



Bee9 Multiple Scene Intelligent Recorder

USER'S MANUAL

VERSION V1.0 (US)

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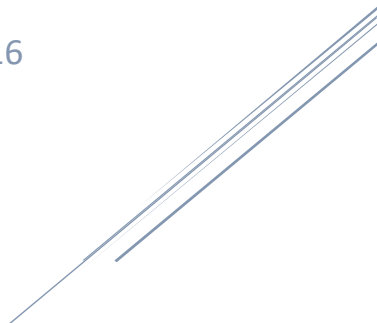


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Note:

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. Updated versions are available at <http://www.reach-us.net/products/bee9>. Thank you.

Once unboxed, the Bee9 is ready to be integrated into a classroom equipment rack. To make this process easier, predetermine the following integration steps.

The location of the Presenter Close-up Camera

- The presenter close-up camera is the key to effective visual knowledge transfer in this system. Utilizing the Reach HD-830 HD PTZ camera, it should be located centered on the blackboard, whiteboard, or large screen display, and located no more than 55 feet (16.76M) from the front of the HD-830 lens to the front wall of the room.

The location of the Presenter Wide Camera, and the Classroom Wide Camera

- The presenter wide shot should include the entire front of the room, to give the presenter ample room to walk around at the head of the classroom. It is also very important to position the camera in such a way, that the difference between the presenter close up and presenter wide shots do not create a noticeable jump when the Bee9 switches between them. (Which it will do a lot with an active presenter!)

The location of the Analysis Camera

- The analysis camera is a network camera that provides critical spatial and locational data to the Bee9. Its location in the room is critical for accurate tracking and switching. The analysis camera should be located as close as possible to the center of the room from left to right to allow it to properly track the presenter. The analysis camera should also be located as close as possible to 15 feet (4.5M) from the front wall of the room.

No obstructions abutting the front wall of the room

- The front wall of the room must be a flat plane. Any obstructions abutting the front wall will cause inaccurate spatial data to be sent to the Bee9 diminishing the tracking accuracy of the system.

The location of the Remote Controller

- The remote controller is a key asset to the presenter, and should be located in close proximity to where she anchors to in the room. Cabling to the remote controller is RS-485, so distance is not a concern, however, if the capability of USB download is a consideration, a USB extender will be required for long cable runs.



Now that you know the challenges to a successful installation, it's time to begin the planning the integration process. Refer to sections 1.2 and 1.3 for connections, mount the cameras, place the Bee9 appliance in the equipment rack, run all the cables, connect to the LAN, and fire up the system. Once you can see video from the HDMI video output of the Bee9, refer to section 2.1 of this manual, to login as an administrator, then section 2.XX to plug in an IP address, Subnet mask, and gateway consistent with the LAN its attached to time to do the magic you do as an integrator with "the right stuff".

The resources available to you with respect to documentation are:

The Director Application Manual which includes all the details of working with the Kite Application.

Please review this manual thoroughly before continuing with this journey. It will make the setup of the Bee9 hassle free. This process is intensely technical, and should only be performed by qualified integrators with experience in mapping video analytics. Take your time; and remember: measure twice, cut once. It will save you a lot of frustration.

We are here to help you, if this is your first Bee9 integration or your thirty-third. Don't hesitate to call, email, or text us. We will make you look like a rock star!

The Bee9 is a capture, streaming and recording device that integrates advanced auto-tracking and auto-switching features, to track a presenter's movement, and automatically change the camera source to the most meaningful shot based on the presenter's location and presentation content status. The shot selections include:

- Presenter close-up shot
- Presenter wide shot
- Classroom wide shot
- Presentation content full screen.

The Bee9 can record both switched production output and isolated camera (iso) angles, so that the switched production file can be edited on the Reach Media Center, or other non-linear editing system. The Bee9 was created as a classroom's recording solution for the education market, but can easily be integrated into conference rooms in a corporate environment, instead of expensive and complicated video conference systems, for the transfer of business intelligence to knowledge workers who otherwise would not be able to access it due to technology constraints.

The Bee9 features 3 HD-SDI inputs for connecting HD cameras, 1 DVI-I input for computer generated presentation content such as Microsoft Power Point Presentations, and analog unbalanced audio inputs and outputs for simple integration into an existing system. The system is set up by the included Director application which includes the Kite Tracking application, as well as a web interface, which are preloaded on the Bee9. Once the system is set up, and automatic mode is selected, the Bee9 will run unattended. The Director application also allows users to take creative control of the functions of the Bee9 by changing its operation to manual mode, where a user can preview and take shots as required to produce program content. Management of the Bee9 is performed through the Bee9 web interface, and connected Media Center server.





No.	Image	Item	Description
1		LCD Screen	This display will provide current status of the system, its network connections, and provide confirmation of recording mode. When the Bee9 is powered on, the display will indicate the startup procedure.
2		Control Panel USB Port	Connect a USB-A to USB-A cable (provided) to this port and the remote control panel. This port does not provide power to an external disk drive powered by USB!
3		LAN Port for Analysis Camera	This LAN port is used to connect to the system analysis camera. The IP address is preset within the Bee9. No manual setting is required. Note: The analysis camera must be connected directly. Ethernet extenders CANNOT be used.
4		Serial Port	Connected to the serial port of the Remote Control Panel. (Note: Even though connectivity is by an Ethernet cable, this connection utilizes RS-485 protocol.)



No.	Image	Item	Description	No.	Image	Item	Description
1		Power Input	AC 100~240V input	10		Audio 1	Reserved for future use
2		Power Switch	Power on/off	11		Audio 0	2 channel unbalanced audio input
3		3G-SDI 1	1 st HD video SDI input port, Presenter close-up camera input	12		LINE OUT	Audio loop out port
4		3G-SDI 2	2 nd HD video SDI input port, Classroom wide camera input	13		RS232/RS 485	Control protocol switching
5		3G-SDI 3	3 rd HD video SDI input port, Presenter wide camera input	14		RS232 Control Interface	Reserved for future use
6		LOOP OUT	Reserved for future use	15		RS232 Control Interface	RS232 for Presenter close-up camera PTZ control, the protocol switch should set to the RS232 position
7		DVI	Digital, analog VGA signal input port	16		RS485 Control Interface	RS485 for Presenter close-up camera PTZ control, the protocol switch should switching to RS485 side
8		HDMI	HD video output port, with output of movie mode video	17		RESET	Reset button, which provides access to backup system for main system upgrading in case that the main system is damaged*.
9		HDBase-T	Reserved for future use.	18		LAN	Network connection

*Turn off power to the Bee9, press and hold RESET switch with a straightened paper clip, power-up the unit while continuing to hold the reset switch for 5 seconds then release. After Bee9 is restarted, enter the IP address indicated on the LCD display in a browser. Log into the backup system page and perform a system reload. Details of the reload procedure are included in the appendix.



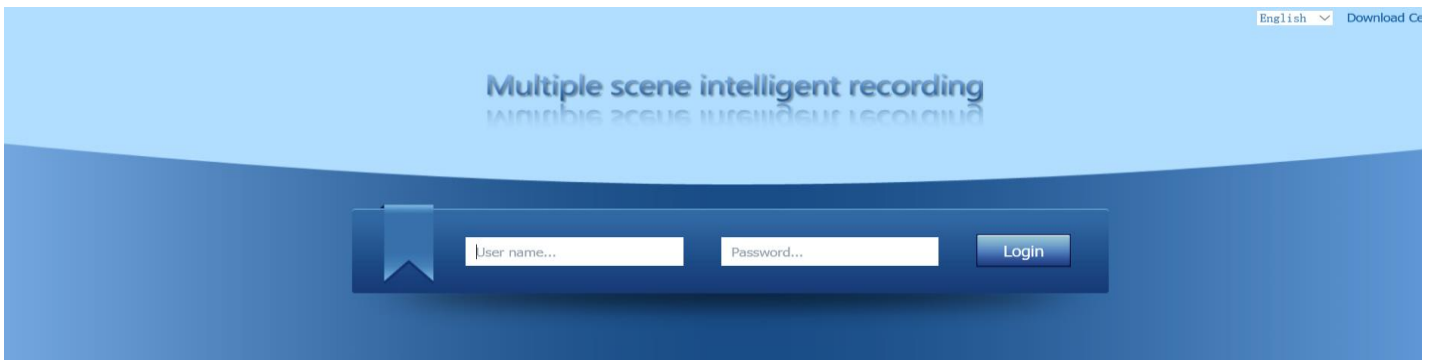
No.	Image	Item	Description	No.	Image	Item	Description
1		Record	Press this button to start recording, or to resume recording when recording is paused. After recording is started, related scrolling messages will show on the LCD screen on Bee9 front panel. The button LED is off in default.	5		Volume Bar	Dynamic display of peak audio volume.
2		Pause	Press this button to pause a recording; press Record button again to resume recording. The button LED is off by default.	6		Video Signal Lamp	V1: Presenter Close-up signal. V2: Classroom Wide view signal. V3: Presenter Wide view signal. VGA: Computer Presentation Content Signal.
3		Stop	Press this button to stop recording. The LED will flash on and off, indicating the file recording is done. The LCD Screen is switched to the scrolling message display to confirm the action. The button LED is off in default.	7		File Download	When a USB storage device is connected, press this button to download the last recorded file. The button will flash during the download, and stays on when the download is complete.
4		VGA Lock	When the Bee9 is in auto mode, and this button is pressed, the computer presentation content will be displayed full screen until the button is pressed again. The button LED is off by default.	8		USB Port	Used to connect storage device. Supported Device: USB flash disk, USB hard disk
9		Power Switch	This LED blinks during start-up, and stays illuminated after start-up.	Please note that even though connectivity of this remote controller is through an Ethernet cable, the signals are RS-485. Be particularly attentive not to connect the remote control cable to the analysis camera port, or vice versa.			

1. After the USB flash disk or USB mobile HD is inserted in the USB connector, Bee9 will make self-check on the USB flash disk or USB mobile HD. In case that the available storage space is smaller than 1G, the text “USB” will flash on the LCD Display. Recording will not be started. However, recorded files may be downloaded to the USB flash disk or USB mobile HD. In case of multiple partition, a prompt of partition selection will be displayed on the LCD Screen.
2. When downloading the video file with USB flash disk or USB mobile HD, if the available space is less than 50MB during the downloading, a prompt will be displayed on the LCD Display and the downloading will stop.
3. USB disk download is disabled when Bee9 is recording, and a prompt will appear on the LCD panel.
4. (Supported Formats: EXT3, NTFS, FAT32). This port does not provide power to an external disk drive powered by USB!
5. Files larger than 4GB are not supported by FAT 32.

- Logging into the Bee9

A static IP address is configured from the factory in the Bee9 so that it can be set up for deployment. After the device is connected to power and booted up, the IP address of the device from the information displayed on the LCD display.

The user may log in to the Bee9 web interface with a browser by entering the IP address in the address bar. To configure the Bee9 to the classroom and adjust other settings, you must log in with the user name **admin** and password **admin**.



The following page will be displayed when logging in Bee9 as the administrator.

admin, [Sign Out](#)

File Management

Video Setting

System Config

System Info

System Information

Serial No.: _CL4000T_0000

Equipment Type: CL4000T_0000

Web Version: 2.2.7

System Version: v1.3.0(I)(4SDI-V1.0.2/0x4a02/0x4a82)

Compilation Date: Wed Nov 11 14:35:34 GMT 2015

Disk Space: 1852.44 GByte

Free Space: 1688.77 GByte

Media Center IP: 0.0.0.0

Control Ip: 192.168.0.100

KEY: Unlock

There are four buttons on the top of the page to adjust the operating parameters of the Bee9.

File Management

Video Setting

System Config

System Info

- (the current page shown above)

admin, [Sign Out](#)

File Management

Video Settings

System Config

System Info

File Management

Search

Refresh

Note: Download and recording do not operate at the same time!

No.	File Name	Notes	Date	Size	Upload	Operation
1	20151219045341r0DSS-CLQ01732	First Recording	2015-12-19 04:53	6 MB	Uploaded	
2	20151218001327r0DSS-CLQ01732	Test Recording	2015-12-18 00:13	14 MB	Uploaded	

Jump to page 1

Click on File Management. A general description of this page follows:

1. Search Box

- Files may be searched by file name or note here. Type in the info you have and click the search button.

2. Refresh Button

- When you click refresh, and recordings not listed since you opened this page will populate the list.

3. Upload Button

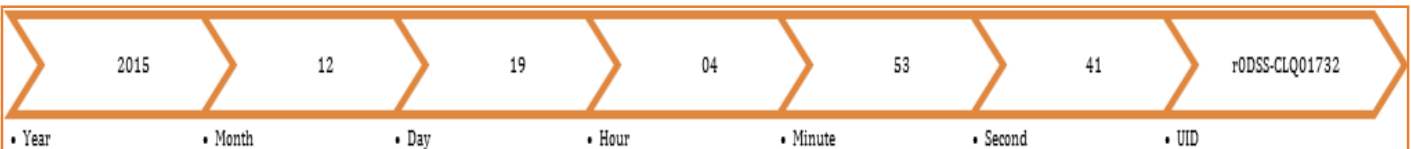
- When clicked, a selected file is uploaded from the Bee9 to Media Center or FTP location

4. Package Download

- When you click this button, all files associated with the file name are downloaded. **Note: This button is provided for users who continue to use older browsers. Reach recommends the use of the "Download Application when accessing program (movie) and iso (resource) content together.**

5. File Name

The file name convention is:



6. User created file notes

- Users may had information about the file here.

7. File Page Navigation

- Quickly change pages of files with these navigation buttons.

8. File Upload Status

- Reports if the file has been uploaded to Media Center.

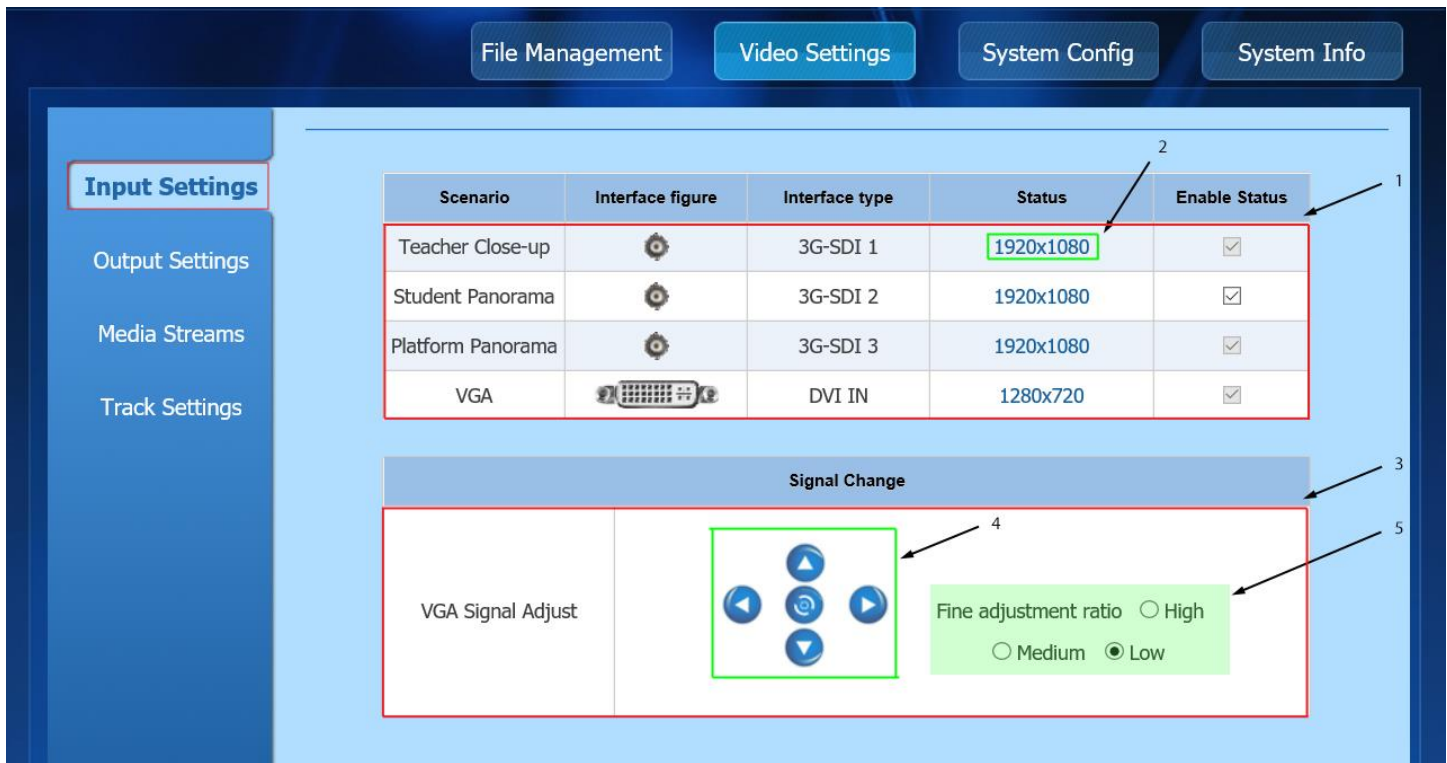
9. Program Download

- Click this button to begin downloading the produced program file.

10. Delete

- Click this button to delete the selected file. **NOTE: This step is not reversable!**

There are four tabs on the Video Settings page to configure input and output video signal parameters.



On the Input Settings tab:

1. Video input panel

- Provides video input legend.

2. Resolution display

- The Bee9 auto configures for each input. When a source is connected, Bee9 will display that source resolution.

3. Analog Video Phase adjustment panel

- This panel allows you to adjust analog VGA signals video phase so that there will be no shift when sources are changed.

4. Video Phase Adjustment Controls

- These control move the image left right up or down to center the analog VGA signal to the display.

Video Phase Adjustment Speed Control

- Use high speed adjustment for coarse video phase adjustment, slow for fine adjustments.

On the Output Settings tab:



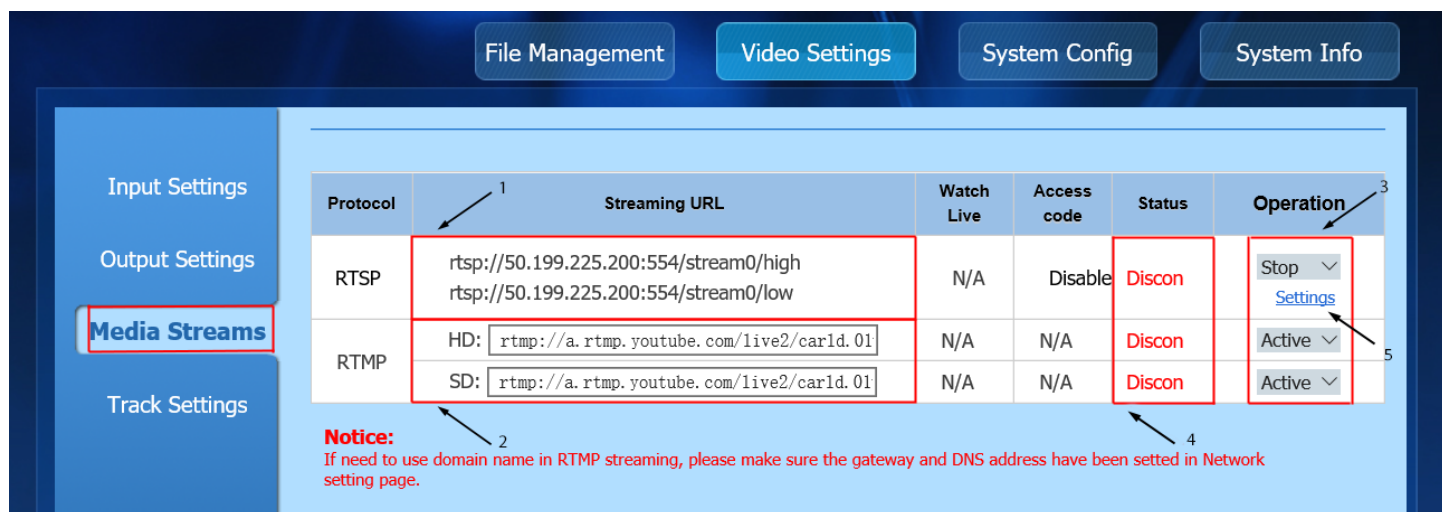
1. Video output resolution select

- Select the resolution you wish to view the Bee9 HDMI output on a local monitor.

2. Save Button

- Click save to register output resolution. **NOTE: when you click save, the Bee9 will automatically restart to register the output resolution change.**

On the Media Streams tab:



1. RTSP Stream Info

- This information provides a specific address for the Bee9 RTSP streams. You can copy this stream info and paste it into any live streaming media player (Flash player, VLC media player) to view the RTSP stream output.

2. RTMP Stream Info

- Paste this info from your RTMP Live Stream CDN like YouTube, or Wowza.

3. Operation Mode

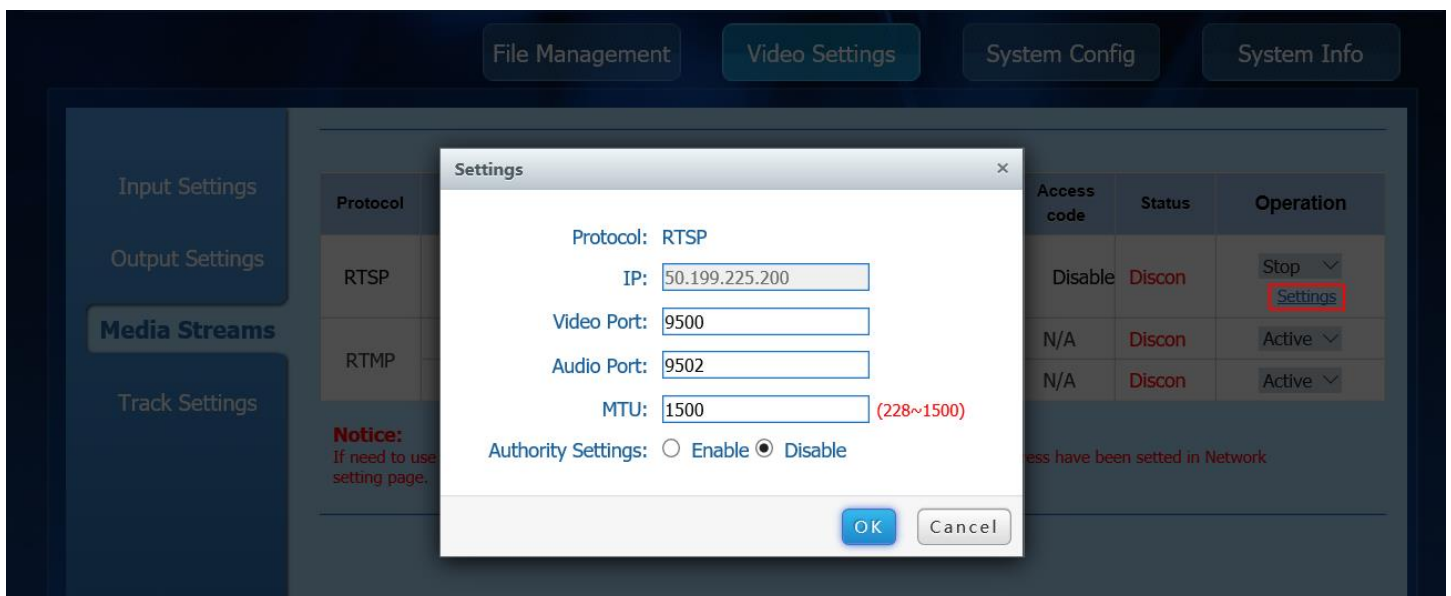
- Manual control to start and stop RTSP and RTMP streams.

4. Status Display

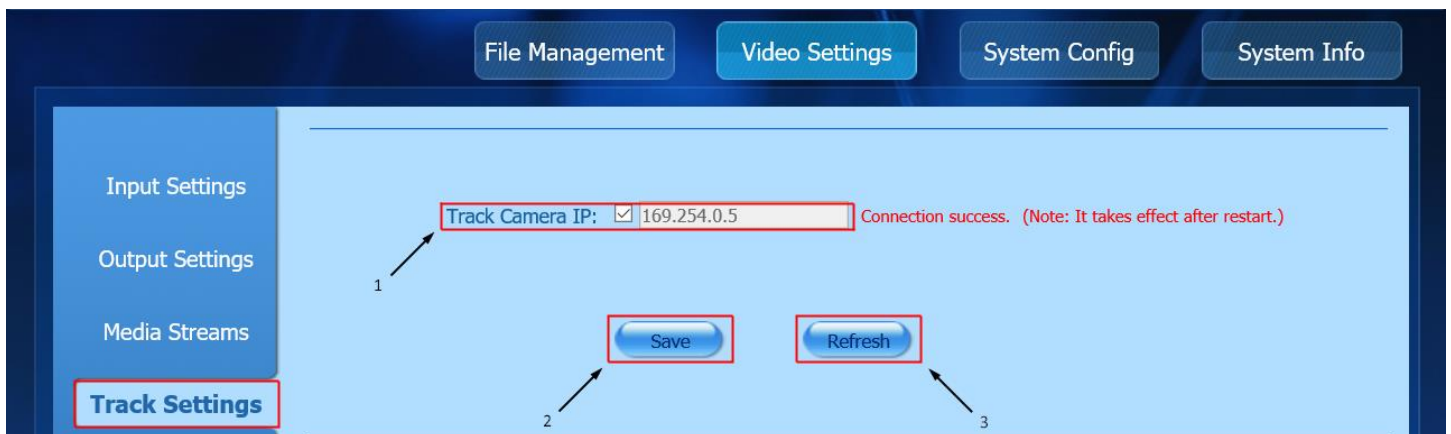
- With RTSP streams, when users are connected to the Bee9 statue will change from **disconnected** to **connected**. With RTMP streams, when the CDN is successfully receiving streams, the status will change from **disconnected** to **connected**.

5. Settings Link

- Use this to apply an access code to RTSP streams, and to adjust the port information should your LAN require it. **NOTE: Typically the default settings are acceptable for most networks. Please refer to the image below.**



On the Track Settings tab:



1. Analysis Camera IP Address

- This is an internally preset IP address matched **ONLY** with the network camera that shipped with the Bee9. Please do not change this address! This interface is provided in the unlikely event that the analysis camera has to be replaced.

2. Save Button

- Click save to record the IP address above. **NOTE: when you click save, the Bee9 will automatically restart to register the IP address change.**

Refresh Button

- When replacing the Bee9 analysis camera, press the refresh button to reveal its IP address.

There are four tabs on the System Config page to configure all core functionality. On the Network tab:

File Management Video Settings System Config System Info

Network

User

Parameter

Central Control

Platform

System Upgrade

DHCP: ☐ Enable (Note: It takes effect after restart.)

IP Address: 50.199.225.200

Subnet Mask: 255.255.255.240

Gateway: 50.199.225.206

DNS: 3.0.0.0

Refresh Save

1. DHCP

- Check this box if your LAN utilizes a DHCP server to obtain IP address.

2. Network Credentials

- Populate these text boxes if your LAN requires you to provide Static IP address information.

2. Save Button

- Click save to record the IP address above or invoke DHCP credentials. **NOTE: when you click save, the Bee9 will automatically restart to register the IP address change or mode change.**

Refresh Button

- Refreshes the information on this page.

On the User Tab:

The screenshot shows the 'User' tab selected in the left sidebar. The main content area is divided into two sections: 'Administrator password' and 'Common user password'. The 'Administrator password' section has fields for 'User Name: admin', 'Current Password', 'New Password', and 'Password Confirm', with a 'Save' button below. A callout box on the right contains a warning message and a cartoon character saying 'Don't forget this!!!'. The 'Common user password' section has fields for 'User Name: guest', 'New Password', and 'Password Confirm', with a 'Save' button below.

1. Administrator or Guest Password Update Functionality

- This tab simply allows users to change the password for the Administrator or Guest, when logged in to the Bee9 as an administrator. **When users change the admin password, remember to change it on Media Center, or FTP server, so you can continue to upload content for distribution.**

On the Parameter Tab:

The screenshot shows the 'Parameter' tab selected in the left sidebar. The main content area displays two settings: 'Zoom Speed' with a slider set to 7, and 'USB download' with a dropdown menu set to 'Enable'. Arrows labeled 1 and 2 point to these settings respectively.

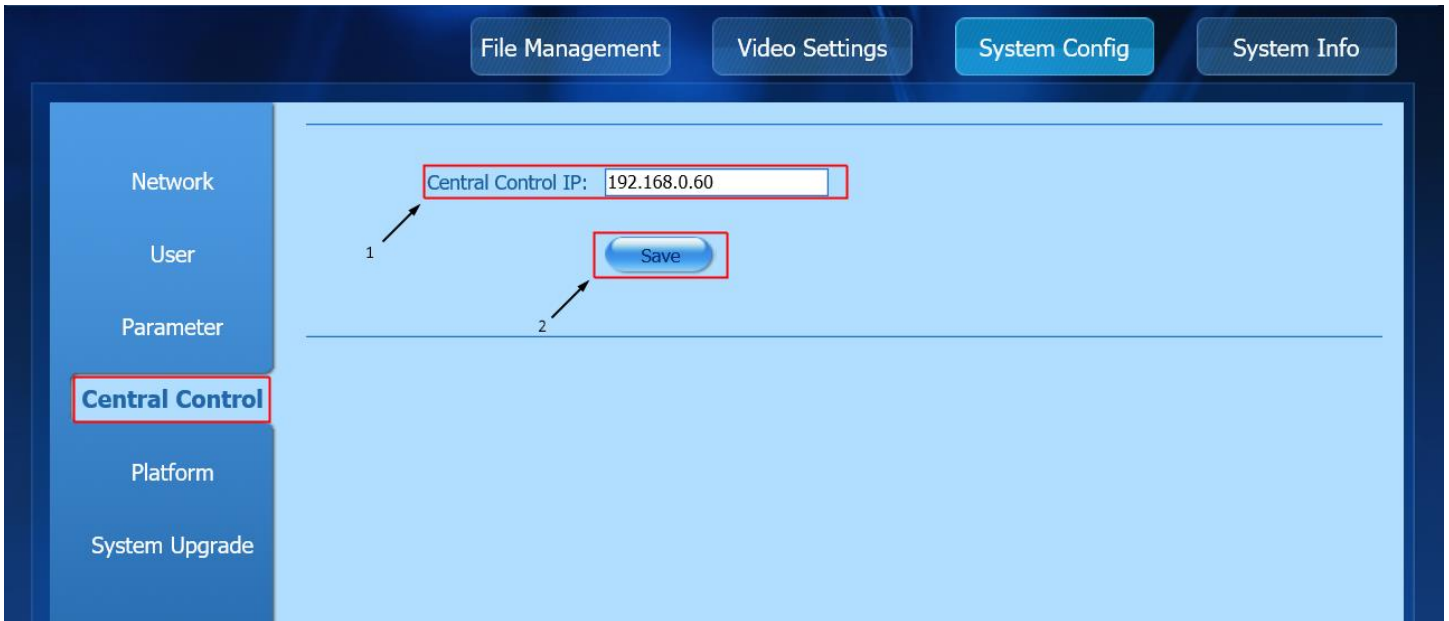
1. Zoom Speed

- This slide bar controls the zoom speed while the Presenter Closeup PTZ camera is adjusting to tracking information. **A slower speed will look more natural if the presenter moves faster than the analytics can adapt, but may detract from the production value of the content. On the basis of the observed accuracy of the Bee9, the default setting is recommended.**

USB Download

- This pull down menu allows users to enable or disable the USB port for file transfer.

On the Central Control Tab



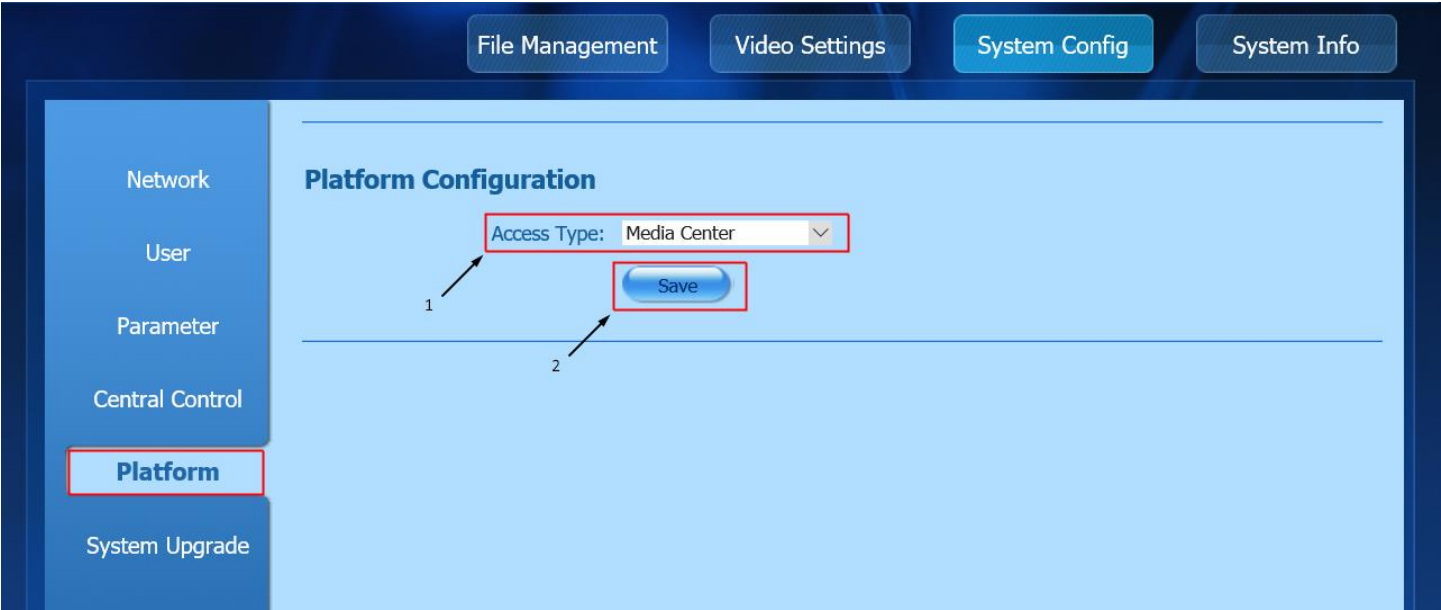
1. Central Control IP Address

- Enter the IP address of the system external control equipment here.

Save Button

- Click the save button to invoke the change and register Telnet commands from this IP address.

On the Platform tab:



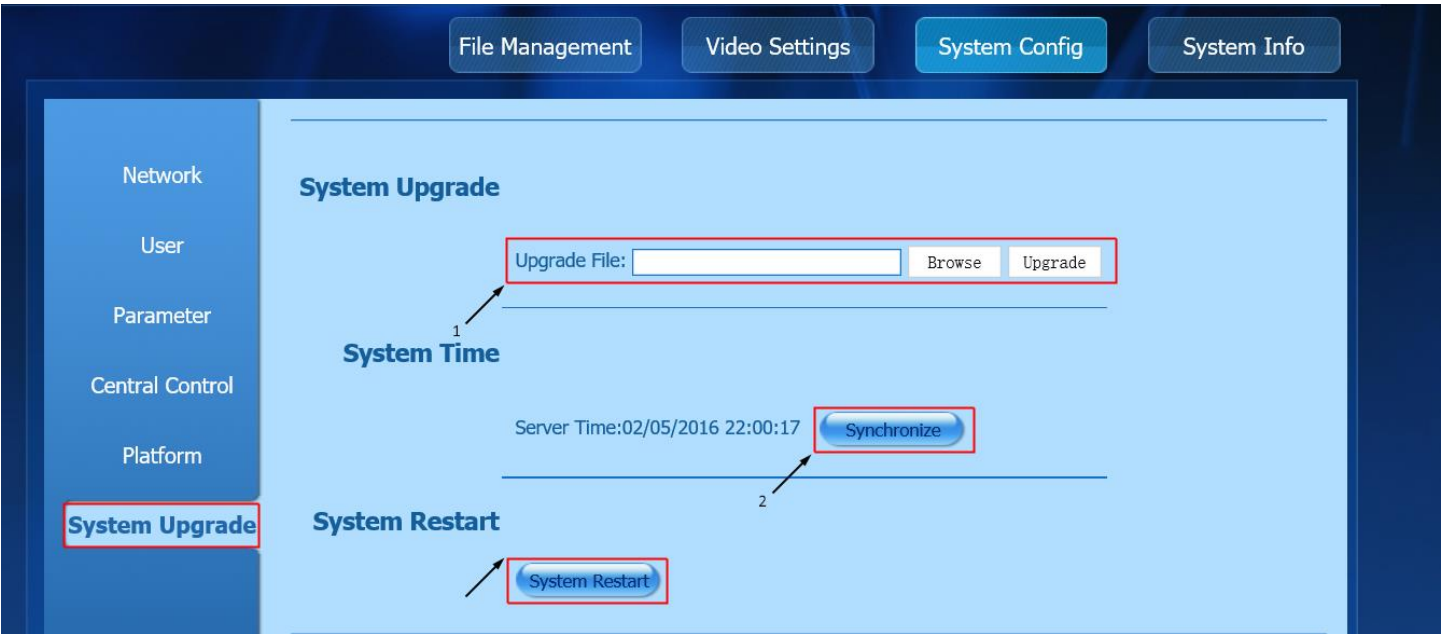
1. Access Type

- Click this pull-down to choose between Media Center or FTP Server for upload target destination..

Save Button

- Click the save button to invoke the platform change.

On the System Upgrade tab:



1. System Upgrade

- Detailed instructions follow this section.

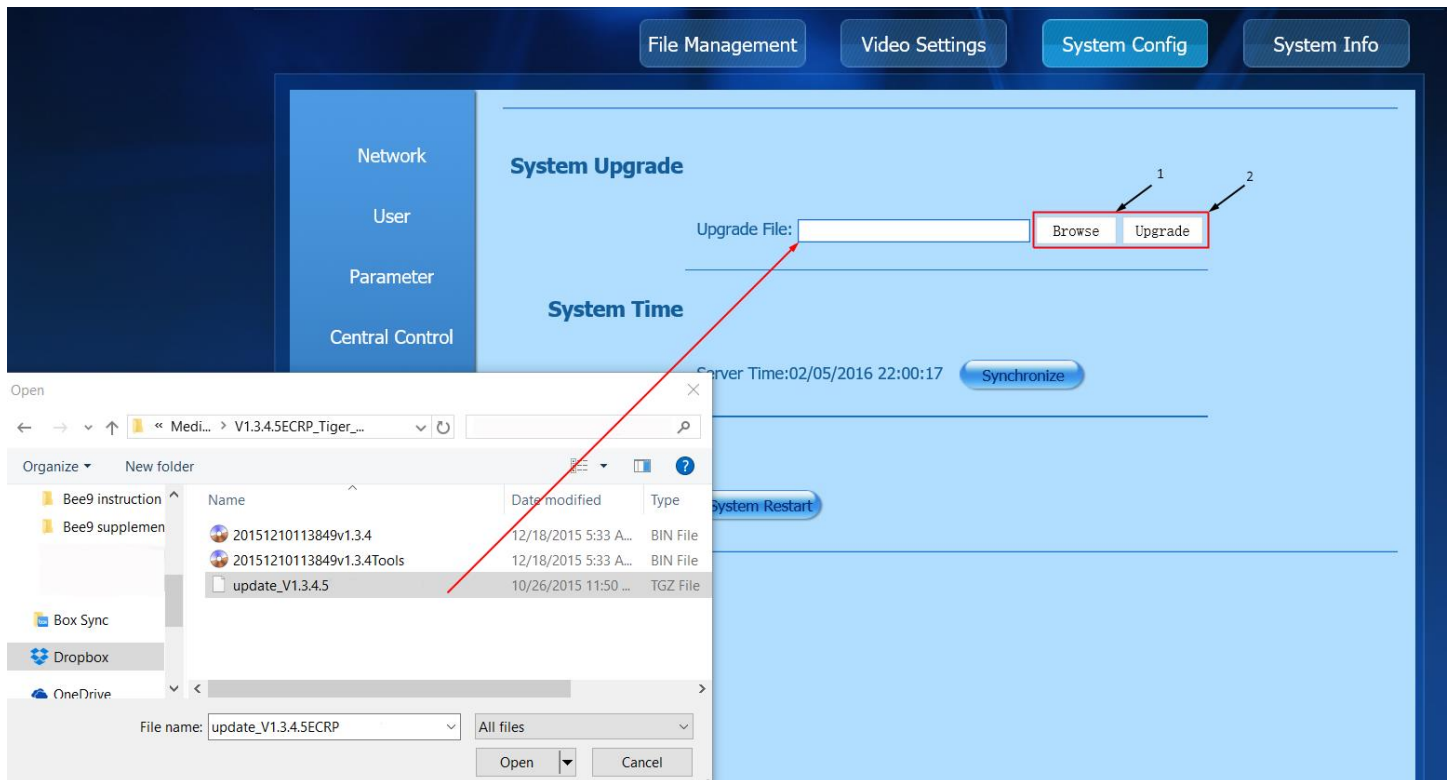
Synchronize Button

- Click this button to synchronize the Bee9 to NST-A server time.

System Restart Button

- Click this button to restart the Bee9. It is a good practice to restart the Bee9 on a periodic basis. Reach recommends a restart once every two weeks, to clear the caches.

Upgrade detail:



1. System Upgrade

- Click browse to locate the upgrade file.

Upgrade Button

- Click this button to upload the file to the Bee9, which will modify the OS and other code to conform to the latest revision level. The Bee9 will automatically restart after the update.



The system info page is where we started when we logged in to the Bee9 as an administrator. The information on this page is valuable to the IT professional, and integrators, as it completely describes the Bee9 physically, and where it is on the LAN. After preparing the Bee9 for deployment, this page allows users to confirm the equipment is ready to be interfaced with the Director application, and the Kite application to continue the process of configuration.