the video image. When **Speed setting** is set to

**Low**, click , , , or  to modify the color cast of the video image.

**Color Switch:** enables this function in case of a picture deviation so that the system can make adjustment in self-adaptive mode.

**Reset:** restores the picture of the analog signal to the initial state.

### 5.4.3 File Management

Figure 5-9 shows the **Files** tab for file management.



### 5.4.4 System

Figure 5-10 shows the **System** tab for parameter setting.

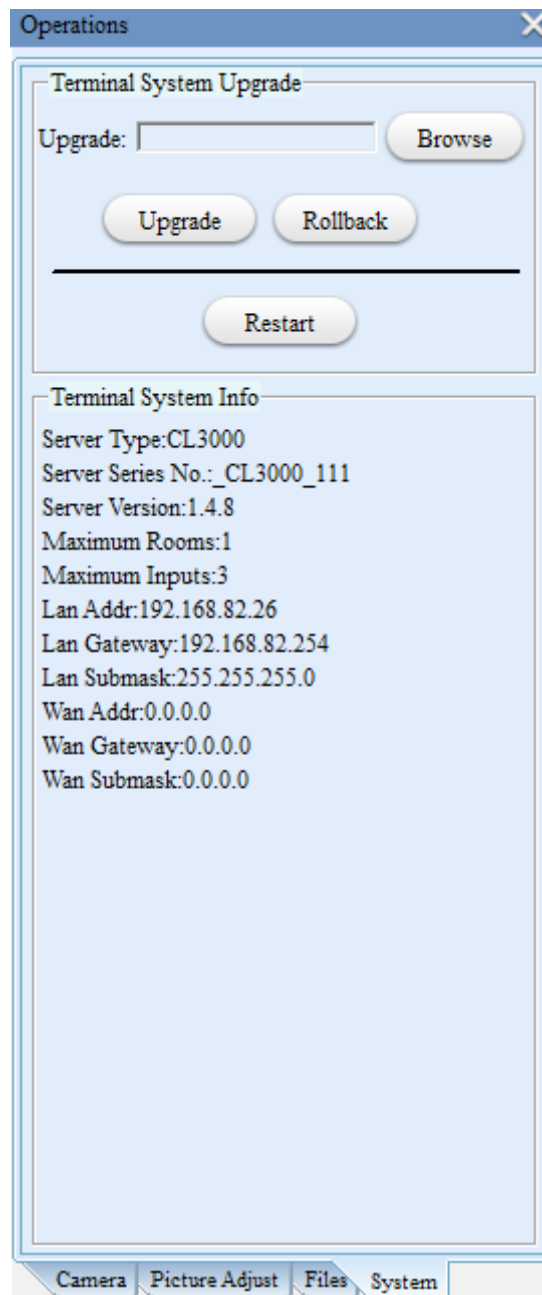


Figure 5-10

#### Terminal System Upgrade

You can upgrade the system version of Bee 7 in this part.

- 1 Click Browser to select an upgrade file. A prompt page for file selection will be displayed.
- 2 Click Open (O).
- 3 Click Upgrade to upgrade the system. Bee 7 will reboot automatically after the system upgrade is complete.

## **Rollback**

Version rollback indicates that the Bee 8 system is rolled back to the previous version. Click **Rollback** to roll back to the previous version.

## **Restart**

Restarting the collecting device is to restart Bee 8.

Click **Restart** to restart Bee 8.

## **Terminal System Info**

You can view information about Bee 8 (such as the device name and version number) in this part.

# 6. Media Center (Pro)

## 6.1 Adding a Device (Bee 7)

- 1 Log in to the back-end management page of the media center.
- 2 Click Server Management in Configuration management.
- 3 Click Add.
- 4 Fill up information about Bee 7 (such as the IP address) in the prompted page.
- 5 Click OK to add a device (Bee 7).



After being added, the new Bee 7 will automatically establish the connection with the media center. You can log in to the media center to perform operations over Bee 7, such as parameter setting and recording management.

## 6.2 Media Center (Pro) Operation Guide

For detailed information, refer to **Reach Media Center User Manual V1.0**.