



COLLABORATE[®] PRO 600 USER GUIDE



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COLLABORATE Pro

USER GUIDE

CLEARONE DOCUMENT

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NOTICE: This Class A device complies with Part 15 of the FCC rules and Canadian ICES-003. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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Chapter 1: Introduction

IN THIS CHAPTER

This chapter introduces the COLLABORATE Pro 600 video collaboration system and includes the following sections:

- COLLABORATE Pro 600 Overview
- Main Features
- Comparison Table
- Feature Highlights

COLLABORATE PRO 600 OVERVIEW

The COLLABORATE Pro (COLLABORATE Pro 600) is an all-in-one high- definition executive videoconferencing system, featuring an embedded MCU, built-in recording capability, streaming of live and recorded sessions, data sharing, and more.

COLLABORATE Pro provides an interface to videoconferencing via its plug-and-play application-in-a-box, providing on-screen operation controls and advanced call control options during conferencing. Utilizing the newest H.264 video standard and clear, crisp audio, the COLLABORATE Pro brings users face-to-face with other people and organizations.

COLLABORATE Pro enables you to record and stream video calls to multiple locations with up to 8 additional participants.

COLLABORATE Pro incorporates advanced data sharing capabilities, allowing you to turn any videoconference into a fully interactive meeting. It can display presentations or videos on large monitors, connect to an external laptop for data sharing, and open various file types from USB storage devices.

COLLABORATE Pro is ideal for users who need a powerful videoconference solution, offering point-to-point/multipoint capabilities, powered by ClearOne's COLLABORATE Pro software.

Various accessories, such as a PTZ camera, ClearOne CHAT 150C Mic Array and DataPoint—can be installed and integrated as part of the COLLABORATE Pro system.



NOTES:

- For more information about the COLLABORATE Pro 600 physical installation, including the connection of cables and devices to COLLABORATE Pro 600, refer to the COLLABORATE Pro 600 Quick Setup Guide.
- For the complete technical specifications, refer to the COLLABORATE Pro 600 datasheet.

MAIN FEATURES

COLLABORATE Pro allows you to call a destination via LAN, and to interact via video and data-sharing during calls. Some of the primary capabilities of the system include:

- ☐ Point-to-point or multipoint connections
- ☐ Recording, streaming, and data sharing
- ☐ Recording and playback of point-to-point and multipoint (MCU based) sessions
- ☐ Streaming via a Web interface, Windows Media Player or VLC player
- ☐ Sharing files via a USB flash drive
- ☐ Sharing data via Collaborate share
- ☐ Sharing cable-connected laptop or wireless via network.
- ☐ Access files on a USB flash drive while in idle mode
- ☐ Side-by-side Picture-In-Picture (PIP) view
- ☐ Session multicast
- ☐ Embedded MCU for multipoint sessions
- ☐ Embedded multicast viewer
- ☐ Calling via Contacts or Recent calls
- ☐ Calling via online directories
- ☐ Calling Via URI
- ☐ Multipoint videoconferences support
- ☐ Configurable audio, video and displays, and automatic answering
- ☐ Display on-screen running text to all participants via Web management during a call
- ☐ Support ClearOne CHAT 150C Mic Array
- ☐ Far End mute indicator
- ☐ Telnet interface
- ☐ Communicating in standalone mode, COLLABORATE Central mode and gatekeeper mode
- ☐ Turn unit into sleep mode and wake it up using the remote control
- ☐ Web-based management
- ☐ Regulatory Compliance: UL, CSA (cUL), TUV, TUV-CB, CE-LVD, CE, FCC Class B, BSMi, VCCI, C-Tick, RoHS.

COMPARISON TABLE

The following table specifies the differences between the various models of COLLABORATE Pro.

	COLLABORATE Pro 300 Series	COLLABORATE Pro 600 Series	COLLABORATE Pro 900 Series
Max Tx	1080/30	1080/60	1080/60
Max Rx	1080/60	1080/60	1080/60
MCU	-	Up to 1+8	Up to 1+8
Recording	-	√	√
Streaming	-	√	√
Data via USB	√ (Only on idle mode)	√	√
DataPoint (Optional)	√	√	√
Wireless Data	√	√	√
Multiple Cameras	-	√	√
Bandwidth	Up to 4 Mbps	Up to 6 Mbps	Up to 6 Mbps
H.239 Dual Video support	√	√	√
PTZ camera	√	√	√
Balanced Audio	-	√	√
Audio Device	CHAT 150C	CHAT 150C Mic Array	CONVERGE Pro

Notes:

- **The display resolution must be set to 1920x1080 when the received resolution is 1080. Otherwise you may encounter video issues.**

FEATURE HIGHLIGHTS

New features incorporated in COLLABORATE Pro 600 and 900 include:

- New sleek design
- Dual HDMI input with the following modes of operation:
 - 2 cameras
 - 1 camera & 1 laptop
 - 2 cameras (one at a time) and laptop via DataPoint
- Balanced audio in/out
- RF Remote control – install the unit in a closet
- SSD Storage for faster operation and added resiliency

Chapter 2: Getting Started

IN THIS CHAPTER

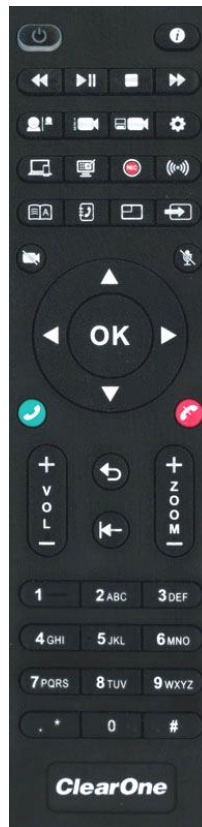
Once the COLLABORATE Pro unit is installed, connected and turned on, it is ready for use. This chapter describes the following basic operations:

- Using the Remote Control
- Using the On-Screen Menu
- System Icons
- Displaying System Information

USING THE REMOTE CONTROL

You can navigate the COLLABORATE Pro on-screen graphic user interface (GUI) using the RF remote control, bundled with the unit.

Pressing any button on the remote control activates the on-screen GUI, which appears on top of the camera / videoconference picture.



The remote control includes the following button types:

- Alphanumeric Keypad
- Command Buttons
- Navigation arrows and Additional Buttons

ALPHANUMERIC KEYPAD











The remote control includes an alphanumeric keypad with buttons from 0 to 9. In the Dot button you can find the following signs: '.', '*', '#', '^', '@', '\$', ':', '=', '-', '_', '!' etc. In addition, Clear button to erase entered characters.









In different windows, you can toggle between **numbers** and **letters**, depending on the field. Some fields accept numbers only.

- Switch between letters and numbers by pressing a few times on the corresponding key
- When DTMF dialing is requested, use the numeric keypad.

COMMAND BUTTONS

The following command buttons are available on the remote control:

Button Image	Button Name	Command
	Power	Turn system into sleep mode Wake up system
	Status	Display the system information Display the current call status Show the on-screen online help
	Data	Open presentation menu
	Phone Book	Open the phone book
	Input	Switch between camera input Change wireless main sender
	Far End	Control the position (PTZ) of the camera at the near/far end
	Player Controller	Control recordings on idle mode.
	Preset: Recall	Recall a camera PTZ preset position
	Preset: Set	Set a camera PTZ preset position
	Picture-In-Picture (PIP)	Toggle the PIP position (5 positions + Side-by-Side) Change wireless layout

	Button Name	Command
	Recent Calls	Display the current Recent Calls
	Mute Mic	Mute the local microphone
	Recording	Start \ Stop recording
	Streaming	Start \ Stop streaming
	Settings	Open the settings menu
	Mute Video	Temporarily disable the local video camera and its transmission
	Delete	Delete characters Delete recording
	White Board	Open Spontania white board

NAVIGATION ARROWS AND ADDITIONAL BUTTONS

Using the Navigation arrows of the **OK** button, you can navigate the GUI menus/options in four directional movements: **Up**, **Down**, **Left** and **Right**.



In addition to the Navigation arrows, the following buttons are available around it:

- ☐ **Back** – Returns to the previous step/window without saving changes
- ☐ **Menu/OK** – Selects/activates a highlighted GUI item/function (highlighted in orange on the screen)
- ☐ **Zoom In/Out** – Zooms in or out with the camera
- ☐ **Make Call** – Start a new call
- ☐ **End Call** – End the current call or close the GUI.

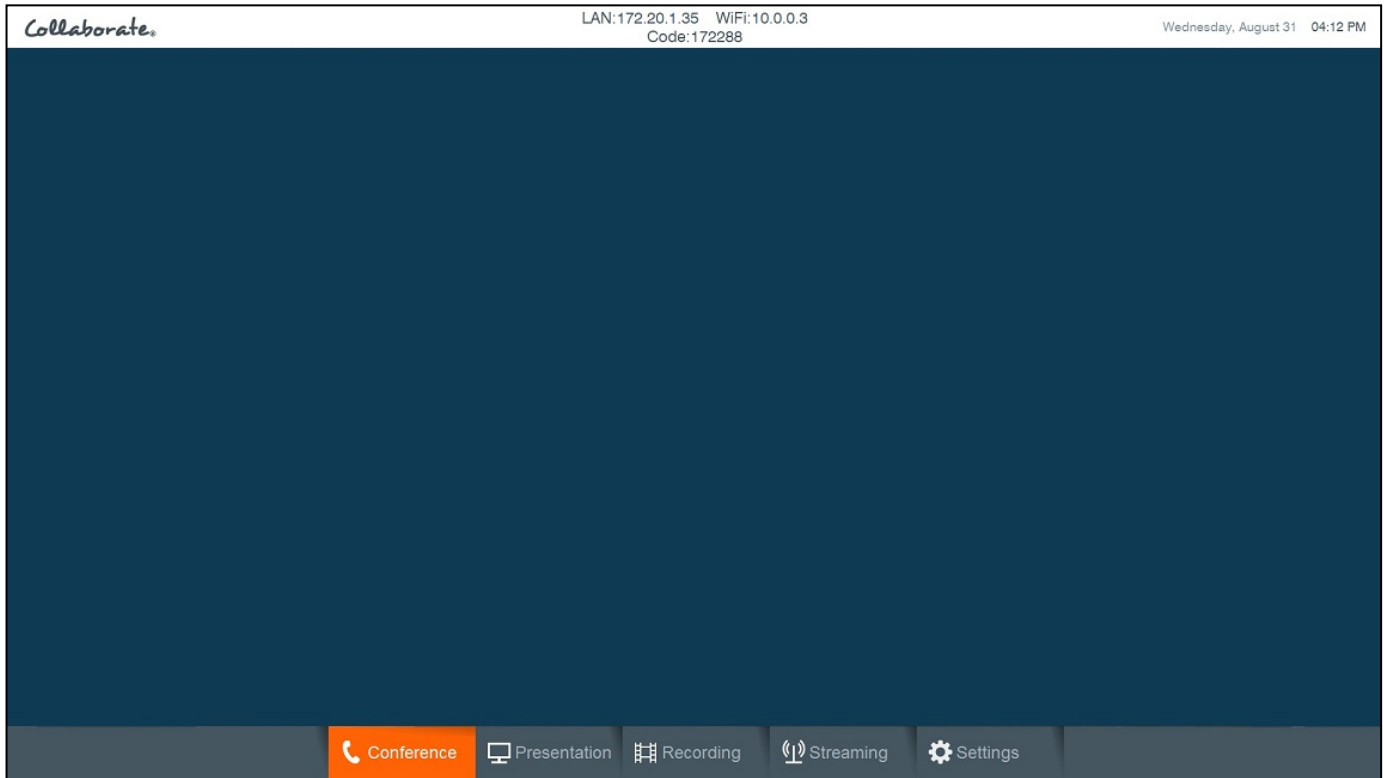
NOTE: The red End Call button can also be used for turning off or restarting the unit. Press and hold the button until the power confirmation prompt appears.

USING THE ON-SCREEN MENU

The on-screen menu enables you to navigate COLLABORATE Pro options prior to and during a videoconference call. The main menu is accessed using the remote control (see Using the Remote Control).

To display the COLLABORATE Pro main menu:

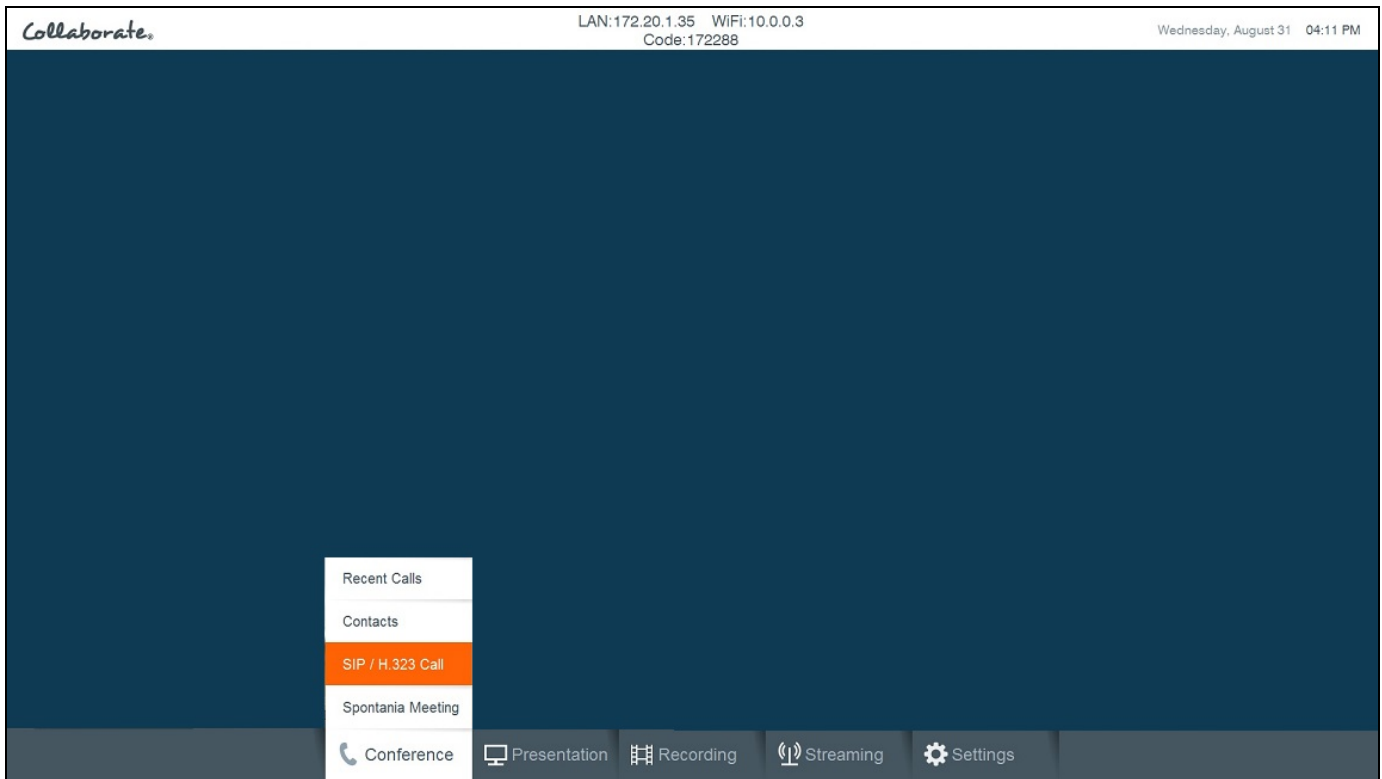
- ☐ Press **OK** on the remote control.



Navigate the COLLABORATE Pro menu using the remote control. To expand

menu options:

- ☐ Press the up arrow (↑) on the Navigation arrows when the expandable option is selected.




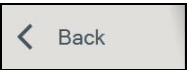
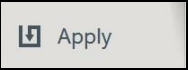

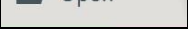
To access a category/option:

- Press **OK** when the category/option is selected (highlighted in orange).

To collapse the menu options:





















- Press **Back** on the remote control.

The following menu buttons may appear occasionally in the GUI (appear in the context of use):

GUI Button	Label	Function
	OK	Save changes
	Back	Return to the previous window without saving changes
	Apply	Apply changes
	Restore Defaults	Cancels all user-defined settings and returns the unit to its factory default settings
	Open	Open the selected folder/file

SYSTEM ICONS

The following icons indicate the different behaviors of the system.

Icon Image	Meaning
	Mute Speaker
	Mute Microphone
	Far End Microphone Mute
	No Network
	Far End Camera Control (FECC)
	Do Not Disturb
	Central Registration
	Central Registration Failed
	Gatekeeper Registration
	Gatekeeper Registration Failed
	MCU Voice-Switch Layout
	Multicast
	Streaming
	Recording
	Recording paused
	Far End Recording
	Encrypted Call
	Audio Only Call
	SIP Registration
	SIP Registration Failed

DISPLAYING SYSTEM INFORMATION

Whenever the COLLABORATE Pro unit is turned on, you can view the system status details. Different details are displayed when the unit is in idle state or in an ongoing videoconference session.

To display the current system status details:

- Press **Status** () on the remote control. The Status window appears.

Information		
System	System ID:	MEETING-ROOM
Call Statistics	System Model:	Collaborate PRO 600
Call Status	Software Version:	7.7.4 171.102.0.0 - PQAB
Data Statistics	License Installed:	1080p@60fps, Multisite(4-Way), Presentation, Recording, Streaming
	Server:	Not Registered
	Serial Number:	1664-3579-22
	MAC Address:	0C:54:A5:31:29:AB
	IP Address:	172.20.1.89
✓ OK < Sessions		

When COLLABORATE Pro is in the idle state, the Status window displays the following information:

- **System ID** – System ID as defined in the system settings (see Preference Settings)
- **System Model** – COLLABORATE Pro model
- **Software Version** – Software version of the COLLABORATE Pro application.
- **License Installed** – COLLABORATE features that available with the installed license.
- **Server** – The current operation mode:
 - **Not registered** – The unit is not connected to a COLLABORATE Central server or a gatekeeper.
 - **COLLABORATE Central** – The unit is connected to a COLLABORATE Central server
 - **Gatekeeper** – The unit is connected to a gatekeeper server.
 - **SIP Proxy** – The unit is connected to a SIP proxy server.
- **Serial Number** – The unit unique serial number.
- **MAC Address** – MAC address of the COLLABORATE Pro unit

- **IP Address** – IP Address of the COLLABORATE Pro unit, as automatically assigned by the DHCP server or as manually configured via **Settings>System>LAN**. You can use this IP Address to access and manage the unit via a browser (see Accessing COLLABORATE Pro via Browser)

NOTE: During a videoconference call, you can display additional/different relevant information by selecting Call Status / Call Statistics in the Status window.

COLLABORATE SETUP

When system is loaded for the first time (after restore defaults), the setup wizard is displayed on screen in order to configure the basic settings:

1. General:

Collaborate Setup 1 of 4

General	Name	<input type="text"/>
Network	Language	English (English) ▾
Proxy	Time Zone	(UTC+02:00) E. Europe ▾
License	Time	13 ▾ : 52 ▾
	Date	13 ▾ / 07 ▾ / 2016 ▾

→ Next

- **Name** – System name used to identify the system when using DNS dialing.
- **Language** – Select the desired language for the user interface. Click **Apply**. (A system restart is required after changing the system language.)
- **Time Zone** – Select your country time zone.
- **Time** – If not already set, enter the current time.
- **Date** – If not already set, enter the current date.

Select **Next**.

2. Network:

Collaborate Setup 2 of 4

General

Network

Proxy

License

Obtain Address From DHCP ☒

Ethernet Speed 1000.0 Mbps

IP Address

172.20.1.30

Subnet Mask

255.255.0.0

Default Gateway

172.20.0.253

Obtain DNS automatically ☒

DNS Server

172.20.0.100

Additional DNS Server

172.20.0.105

DNS Suffix

vconltd.co.il

< Back

→ Next

- ❑ **Obtain Address from DHCP Server** – Select the checkbox to obtain an IP Address from a DHCP server.
- ❑ **IP Address** – Set the IP Address for this system. If using a DHCP server, the address obtained from the DHCP server is displayed.
- ❑ **Subnet Mask** – Set the subnet mask number for your network. If using a DHCP server, the address obtained from the DHCP server is displayed.
- ❑ **Default Gateway** – Set the IP Address of the default gateway router. If using a DHCP server, the address obtained from the DHCP server is displayed.
- ❑ **Obtain DNS Automatically** – Use the DHCP server to decide your DNS server address. If you do not select Obtain address from DHCP server, fill in the following fields:
 - **DNS Server** – Set the IP Address of the DNS server. If using a DHCP server, the address obtained from the DHCP server is displayed.
 - **Additional DNS Server** – Alternative DNS server, to be used in case the first DNS server defined can't supply the needed services.
 - **DNS Suffix** – Set the DNS domain suffix to be used by this system.
- ❑ **Ethernet Speed** – Displays the network interface speed.

Select **Next**.

3. Proxy:

Collaborate Setup 3 of 4

General

Network

Proxy

License

Proxy Address

Proxy User

Proxy Password

< Back

→ Next

Enter your organization proxy server address. For any assistance use your organization's network manager.

4. License:

Collaborate Setup 4 of 4

General


Network

Proxy

License

Activation Code: 95756 Refresh

Activate your Spontania license using the above activation code,
in the URL <http://activation.spontania.com>
Or scan the below QR code from your mobile



Status

Waiting For Web Activation...

< Back

✓ Finish

Activate Spontania license by following the instructions:

1. Open web browser and navigate to <http://activation.spontania.com>.
2. If your company doesn't have a Spontania account, choose 'No' option.

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spontania
Group Video Call & Collaboration

Spontania Activation

Does your company already have Spontania account?

Yes

No

3. Fill the required fields in order to create a new administrator account to activate Spontania license, and press 'Activate'.
4. 'Spontnaia license is activated' message will appear and you can use your Spontania application.

Chapter 3: Configuration

IN THIS CHAPTER

This chapter explains the basic configuration options and includes the following sections:

- Configuring the Audio
- Configuring the Camera
- Configuring Multiple Cameras
- Controlling Multiple Cameras
- Configuring the Display
- Serial Port
- Configuring LAN
- Configuring the Wi-Fi
- Updates

CONFIGURING THE AUDIO

The audio input/output must be configured so that you will be able to hear and be heard properly in videoconferences.

To access the audio settings:

1. Press **OK** on the remote control. The main menu appears.
2. Using the remote control's Navigation arrows, select **Settings> System>Audio**. The Audio Settings window appears.

The screenshot shows the 'System' settings menu with 'Audio' selected. The 'Audio' tab is highlighted in orange. The settings are as follows:

Setting	Value
Audio Input	CHAT 150C Mic Array
Audio Output	SAMSUNG
Microphone Level	Volume slider (microphone icon, minus, bar, plus)
Acoustic Echo Cancellation	Checked (checkbox)

At the bottom of the screen, there are four buttons: 'Back' (with a left arrow), 'OK' (with a checkmark), 'Apply' (with a download icon), and an empty button.

To configure the audio settings:

3. In the Audio Settings window, set the following properties of the selected audio input. USB devices can be used if the system supports external USB hardware.
 - **Audio Input** – Select CHAT 150C Mic Array to be your audio input device.
 - **Audio Output** – Select a playback device from the list
 - **Play** – This button plays a recorded audio for use in setting output levels. Adjust the desired volume level (using the volume keys) for your audio output device.
 - **Microphone Level** – Adjust the microphone sensitivity level in percentage (%)
 - **Acoustic Echo Cancellation** – Select the check box to prevent echo. Disable when echo cancellation is supported by an external device.
 - **Digital Display Audio Delay** – Select the audio delay when audio is being played through a digital display connected to the system through the HDMI port. If the internal sound card or Balanced Audio card is used, the audio delay should be disabled. The default value is 30.

Note: The audio of the COLLABORATE Pro system must be optimized for the outputs used and the room in which it is used. For best audio performance, ClearOne recommends using Balanced Audio or Line output to a mixer or amplifier. HDMI audio to a monitor is also supported, but monitor speakers are usually lower quality.

Optimizing for Balanced and Line Audio Outputs

Connect to either a set of amplified speakers or a mixer using the Line output or Balanced Audio connections. Set the COLLABORATE Pro Volume to 50%. Play the sample audio by pressing the **Play** button. Use the external amplifier or mixer to adjust the volume within the room to a comfortable level.

Afterward, the COLLABORATE Pro audio control can be used to increase/decrease the audio to a desired level during sessions.

Optimizing for HDMI Audio with Beamforming Microphone Array

Using the COLLABORATE Pro with the Beamforming Microphone Array with the HDMI output to monitor speakers requires adjustment for audio levels and echo cancellation.

Volume

After attaching the HDMI output to the monitor, set the COLLABORATE Pro Volume to 50%, then play the sample audio by pressing the **Play** button. Use the monitor audio adjustment to set the volume within the room to a comfortable level. Afterward, the COLLABORATE Pro audio control can be used to increase/decrease the audio to a desired level during sessions.

Delay

The HDMI connection must have a signal delay setting to allow the echo cancellation to operate effectively. Initially, set the Audio Delay in the COLLABORATE Pro **Settings>System>Audio>Digital Display Audio Delay** control to 50 msec. (Range is 0 to 120 msec.) Then, while making a call, adjust delay up or down in 10 msec increments until the audio echo is no longer heard.

4. Select **Apply**.

CONFIGURING THE CAMERA

Before you begin videoconferencing, you need to make sure that the cameras connected to the COLLABORATE Pro are properly configured. Cameras are configured via the Camera Settings window.

To access the camera settings:

1. Press **OK** on the remote control. The main menu appears.
2. Using the remote control's Navigation arrows, select **Settings > System > Camera**.

The Camera Settings window appears.

The screenshot shows the 'System' settings window. On the left is a vertical menu with options: Audio, Camera (highlighted in orange), Display, Serial Port, LAN, Wi-Fi, and Update. The main area displays settings for the selected 'Camera' tab. At the top, 'Source' has two radio buttons: 'HDMI 1' (selected) and 'HDMI 2'. Below this, 'Camera Model' is a dropdown menu showing 'ClearOne'. There are four sliders: 'Color' (with a palette icon), 'Contrast' (with a circle icon), 'Brightness' (with a sun icon), and 'Hue' (with a rainbow icon). Each slider has a minus sign on the left and a plus sign on the right. At the bottom of the settings area is a checkbox labeled 'Allow Far End Camera Control (FECC)' which is checked. At the very bottom of the screen are five buttons: 'Back' (with a left arrow), 'OK' (with a checkmark), 'Apply' (with a downward arrow), 'Defaults' (with a circular arrow), and an empty button.

To configure the camera settings:

1. In the Camera Settings window, select the correct options from the **Source**.
2. Optional: Set the percentage (%) of **Color**, **Contrast**, **Brightness**, and **Hue**. You can leave the default settings of these parameters unchanged.
3. Select the correct option from the **Camera Model**.
4. Select the **Allow Far End Camera Control (FECC)** check box to enable the remote side to control your camera (unavailable when working with SIP).
5. Select **Apply** to apply the changes without leaving this window, or select **OK** (in the GUI) to save the changes and close the Camera Settings window.

CONFIGURING MULTIPLE CAMERAS

The COLLABORATE Pro system can work with two cameras connected. In order to use this functionality, configure it in the Camera Settings menu.

- Configure the main camera as **HDMI 1**.
- Configure the secondary camera as **HDMI 2**.

System

Audio

Camera

Display

Serial Port

LAN

Wi-Fi

Update

Source: ☒ HDMI 1 ☐ HDMI 2

Camera Model: ClearOne

Color:



Contrast:

Brightness:

Hue:

Allow Far End Camera Control (FECC) ☒

Back OK Apply Defaults

If you are in a session and the remote side is using two cameras, select the Far End  button on remote control, and then select the input button  to switch between remote cameras.

CONFIGURING CAMERA CONNECTED TO HDMI VIDEO 1 AND LAPTOP SHARING THRU HDMI VIDEO 2

Connect the main camera to **HDMI input 1** and connect the laptop to **HDMI input 2**

CONFIGURING DUAL CAMERAS CONNECTED TO HDMI 1 AND HDMI 2 AND DATA SHARING THRU DATAPOINT

Connect the main camera to **HDMI input 1** connect the second camera to **HDMI input 2**.
Connect the DataPoint to a free USB 3.0 port.

CONTROLLING MULTIPLE CAMERAS

Connect main camera to HDMI 1 and secondary camera to HDMI 2. There are two options to control both cameras:

1. Connect Camera 1 to COM 1 and Camera 2 to COM 2. In serial port settings choose “Camera Control”.
2. Connect Camera 1 to COM 1. Connect Camera 2 to Camera 1 via VISCA cable. In serial port settings choose “Serial Control”. These settings will turn Daisy Chain Cameras on.

CONFIGURING THE DISPLAY

The display settings determine the method by which video is displayed on the screen. Adjust the display settings depending on the room you are using for videoconferencing and on your distance from the screen.

NOTE: The term “screen” refers to any type of monitor you are using (LED, LCD, and so on).

To access the display settings:

1. Press **OK** on the remote control. The main menu appears.
2. Using the remote control’s Navigation arrows, select **Settings>System > Display**. The Display Settings window appears.

System		
Audio	Display Mode	Single Mode
Camera	Display	Single/Main
Display	Device	HDMI
Serial Port	Resolution	1920x1080
LAN	Display Remote On Main	<input checked="" type="checkbox"/>
Wi-Fi	Keep Aspect Ratio	<input checked="" type="checkbox"/>
Update	Secondary Display Used For Data Only	<input type="checkbox"/>
<div> < Back ✓ OK </div>		

To configure the basic display settings:

1. **Display Mode (Configured automatically)** –

- **Single Mode** – Both videoconference parties are displayed on a single screen.
- **Dual Mode** – Conferences are displayed on two screens.

NOTE: Incoming resolution in dual mode is limited to 1080@30.

- ☐ **Display Remote on Main** – When using multiple monitors, display the remote side on the main display. Uncheck to display the remote on the secondary monitor.
- ☐ **Device and Resolution** – Select an option from the lists.
- ☐ **Keep Aspect Ratio** – Select this option to keep the original aspect ratio on screens that have different aspect ratio.
- ☐ **Secondary Display Used For Data Only** – Select to use secondary monitor only when data is sent / received.

2. Click **OK**.

SERIAL PORT

Configure the COM 2 port. It can be connected to the second camera and control its PTZ or it can be connected to external management device.

To access the serial port settings:

1. Press **OK** on the remote control. The main menu appears.
2. Using the remote control's Navigation arrows, select **Settings>System > Serial Port**. The Serial Port Settings window appears.

System

Audio

Camera

Display

Serial Port

LAN

Wi-Fi

Update

COM 2 Settings:

Serial Mode

Camera Control

Daisy Chain Cameras

Disabled

< Back

✓ OK

⏏ Apply

To configure the serial port settings:

1. **Serial Mode –**

- **Camera control** – Select this option when second camera is connected to HDMI 2 and COM 2 is connected to the camera PTZ control (RS-232 port).
- **Serial Control** – Select this option when COM 2 is connected to external management unit. In this case you can control the second camera PTZ by daisy chain – connect VISCA cable between the first camera RS-232 out and the second camera RS-232 in.

NOTE: Telnet should be enabled when Serial Control is selected.

LAN SETTINGS

In the IP Settings window you can configure TCP/IP networking parameters for COLLABORATE.

To edit system settings:

1. Select **Settings>System>LAN**. The IP Settings window appears.

System	
Audio	Obtain Address From DHCP <input checked="" type="checkbox"/> Ethernet Speed 1000.0 Mbps
Camera	IP Address 172.20.1.44
Display	Subnet Mask 255.255.0.0
Serial Port	Default Gateway 172.20.0.253
LAN	Obtain DNS automatically <input checked="" type="checkbox"/>
Wi-Fi	DNS Server 172.20.0.100
Update	Additional DNS Server 172.20.0.105
	DNS Suffix onltd.cn
<div>Back OK Apply</div>	

2. In the System Settings window, set the following options and parameters
 - ☐ **Obtain Address from DHCP Server** – Select the checkbox to obtain an IP Address from a DHCP server.
 - ☐ **IP Address** – Set the IP Address for this system. If using a DHCP server, the address obtained from the DHCP server is displayed.
 - ☐ **Subnet Mask** – Set the subnet mask number for your network. If using a DHCP server, the address obtained from the DHCP server is displayed.
 - ☐ **Default Gateway** – Set the IP Address of the default gateway router. If using a DHCP server, the address obtained from the DHCP server is displayed.
 - ☐ **Obtain DNS Automatically** – Use the DHCP server to decide your DNS server address. If you do not select Obtain address from DHCP server, fill in the following fields:
 - ☐ **DNS Server** – Set the IP Address of the DNS server. If using a DHCP server, the address obtained from the DHCP server is displayed.
 - ☐ **Additional DNS Server** – Alternative DNS server, to be used in case the first DNS server defined can't supply the needed services.
 - ☐ **DNS Suffix** – Set the DNS domain suffix to be used by this system.
 - ☐ **Ethernet Speed** – Displays the network interface speed.

NOTE: Modify these settings only if they are required in your network.

2. Select **Apply**.

Wi-Fi SETTINGS

You can use “Collaborate Share” feature via external **Wi-Fi** network while your system is located in the corporation LAN network.

To access the Wi-Fi settings:

1. Press **OK** on the remote control. The main menu appears.

System		
Audio	Available Networks	ClearOne <input type="button" value="Refresh"/>
Camera	Connect Automatically	<input checked="" type="checkbox"/> <input type="button" value="Disconnect"/>
Display	Connection Status	Connected
Serial Port	Network Name	ClearOne
LAN	IP Address	10.0.0.12
Wi-Fi	Connection Speed	177 Mbps
Update	Signal Strength	82%

2. Using the remote control’s Navigation arrows, select **Settings>System > Wi-Fi**. The **Wi-Fi** Settings window appears.

To configure the Wi-Fi settings:

1. **Available Network** – List of all available Wi-Fi networks in your range. Select the desired network you want to connect.
2. **Connect Automatically** – Check this option to allow auto connection to the selected network while the network is available.
3. **Connection Status** – Displays the status of the Wi-Fi connection.
4. **Network Name** – Displays the network SSID.
5. **IP Address** – Displays the Wi-Fi network IP address.
6. **Connection Speed** – Displays the connection rate.
7. **Signal Strength** – Displays the Wi-Fi signal strength. For better strength, put you Collaborate close to the router.

Once Wi-Fi was set and connected ,verify that the “Collaborate Share” sender is located with the same Collaborate Pro Wi-Fi network.
Load “Collaborate Share” sender application and select the Collaborate Pro receiver from the list.

NOTE: While connection speed or Signal Strength is low you may encounter low data quality.

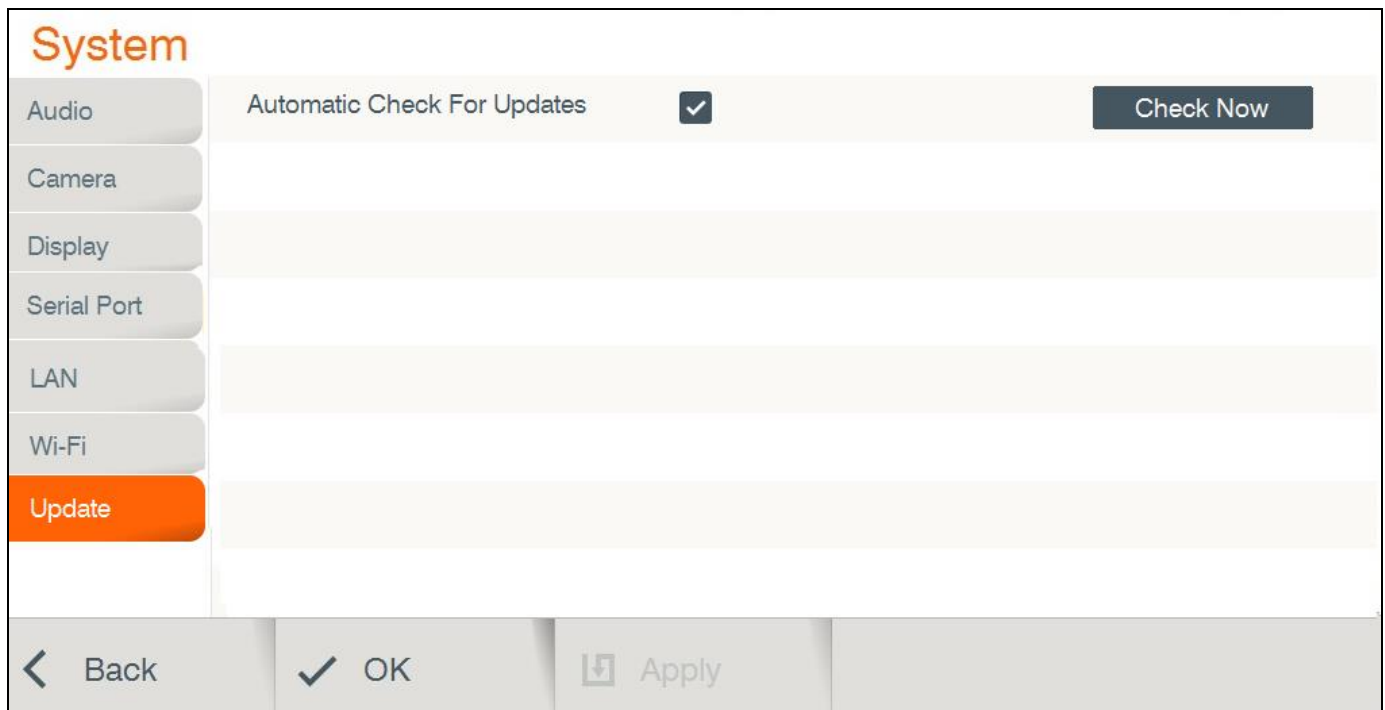
NOTE: For Collaborate Pro 600 and 900, USB Wi-Fi adaptor is required

SOFTWARE UPDATES

Configure automatic software updates or check for updates.

To access the update settings:

1. Press **OK** on the remote control. The main menu appears.
2. Using the remote control’s Navigation arrows, select **Settings>System > Update**.
The Update Settings window appears.



To configure the updates settings:

1. **Automatic Check For Updates** – Choose this option for often update check. If an update is available, you will get a proper message on screen and you can choose to update or not.
2. **Check Now** – Check for updates at this moment. If an update is available, you will get a proper message

Chapter 4: Video Collaboration

IN THIS CHAPTER

This chapter explains the video collaboration basics and options using COLLABORATE Pro, and includes the following sections:

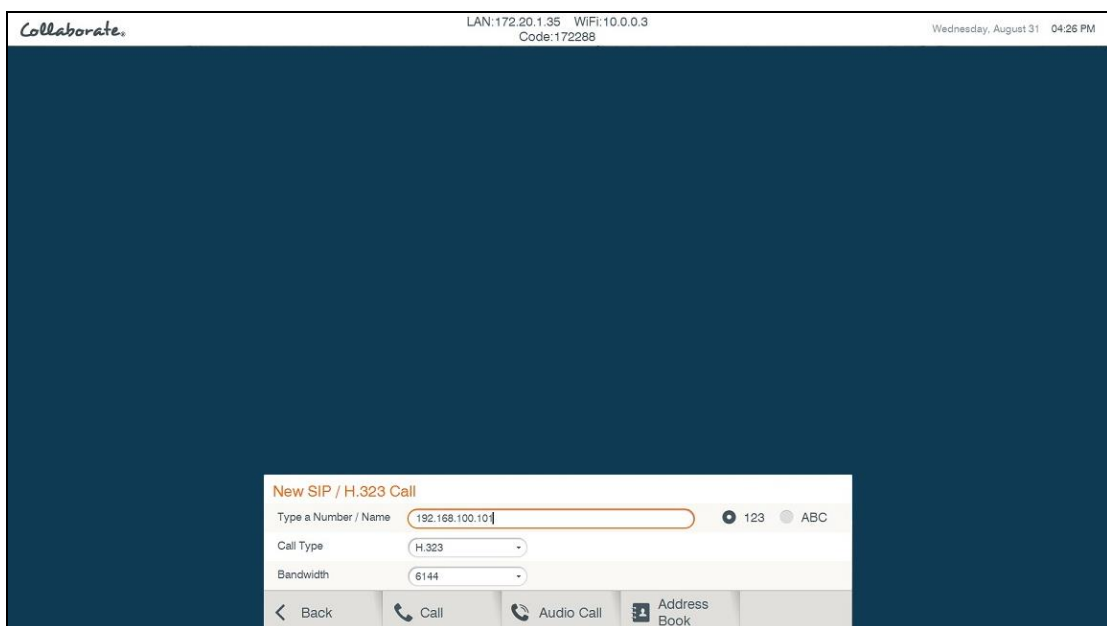
- ☐ Starting Calls
- ☐ Auto-Answering Calls
- ☐ Ending Calls
- ☐ Muting the Video
- ☐ Switching Image Modes
- ☐ Switching Call View Modes
- ☐ Using Picture-In-Picture (PIP) Modes
- ☐ Call State Indications
- ☐ Using Call Tones
- ☐ Recording and Streaming
- ☐ Data Sharing
- ☐ Using Multicasting

STARTING LAN CALLS

You can start a manual call to a network IP Address that you type in the New Call bar.

To start a call using the manual dialer:

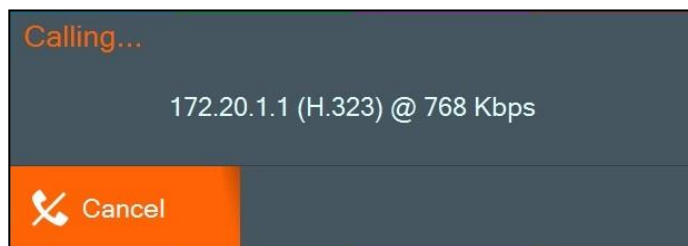
1. Select **Conference > SIP / H.323 Call**. The New Call bar appears.



2. Select the type of call you want to make:
 - ☐ **H.323** or **SIP** – an IP-based call via the connected local network (LAN).
3. In the **Type** a **Number/Name** field, type the **IP Address** to which you want to call. Alternatively, instead of an IP Address, you can also use an Alias, E.164 number, or a DNS Address (if such are defined on your network).
 - ☐ To type numbers, make sure that the **123** option is selected.
 - ☐ To type letters and numbers, make sure that the **ABC** option is selected.
4. Select the maximum bandwidth for the video call and press **Call**. For audio only call press **Audio Call**.

NOTE: Audio only call bandwidth is 64 Kbps.

For video call, you can also press the **Make Call** (green button) on the remote control. The Calling screen appears.



When the call is answered on the far end, the system switches to the Call mode.

AUTO-ANSWERING CALLS

The auto-answer option is found in the Call Settings window (see Call Settings).

When the auto-answer option is not selected and an incoming call is received, a message is displayed on the screen. You can accept or reject the call using the buttons on the remote control or via the screen message.

NOTE: Auto-answering does not apply to MCU calls. (To configure auto-answering in MCU sessions, see MCU Settings.)

ENDING CALLS

You can disconnect the current videoconference call at any time. To

end the current call:

- ☐ On the remote control, press the red **End Call** button,
– or –
- ☐ Select **Conference>Hang Up** in the GUI and then press **OK** on the remote control.

MUTING THE VIDEO

Muting during a videoconference is a preference which is selected via the remote control.

When you press **Mute Video** during a call, the remote side sees the Mute Video BMP image, which indicates that your video source has been mute.

SWITCHING CALL VIEW MODES

Depending on the type of screen and video interface you are using (HDMI/Display Port); a call may be displayed in single, dual or presentation mode.

SINGLE MODE

Single mode presents a single screen showing the output of the local video camera in the Picture-In-Picture (PIP) screen area (see Using Picture-In-Picture (PIP) Modes) and the output of the remote video camera on the main screen area.

DUAL MODE

Two screens: one showing the output of the local video camera, and a second screen showing the output of the remote video camera.

When Secondary Display Used For Data Only is checked, the conference will be in a single mode. Once data is shared, the second monitor will display the data.

NOTE: Incoming resolution in dual mode is limited to 1080@30.

PRESENTATION MODE

When recordings or files are displayed in data sharing mode, the remote video is shown in a PIP area, while the recordings/files are presented on the main screen area.

USING PICTURE-IN-PICTURE (PIP) MODES

When a conference begins, the local video appears on the monitor in a small rectangular inset located in the upper left corner of the larger remote video display. This display mode is called Picture-In-Picture (PIP).

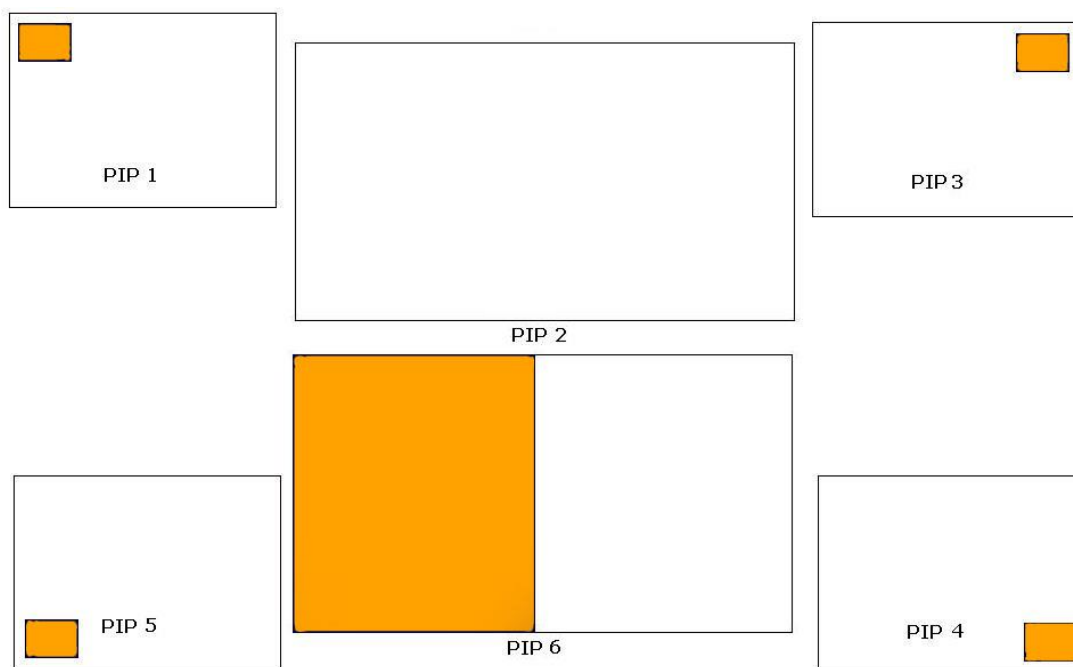
Each time you press the PIP button on the remote control, the PIP image rotates counter-clockwise to the next corner of the screen. Pressing the PIP button after the PIP completes a rotation to all corners then hides the PIP image, and starts again on a subsequent button press.

The default video mode is **PIP 1**, in which the local caller's video is displayed in the small

upper-left corner, while the remote person is viewed in the large area of the screen. The other modes are:


- **PIP 2** – The local caller sees only the remote person.
- **PIP 3** – The local caller is viewed in the small **upper-right** corner, while the remote person is viewed in the main area of the screen.
- **PIP 4** – The local caller is viewed in the small **lower-right** corner, while remote person is viewed in the large area of the screen.
- **PIP 5** – The local caller is viewed in the small **lower-left** corner, while remote person is viewed in the large area of the screen.
- **PIP 6** – The local caller is viewed on half the screen and the remote person is viewed on the other half, also known as side-by-side view.





NOTE: When data is shared, the remote video and the data are displayed side by side on the screen (This option is unavailable while sharing via Collaborate Share option).



CALL STATE INDICATIONS

Various call states are represented by icons on the screen when videoconferencing is taking place.

GUI Icon	Indication
	The current call is encrypted
	The local microphone is muted
	The local speaker is muted
 Far	Far End mode is on (You can control the remote side camera)
	Local network disconnection
 Central	Unsuccessful COLLABORATE Central registration
 Central	Successful COLLABORATE Central registration
	Unsuccessful gatekeeper registration
	Successful gatekeeper registration
	Currently multicasting
	MCU VS layout mode
	Currently recording

GUI Icon	Indication
	Currently streaming
	Currently on Audio session.
	SIP registration.
	SIP Registration failed.

USING CALL TONES

When making calls the call operator can request a Password or DTMF tone to connect.

OPERATOR REQUEST FOR PASSWORD

The Operator can request you to access a conference password to proceed with the call. To

enter a conference password:

- ☐ Use the remote control, and press the numeric pad.

The screen shows DTMF message: "DTMF signal **** sent" representing the numbers pressed on the keypad.

OPERATOR REQUEST FOR TELEPHONE TONE

The Operator can request you to connect using a dial-tone to proceed with the call. To

enter DTMF tone:

- ☐ Use the remote control, dial using the numeric pad.

The screen shows DTMF message: "DTMF signal **** sent" representing the numbers pressed on the keypad.

RECORDING AND STREAMING

The recording and playback functionality allows you to record idle, point-to-point and multipoint (MCU based) sessions, and view them at a later time. You can share the recorded file during a videoconference with the parties connected, through the recording sharing option.

Through the COLLABORATE Pro Web access system, remote users can view all previously recorded sessions and download them for later viewing with Media Player or VLC player. Alternatively, using streaming, remote users can view a live stream of whatever the camera and microphone are currently transmitting.

You can also view any previously recorded session when you are not in a call by selecting the file from the stored recordings list. For more information about the recording settings, see Recording and Streaming Settings.

START RECORDING

You can start recording a call at any point during a call or idle session. To

start recording:



- Select **Recording>Start Recording**. The message "**Recording started**" appears for a few seconds, and the Record icon appears for the duration of the recording.

NOTE: The Record icon () appears on the remote participant's side to indicate that the videoconference is being recorded (legal requirement).

- Press on the recording button on the remote control ()

PAUSE RECORDING

You can pause and resume recording at any point during a call or idle session.
Pause / Resume:

- Select **Recording>Pause Recording**. The recording icon will be changed ()
- Press on the pause button on the remote control ()

To resume recording select **Recording>Resume Recording**.

STOP RECORDING

You can stop an on-going recording whenever you want. To

stop recording:

- Select **Recording>Stop Recording**. The message "**Do you want to stop**

recording?" appears. Press Yes.

- Press on the recording button on the remote control ()

NOTE: When recording in idle mode (not during a videoconference), you can stop the recording by pressing the End Call button on the remote control. A confirmation message appears and requires you to select Yes.

VIEW RECORDING

You can view recordings in either of the following ways:

- Via the Web interface
- Browse the locally saved recordings by selecting **Recording> View Recordings**.

NOTE: You can start recording on idle mode. In order to record video and shared data check 'Record And Stream Data' in recording settings.

Using The Media Controllers

You can control the player by using remote control player controllers when watching a recording on idle mode.

START STREAMING

Session streaming allows any remote system with Media Player or VLC player applications to view streaming from the COLLABORATE Pro system.

To start streaming to remote users:

- Select **Streaming>Start Streaming**. The message "Streaming Started" appears for a few seconds, and the Streaming Icon appears for the duration of the streaming.


NOTE: Refer to Web Access and Management for information on recording and streaming via the Internet.

NOTE: You can start streaming on Idle mode. In order to stream video and shared data check 'Record And Stream Data' in Recording settings.

- Press on the streaming button on the remote control ()

STOP STREAMING

You can stop the streaming when it is no longer needed. To stop streaming:

- Select **Streaming>Stop Streaming**. The message "**Do you want to stop Streaming?**" Press Yes.
- Press on the streaming button on the remote control ()

NOTE: When streaming in idle mode (not during a videoconference), you can stop the streaming by pressing the End Call button on the remote control. A confirmation message appears and requires you to select Yes.

VIEW STREAMING

You can view the streaming in either of the following ways:

- From the COLLABORATE Pro Web management application (see Web Access and Management) by clicking **View Stream** button on the left menu. This takes you to a page with the proper media player embedded in the webpage, displaying the ongoing session.
- To watch WMV streaming on your computer, open Windows Media Player and press Ctrl+U and enter the following: `http://IP_ADDRESS:PORT` where IP_ADDRESS is the unit IP and the port is the streaming port (Default value is 12100).
- To watch MP4 streaming on your computer open VLC player. In **Media>Open URL from clipboard** enter to following: `rtsp://IP_ADDRESS` where IP_ADDRESS is the unit IP.

NOTE: In order to watch MP4 streaming, a VLC player should be installed on your computer.

DATA SHARING

Data Sharing can be accessed via the menu or via **Data** on the remote control. Data Sources are selected inside the Presentation menu. Press **Data** a second time to stop the data sharing.

CHOOSING THE DATA SOURCE

In order for the system to recognize data sources, you need to be connected to a USB flash drive, a laptop, Collaborate share running on your PC, or have recorded files saved locally in your system.

To choose a data source:

1. Select **Presentation** on the main menu. The Data Sharing menu opens.
2. Depending on the connected data sources, select either **HDMI** or **USB** or **DataPoint** or **Wireless** (if available).
3. Select **Share Recording**, to share your recorded file.

CONNECTING TO A PC

Laptop computers can be connected to the COLLABORATE Pro using one of two methods:

1. Connect the laptop to HDMI Input.
2. Connect the laptop using a DataPoint device

When you select HDMI as data source, the screen switches to display the data on the screen.

CONNECTING A USB FLASH DRIVE

You can view and share files that are stored on a portable USB flash drive.


To view and share files from a USB flash drive:

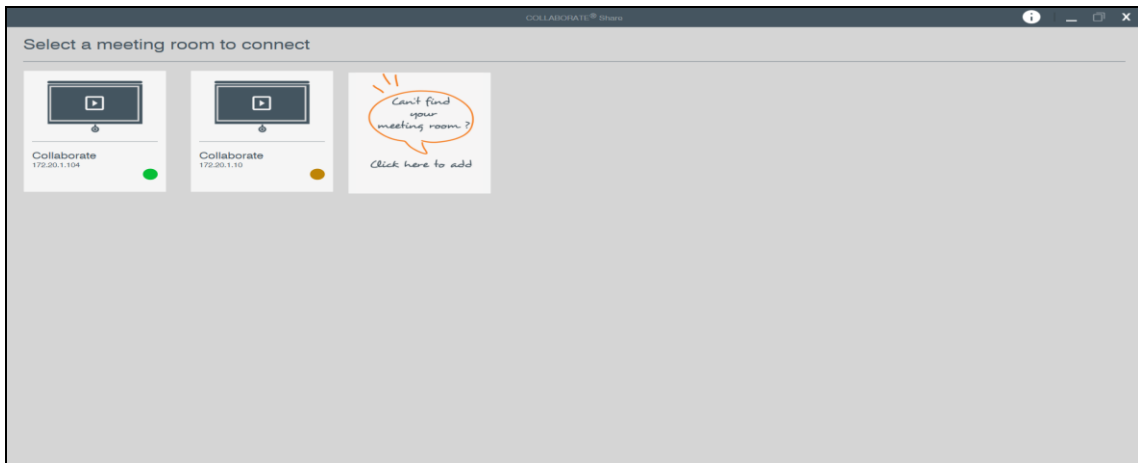
1. Insert a USB flash drive to one of the COLLABORATE Pro USB ports. The message "**USB device inserted**" is displayed.
2. Select **Presentation>USB**. The File Selection window appears.
4. Select the file you want and then press **OK** on the remote control. The following files are supported: *.jpg, *.jpeg, *.gif, *.png, *.tiff, *.tif, *.bmp, *.wmf, *.mpg, *.mpeg, *.wmv, *.mp4, *.avi, *.pdf, *.pps, *.ppt, *.doc, *.rtf, *.xls, *.xlsx, *.pptx, *.ppsx and *.docx.
5. Select **Open**. The file is displayed. If the file is opened during a videoconference, it is shared with all the viewers.

SHARING WIRELESS

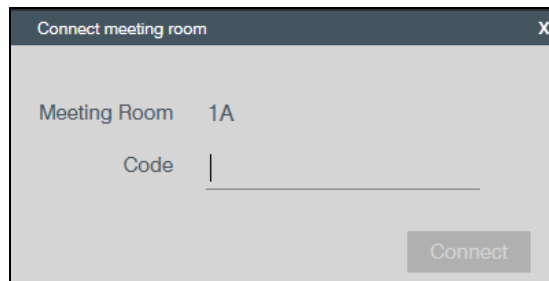
You can view and share your PC desktop or any open application via network using Collaborate Share feature. To define wireless settings, please follow the Presentation settings.

To view and share wireless:

1. Download Collaborate Share application from the web interface (More information in web section).
2. Ensure that the computer you are going to be using is connected to the network. Your computer can be connected to corporation's network or to external Wi-Fi network.
3. Start "Collaborate Share" Software by double-clicking on the desktop Icon .



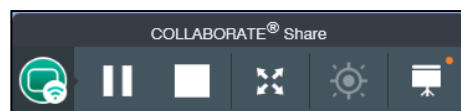
2. Select a meeting from the meeting list and enter code number if required.











3. Choose content to be shared between desktop and all available applications.
4. Select Presentation>Wireless. Wireless data sharing is starting.

Collaborate Share CONTROLLERS

While wireless is shared, you can manage your sharing from "Collaborate Share" controllers.



Button Image	Button Name	Command
	Pause	Pause the current share
	Play	Resume the paused shared
	Full view	Switch the Collaborate share to full view
	Compact view	Switch the Collaborate share to normal view
	Spotlight	When several “Collaborate Share” are connected to the system, use this icon to move the chosen stream into the main area
	Display	When several “Collaborate Share” are connected, Use this icon to change the displayed layout
	Layout	“Collaborate share” layout option: Mosaic / Full Screen / Preview
	Dual display	When two monitors are connected to the unit, You can also choose which monitor will display the data.

You can also use “Collaborate Share” application while it is connected to Wi-Fi network and the Collaborate Pro is connected to the corporation network.
(Please refer to Wi-Fi settings page number 23)

DATA SHARING ON IDLE MODE

It is possible to share data on idle. Connect PC \ Camera to HDMI or USB drive or DataPoint or Wireless sharing, and share the desired data. You can press ‘PIP’ button on the remote control in order to see your data and your main camera side-by-side.

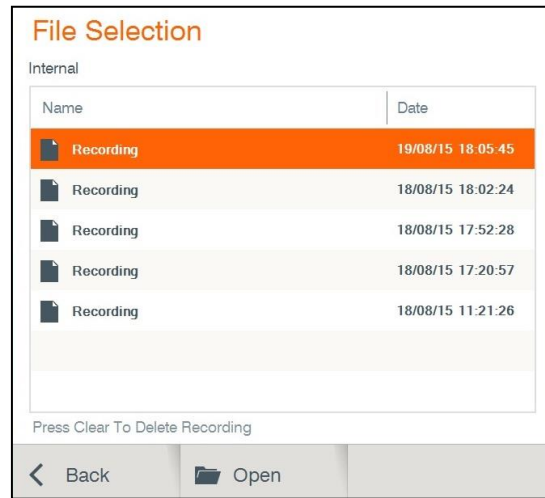
NOTE: PIP won't be appeared, during Collaborate share on idle.

VIEWING RECORDINGS

Recordings can be viewed when the system is idle. When opened during a videoconference, recordings are shared.

To view recorded files:

1. Select **Recording>View Recordings**. The Document Selection window appears.



2. Select the recorded file you want and then press **OK** on the remote control.
3. Select **Open**. The file is displayed and if opened in a videoconference, it is shared with all the viewers.

NOTE: To stop sharing the opened file, press Back on the remote control, or select Stop Presentation from the presentation menu.

NOTE: You can control the player by using remote control player controllers when watching a recording on idle mode.

SHARING DATA WITH AUDIO

When sharing a PC or a movie file from USB flash drive, Collaborate Pro is mixing the audio channels into one channel so the data audio as well as unit microphone could be heard. During the sharing, the volume buttons control the **media volume** (PC or movie) on the local side and on the remote side.



USING MULTICASTING

Session multicasting allows you to multicast your session using the multicasting networking transport technology, which allows users to send a video stream that can be received by multiple recipients, all listening on a single multicast address. Multicasting a session from your COLLABORATE Pro allows numerous passive viewers to view the session. This is typically used at lectures, or any session that passive viewers can benefit from. Multicast sessions can be viewed by all ClearOne endpoints, the free ClearOne multicast viewer, and the Apple QuickTime viewer.

You can join a multicast call as a passive participant. You can hear and see the call, but you cannot contribute to it.

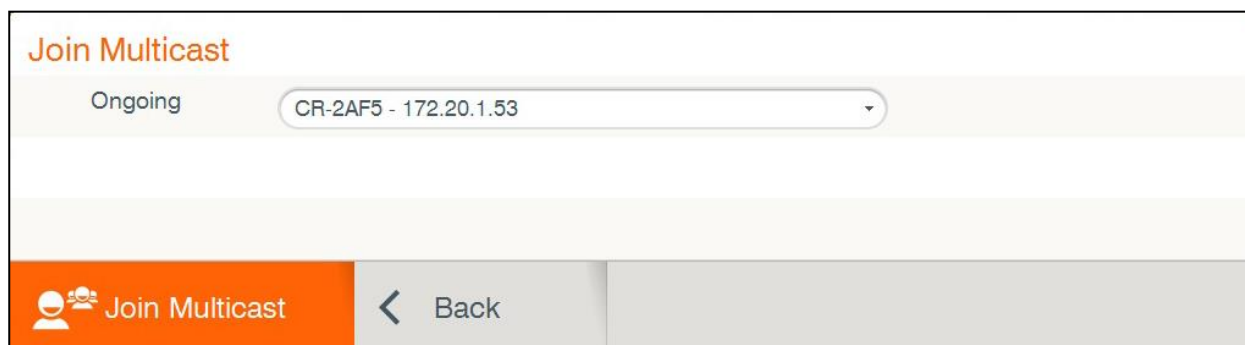
SETTING UP MULTICAST CALLS

See Multicast Settings.

JOINING A MULTICAST CALL AS A PASSIVE PARTICIPANT

To join a multicast:

1. Press **OK** on the remote control. The main menu appears.
2. Select **Streaming>Join Multicast** on the main menu. The Join Multicast window appears.



3. Select a multicast from the **Ongoing** list and press **Join Multicast**.

STARTING/STOPPING A MULTICAST CALL

To stop or start a multicast:

1. Press **OK** on the remote control. The main menu appears.
2. Select **Streaming> Start (or Stop) Multicast**.

NOTE: You can start multicasting on Idle mode. In order to multicast video and shared data select 'Video And Presentation' in Recording settings.

Chapter 5: Quick Dialing Methods

IN THIS CHAPTER

This chapter describes the different quick dialing methods that are available in COLLABORATE Pro, and includes the following sections:



- Using the Contacts
- Using the Recent Calls
- Using Online Directories
- Using Spontania Contacts

USING THE CONTACTS

The Contacts enables you to make calls to addresses stored on the local system. You can add frequently used addresses to the Contacts.


USING THE CONTACTS VIA THE REMOTE CONTROL

You can select the Contacts using the remote control. To select the Contacts via the remote control:

1. On the remote control, press **Phone Book** (). The Contacts window appears.
2. In the Contacts tab, select the number to dial, and then press **Make Call** button () on the remote control.


USING CONTACTS VIA THE COLLABORATE Pro GUI

You can display the Contacts using the COLLABORATE Pro GUI menus. To select the Contacts via the COLLABORATE Pro GUI:

1. Select **Conference>Contacts**. The Contacts window appears (use the left arrow button to skip to the left tabs).
2. In the Contacts tab, select the number to dial, and then press **Make Call** button () on the remote control.

USING THE CONTACTS VIA THE NEW CALL BAR

You can select the Contacts from the New Call bar. To select the **Contacts** via the **New Call** bar:

1. Select **SIP / H.323 Call** on the main menu. The **New Call** bar, appears.
2. In the **New Call** bar, select **Address Book**. The Contacts window appears. (Use the left arrow button to skip to the left tabs)
3. In the Contacts tab, select the entry to dial, and then press **Make Call** button  on the remote control.

ADDING ENTRIES TO THE CONTACTS

You can add frequently used addresses to the Contacts list from where calls can be made directly.

To add a new contact to the Contacts list:

1. In the Contacts, select **Add** and press **OK**. The Name/Address bar opens.
2. Type in the new contact's name and IP Address, and then select **Save**. The new contact is added to the Contacts list.

NOTE: You can also set the dialing method (H.323 or SIP) and the bandwidth that you want to use specifically for the contact that you add.

EDITING ENTRIES IN THE CONTACTS

You can edit frequently used numbers already in the Contacts list and save them for repeated use.

To edit a contact's details in the Contacts list:

1. In the Contacts list, select the entry you want to edit and then press **OK** on the remote control.
2. Select **Edit** in the GUI. The Name/Address bar opens.
3. Edit the contact name and IP Address, and then select **Save**.

NOTE: If necessary, you can change the dialing method (H.323 or SIP) and bandwidth that are used specifically for the contact that you edit.

DELETING ENTRIES FROM THE CONTACTS

You can delete and thus manage Contacts entries when they are no longer in use. To delete a contact from the Contacts:

1. In the Contacts, select the contact you want to delete, select **Delete** and then press **OK**. The following message is displayed: "Are you sure?"
2. Select **Yes** to delete, or **No** to cancel.

USING THE RECENT CALLS

Log entries are automatically logged to the Recent Calls when an outgoing call is made or when an incoming call is received. You can add log entries to the Contacts, or delete them from the Recent Calls log.

NOTE: Log entries cannot be edited.

USING THE RECENT CALLS VIA THE REMOTE CONTROL

To select the Recent Calls via the remote control:

1. On the remote control, press **Recent Calls** () – or – on the Main Menu, select **Conference>Recent Calls**. The Recent Calls window appears.
2. Select the entry and press **Dial**.

DISPLAYING THE RECENT CALLS FROM THE CONTACTS

To display the Recent Calls via the Contacts:

- ☐ In the Contacts, select **Recent Calls** by pressing up with the Navigation arrows and scrolling up.

ADDING A RECENT CALLS ENTRY TO THE CONTACTS

You can add entries for Recent Calls to the Contacts for reuse later. To add Recent Calls entry to the Contacts:

1. In the Recent Calls, select the entry you want to add to the Contacts and then press **OK** on the remote control.
2. Select **Add**. The Name/Address bar appears.
3. Edit in the contact Name or Address if needed, and then select **Save**. The log entry is added to the Contacts.

CLEARING THE RECENT CALLS

You can delete and thus manage Recent Calls when you do not require them any longer. To delete a Recent Calls or clear the entire log:

1. In the Recent Calls window, select which log entry to delete.
2. Select **Delete** to delete just the selected entry, or **Clear All** to delete all entries, and then press **OK**. The following message is displayed when clearing all: **"Are you sure?"**
3. Select **Yes** to delete, or **No** to cancel.

USING DIRECTORY

The Directory is an external directory which can be used for calling. If you are registered in the Directory, you can view the Directory in the Contacts under the Directory tab.

ACCESSING A DIRECTORY VIA THE REMOTE CONTROL

To access the Contacts via the remote control:

1. On the remote control, press the Contacts button. The Contacts opens.
2. Select the Directory tab, and on the number to dial press **Dial**.

ACCESSING THE DIRECTORY VIA THE CONTACTS

To access the Directory via the Contacts:

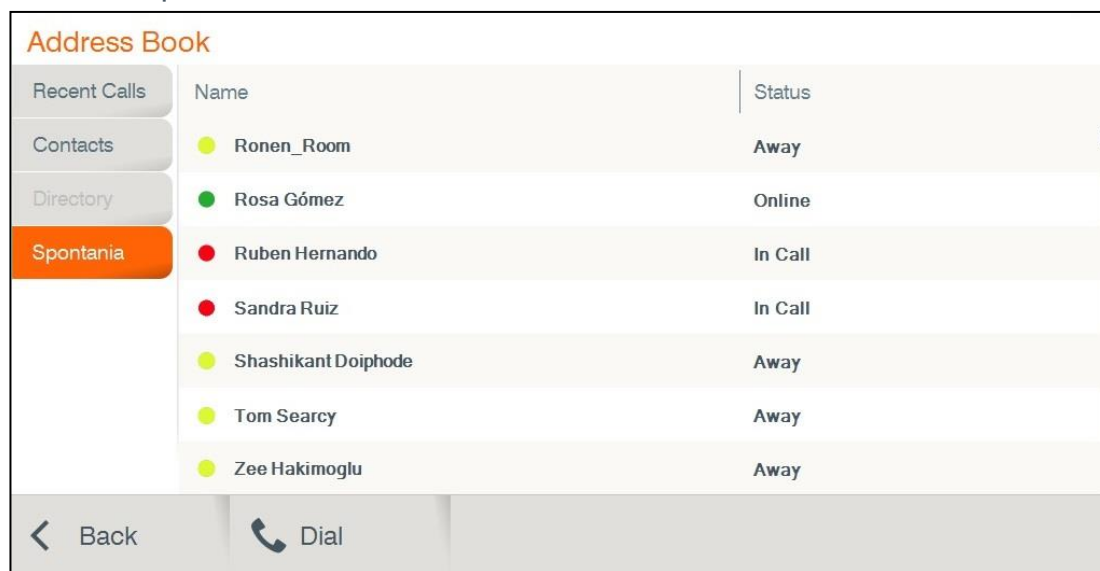
1. In the Contacts, select **Directory** by pressing down with the Navigation arrows.
2. Select the Directory tab, select the number to dial and press **Dial**.

USING SPONTANIA CONTACTS

When your system is registered to Spontania server (See Spontania settings), all users that are registered to this server will appear in Spontania contacts list.

To access the Contacts via the remote control:

1. On the remote control, press the Contacts button. The Contacts opens.
2. Select the Spontania tab.



3. Select Online / Away contact and press **Dial**.

Chapter 6: Advanced Settings

IN THIS CHAPTER

This chapter covers the advanced settings for COLLABORATE Pro, and includes the following sections:

- Admin Settings
- Directory Properties
- H.323 Protocol Settings
- SIP Protocol Settings
- Multicast Settings
- Firewall and NAT Settings
- Spontania Settings

ADMIN SETTINGS

To configure Admin settings:

1. Select **Settings>Advanced>Admin**. The Admin Settings window appears.

Advanced				
Admin	Enable Adaptive Bandwidth Adjustment	<input checked="" type="checkbox"/>	Encryption Mode	Automatic
Directory	Enable H.239	<input checked="" type="checkbox"/>	MTU (100-1500)	1200
H.323	Force FEC	<input type="checkbox"/>	Maximum Outgoing Bandwidth	Unlimited
SIP	Enable Audio Codec AAC-LD	<input checked="" type="checkbox"/>	Maximum Incoming Bandwidth	Unlimited
Multicast	Enable Audio Codec G722.1 Annex C	<input checked="" type="checkbox"/>		
Firewall	Enable H.264 High Profile	<input checked="" type="checkbox"/>		
Spontania				

Back OK Apply Restore Defaults

2. In the Admin Settings window, set the following options and parameters.
 - ☐ **Enable adaptive bandwidth Adjustment** – Enables videoconferences to proceed at reduced bandwidth if the network is congested. Deselecting this option maintains a constant quality to the session, but it may cause network problems.
 - ☐ **Enable H.239** – Enables data sharing protocols.
 - ☐ **Force FEC** – Force Forward Error Correction (FEC) – Forwards an error-correction code instead of automatically adjusting the bandwidth.
 - ☐ **Enable Audio Codec AAC-LD:** – Audio Codec: audio compression format designed to combine the advantages of perceptual audio coding with the low delay necessary for two-way communication.
 - ☐ **Enable Audio Codec G722.1 Annex C** – Audio Codec: wide-band compression algorithm provides higher-than-toll quality speech. The codec operates between a wide-band, 50Hz to 7kHz signal range, at the G.722.1 standard bit rate of 24kbps and 32kbps. GAO's G.722.1 algorithm is in the form of fixed-point arithmetic and is based on the Modulated Lapped Transform (MLT).
 - ☐ **Enable H.264 Profile** – When selected, enables the system to operate in high profile mode.
 - ☐ **Encryption mode** – Encryption Mode - Calling securely requires setting the encryption protocol or using defaults which include automatic encryption. Alternatively, you can

disable the encryption if it is not needed. Calls that are made using encryption will have a lock icon on the right-bottom corner of the screen.

- **Automatic** –The default option; enables encryption automatically.
- **AES** –An encryption algorithm included in the H.235 security protocol.
- **No Encryption** –No encryption will be used.
- **MTU (100–1500)**– Set the designated MTU (Maximum Transfer Unit) value. The default value is 1200. Applies only to RTP streams.
- **Maximum Outgoing Bandwidth** – Maximum upload bandwidth (0 for unlimited).
- **Maximum Incoming Bandwidth** – Maximum download bandwidth (0 for unlimited).

3. Press **Restore Defaults** to reset system into factory settings.

DIRECTORY PROPERTIES

Online directories are lists of contacts (such as Internet Location Server, or ILS) whose videoconferencing systems are online and registered with that directory. If your system is not registered with a COLLABORATE Central[®], the Directory Settings provide a way to register with a Directory.

NOTE: Directory settings are available only in COLLABORATE Pro systems that are not managed by a ClearOne COLLABORATE Central.

To configure the Directory settings:

1. Select **Settings>Advanced>Directory**. The Directory Settings window appears.

The screenshot shows the 'Advanced' settings window with the 'Directory' tab selected. The window has a sidebar on the left with tabs: Admin, Directory (selected), H.323, SIP, Multicast, Firewall, and Spontania. The main area contains the following settings:

Advanced	
Admin	Enable Online Directory Registration <input type="checkbox"/>
Directory	Server Type <input type="text" value="Exchange Server"/>
H.323	Server Address <input type="text"/>
SIP	Port <input type="text" value="389"/>
Multicast	Path <input type="text"/>
Firewall	Server Domain <input type="text"/>
Spontania	User Name <input type="text"/>
	Password <input type="text"/>

At the bottom, there are three buttons: Back (with a left arrow), OK (with a checkmark), and Apply (with a download icon).

2. In the Directory Settings window, set the following options and parameters
 - **Enable Directory Registration** – When selected, this checkbox activates the rest of the fields in this window and enables the Directory connection registration.
 - **Server Type** – Select the Directory server type. If you are not sure which type to

select, consult with your system administrator. An LDAP (Lightweight Directory Access Protocol) server is usually used.

- ❑ **Server Address** – The server's IP Address. If an IP is not entered, the following message appears: "You must enter server address in order to continue."
- ❑ **Port** – Number of the port through which the connection to the server is established.
- ❑ **Path** – Folder in which your user information is stored, as created on the Online Directory.
- ❑ **Server Domain** – Server's domain name for the Directory.
- ❑ **User Name** – Your user name as defined on the Directory server.
- ❑ **Password** – Your access password as defined on the Directory server.

3. Select **Apply**.

NOTE: In the Standalone/Gatekeeper mode, either the ILS or iPlanet servers should be installed for the directory. Consult with your system administrator regarding the installation/configuration of these servers.

Server Type	Description	Prerequisites
ILS server	Site Server ILS is a service used for publishing H.323 videoconferencing and telephony users and IP multicast conferences on the network.	System administrator configuration
iPlanet server	Contains lists of people and resources. Administrators can manage a single user- repository for their organization that can be used by multiple applications to both authenticate and retrieve stored information for users such as access levels and user profiles.	System administrator configuration

H.323 PROTOCOL SETTINGS

For point-to-point and multipoint videoconferences, the H.323 protocol standard is used for call signaling and control, video/audio transport and control, and bandwidth control.

COLLABORATE Pro utilizes H.323 to transport video/audio via DNS and NAT addressing, and to communicate/interact with either a COLLABORATE Central server or a standard gatekeeper server, one of which you can choose to work with in order to gain better performance and flexibility in point-to-point and multipoint videoconferences.

NOTE: For more information about ClearOne's COLLABORATE Central server, its installation and configuration, refer to the COLLABORATE Central User Guide.

To configure a connection to a COLLABORATE Central server or to a gatekeeper server:

1. Select **Settings>Advanced>H.323**. The H.323 Settings window appears.

Advanced

Admin ☒ None ☐ Collaborate Central ☐ Gatekeeper

Directory Server Address

H.323 User Name

SIP User Number

Multicast Password

Firewall Connection Mode

Spontania Tunneling Port

RTP Ports From To

< Back ☒ OK ☐ Apply

2. In the H.323 Settings window, set the following options and parameters:
 - ☐ **None** – Keep this option selected (selected by default) if you do not want to use a COLLABORATE Central server or a gatekeeper.
 - ☐ **COLLABORATE Central** – Select this option if you want COLLABORATE Pro to communicate/interact with a COLLABORATE Central server and utilize its advanced features. If selected, enter the required details in the following fields:
 - ☐ **Server Address** – Enter the IP Address of the COLLABORATE Central server.
 - ☐ **User Name** – Enter the user name used to log into the COLLABORATE Central server.
 - ☐ **User Number** – Enter your user number used for identification on the COLLABORATE Central server. If not entered, the COLLABORATE Central server will automatically generate a number.
 - ☐ **Password** – Enter the password used to log into the COLLABORATE Central server.
 - ☐ **Gatekeeper** – Select this option if you want COLLABORATE Pro to communicate/interact with a gatekeeper server. If selected, enter the required details in the following fields:
 - ☐ **Server Address** – Enter the IP Address of the gatekeeper server.
 - ☐ **User Name** – Enter the user name used to log into the gatekeeper server.
 - ☐ **User Number** – Enter the user number used for identification on the gatekeeper server.
 - ☐ **Password** – Disabled when working with a gatekeeper because gatekeeper authentication is currently not supported.
 - ☐ **Connection Mode** – Select the protocol you want to use to connect your call.

- **H.323** - This selection should be selected manually for LAN network connections only when the connection type is known.
- **H.460** - This selection should be selected manually for network connections over Firewall/NAT only when the connection type is known.
- **Tunneling (not available when working with a gatekeeper)** - This selection should be selected manually for ClearOne Proprietary Tunneling. The default tunneling port is configured by the System Administrator (see NetPoint/ COLLABORATE Central Administration Configuration Manager).

NOTE: Changing this setting causes COLLABORATE Pro to reload.

- **RTP Ports** – In the two boxes, set the RTP range:
 - **From** – Enter the minimum RTP value.
 - **To** – Enter the maximum RTP value.

3. Select **Apply**.

NOTE: In COLLABORATE Central mode, the system administrator should configure the LDAP settings for COLLABORATE Central on the server side.

To verify that COLLABORATE Central mode is active:

1. Press **Status** on the remote control and check in the displayed information that a COLLABORATE Central icon appears.
2. Select **Settings>Advanced>H.323** and check the displayed information.

The New Call IP number shows the extension number that the system received when initiating COLLABORATE Central mode, which is the ID number.

WORKING IN COLLABORATE CENTRAL MODE

In a point-to-point call and when COLLABORATE Central mode is active, you can add another participant to the call without hanging up, i.e. – the call continues while the additional participant is being invited.

To add participants to the call in COLLABORATE Central mode:

1. Select **Conference>Invite**. The Invite call window is displayed.

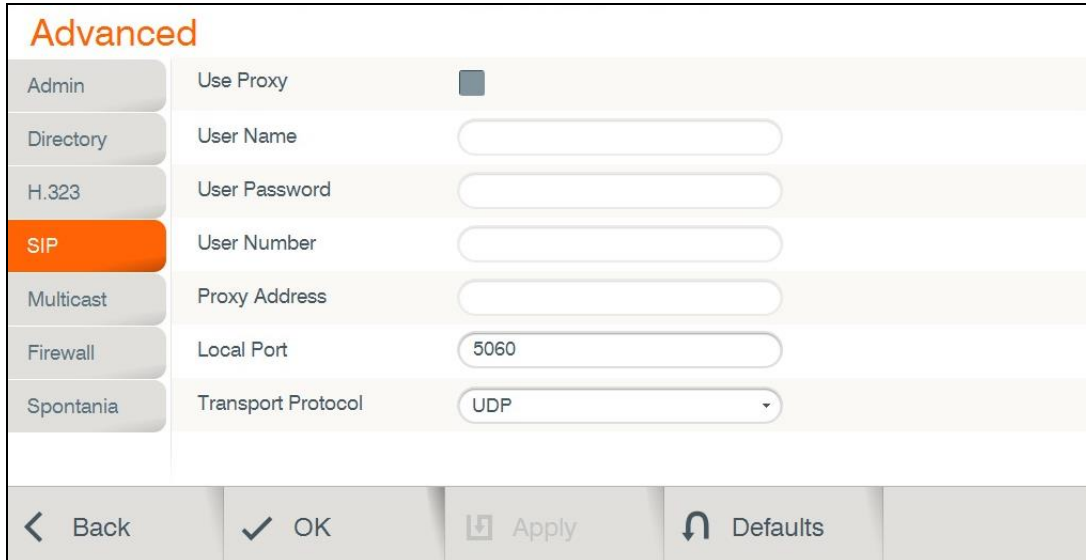
NOTE: The COLLABORATE Central >Invite option is available on the menu only when COLLABORATE Central mode is active.

2. Type in the participant COLLABORATE Central alias/IP number, and select **Invite**. The call is connected

SIP PROTOCOL SETTINGS

SIP is a common communication signaling protocol for VoIP. To configure SIP settings:

Select Settings>**Advanced**>**SIP**. The SIP Settings window appears.



The screenshot shows the 'Advanced' settings window with the 'SIP' tab selected. The window contains a sidebar with tabs: Admin, Directory, H.323, SIP (highlighted), Multicast, Firewall, and Spontania. The main area displays the following settings:

Setting	Value
Use Proxy	<input type="checkbox"/>
User Name	<input type="text"/>
User Password	<input type="password"/>
User Number	<input type="text"/>
Proxy Address	<input type="text"/>
Local Port	<input type="text" value="5060"/>
Transport Protocol	<input type="text" value="UDP"/>

At the bottom, there are five buttons: Back, OK, Apply, Defaults, and a fifth button with a circular arrow icon.

2. In the SIP Settings window, set the following options and parameters:

- ☐ **Use Proxy** – Use a proxy server or as stand alone.
 - **User Name** – The user name as configured in the proxy server (proxy mode).
 - **User Password** – The user password as configured in the proxy server (proxy mode).
 - **Proxy Address** – Proxy server IP
- ☐ **Local Port** – The SIP port on your computer (the standard is 5060).
- ☐ **Transport Protocol** – Select the desired protocol (TCP or UDP).

3. Select **Apply**.

MULTICAST SETTINGS

Session multicasting allows you to broadcast your session using the multicasting networking transport technology, which allows users to send a video stream that can be received by multiple recipients, all listening on a single multicast address. Multicasting a session from your COLLABORATE Pro allows numerous passive viewers to view the session. This is typically used at lectures, or any session that passive viewers can benefit from. Multicast sessions can be viewed by all ClearOne endpoints and the Apple QuickTime viewer.

The Multicast Settings window allows you to define how multicast sessions are initiated by COLLABORATE Pro.

To access the multicast settings

1. Select **Settings>Advanced>Multicast**. The Multicast Settings window appears.

Advanced				
Admin	Multicast IP Address	239.20.1.52	Time To Live	5
Directory	Bandwidth	768	Announcement Rate	10 Seconds
H.323	Video Format	H.264	Refresh Video Rate	5 Seconds
SIP	Video Port	36100		
Multicast	Video Resolution	720p		
Firewall	Audio Format	AAC-LD 64K		
Spontania	Audio Port	18100		
	Multicast Name	CR-2A35 - 172.20.1.52		
<div>Back OK Apply Defaults</div>				

2. In the Multicast Settings window, set the following options and parameters
 - ❑ **Multicast IP Address** – IP Address and gateway. The IP is dynamic according to unit's IP. The first subgroup of the IP format (AAA.BBB.CCC.DDD) is set to 239 according to the standard. You can change it to any value from 224 to 239, and you can also change the rest of the sub groups (not recommended for multicast communications).
 - ❑ **Bandwidth** – Maximum bandwidth (in Kbps) allowed for outgoing multicast streams.
 - ❑ **Video Format** – The digital encoding format using during the multicast transmission; by default is set to H.264.
 - ❑ **Video Port** – Number of the port through which the video multicast passes.
 - ❑ **Maximum Video Resolution** – Select the required video resolution from the drop-down list.
 - ❑ **Audio Format** – The Audio codec responsible during the transmission; by default is set to AAC-LD.
 - ❑ **Audio Port** – Number of the port through which the audio multicast passes.
 - ❑ **Multicast Name** – The identifying name of the multicast.

- ❑ **Time to Live** – The number of router hops allowed.
- ❑ **Announcement Rate** – SDP announcement rate in seconds.
- ❑ **Refresh Video Rate** – The video image refresh rate in multicast streams; an interval of 5 seconds is set by default.

3. Select **Apply**.

RECORD COLLABORATE PRO INTO STANDARD NAS

You can record from the COLLABORATE Pro to a Standard Network Attached Storage (NAS).

1. Verify that the recording destination PC /server workgroup is WORKGROUP (under advanced system settings).
2. Create new folder in destination PC
3. Right-click on the folder/drive that you wish for sharing the recording and select **Properties**.
4. Select the **Sharing** tab and click on **Advanced Sharing...**
5. Select the **Share this folder** box and enter a share name for it.
6. Click on permissions, mark the group entry "Everyone" and check the **network permissions** checkbox: **Read**, **Change** and **Full control**. Click **OK**.
7. In the sharing tab, click on **Share**. In the text field choose everyone and click **Add**. Set the permission level of everyone to **Read/Write**.
8. Right-click on the folder and select **Properties** again.
9. Select the tab "Security" and click on **Edit..**", followed by **Add....**
10. In this window, enter "everyone" into the empty field at the bottom and click on **OK**.
11. Examine the permissions for "Everyone" and make sure they are all set correctly. If everything is in order, close all windows with **OK**.
12. Open your control panel and then open the "**Network and Sharing Center**".
13. Click on **Change advanced sharing settings**.
14. Look for your active profile at the top, expand it (if it isn't already) and scroll down to the **Password protected sharing** option.
15. Select the **Turn off password protected sharing** option and click on **Save changes**. Be advised that this will make all the shared folders readily accessible for anyone inside your home network.
16. In COLLABORATE Web, open **recording settings** tab (Settings / General /Recording).
17. Uncheck the default check box and enter the folder path: \\destination IP \ folder name (e.g. \\172.20.1.78\Collaborate).
18. Start recording

FIREWALL SETTINGS

The Firewall Network Settings contain your system's identification configuration on the local network.

NAT helps protect a LAN from exposure to unwanted traffic by providing one single external address to remote users. NAT uses a system of local and external addresses to hide a LAN's users from other networks. A NAT server translates local parties' addresses to an external address, which is then used to identify the local party to remote parties. Therefore, remote parties use this external address to call the local party, without knowing its actual local address.

To access Firewall/NAT Settings:

1. Select **Settings>Advanced>Firewall**. The Firewall window appears.

Advanced		
Admin	Enable DNS Address	<input type="checkbox"/>
Directory	NAT Mode	Disabled
H.323	NAT Address	
SIP	Use HTTP Proxy	<input type="checkbox"/>
Multicast	Proxy Address	
Firewall	Proxy Port	8080
Spontania	Send Media As HTTP	<input type="checkbox"/>

Back OK Apply

2. In the Firewall window, set the following options and parameters:

- ☐ **Enable DNS Address** – Allows the use of DNS for outgoing calls to other parties by a defined computer name.
- ☐ **NAT Mode:**
 - **Disabled** – Callers to the organization LAN are not identified.
 - **Manual** – Enter your external IP Address. The NAT device maps this to your internal extension number.
 - **Automatic** – The NAT device recognizes your IP Address and maps it to your internal extension number when you dial out through your organization LAN.
- ☐ **NAT Address** – If your organization uses NAT when communicating with parties in another LAN or WAN, type the external address for your videoconferencing device.

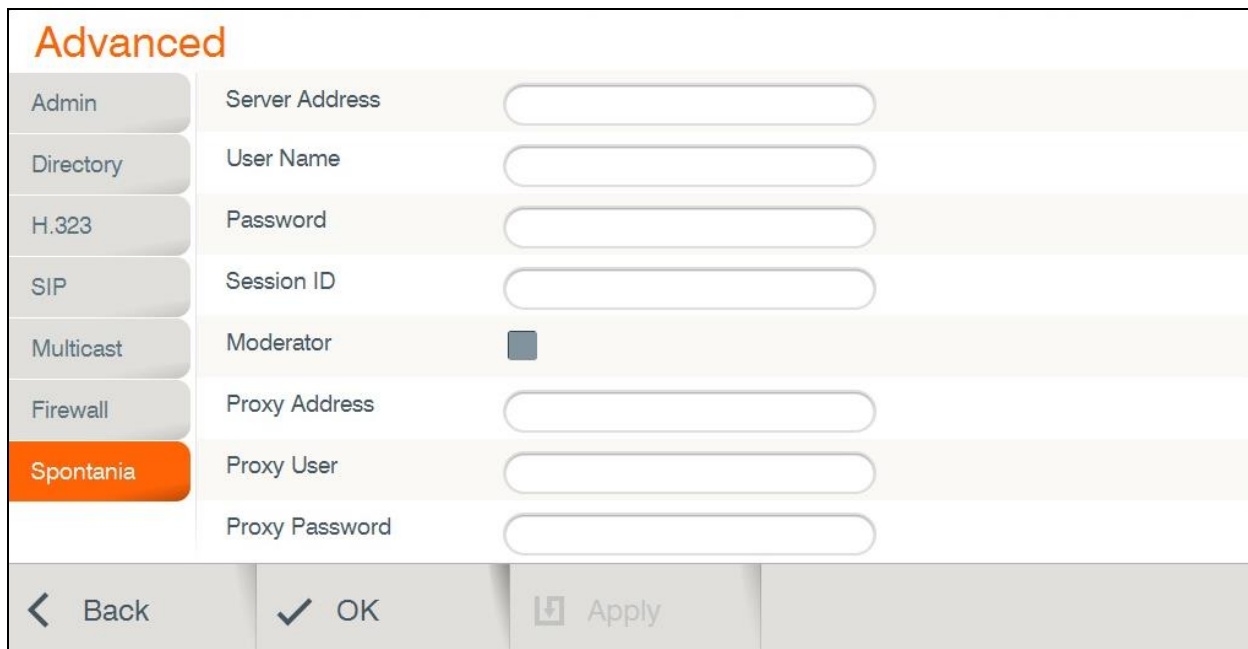
- ❑ **Tunneling Port** – The default tunneling port is 443. Tunneling is available only when working with COLLABORATE Central.
- ❑ **Use HTTP Proxy** – If your organization uses Proxy server, configure in the Proxy Address and Proxy Port.
- ❑ **Send Media As HTTP** – Disguising tunneling traffic as HTTP.

SPONTANIA SETTINGS

Registering to Spontania server will allow you to join and create Spontania cloud-based video conference according to your permissions.

To access Spontania Settings:

1. Select **Settings>Advanced>Spontania**. The Spontania window appears.



Advanced	
Admin	Server Address <input type="text"/>
Directory	User Name <input type="text"/>
H.323	Password <input type="text"/>
SIP	Session ID <input type="text"/>
Multicast	Moderator <input type="checkbox"/>
Firewall	Proxy Address <input type="text"/>
Spontania	Proxy User <input type="text"/>
	Proxy Password <input type="text"/>

← Back
✓ OK
💾 Apply

2. In the Spontania window, set the following options and parameters:
 - ❑ **Server Address** - Enter the IP Address of the Spontania server.
 - ❑ **User Name** – Enter the user name used to log into the Spontania server.
 - ❑ **Password** – Enter the password used to log into the Spontania server (if required).
 - ❑ **Session ID** – Enter the default session ID in order to perform quick dialing.
 - ❑ **Moderator** – Check this option to identify as Spontania moderator.
 - ❑ **Proxy Address:** Enter your organization proxy server address. For any assistance
Use your organization's network manager.
 - ❑ **Proxy User:** Enter the proxy server user name.
 - ❑ **Proxy Password:** Enter the proxy server password.

Chapter 7: General Settings

IN THIS CHAPTER

This chapter covers the General settings for COLLABORATE Pro, and includes the following sections:

- Calls Settings
- MCU Properties
- Recording Settings
- Streaming Settings
- Presentation Settings
- Preference Settings
- Security Settings

CALL SETTINGS

In the Call Settings window you can define miscellaneous technical settings that affect how video collaboration calls are performed by default.

To configure call settings

1. Select **Settings>General>Calls**. The Call Settings window appears.

General	
Calls	Auto Answer <input type="checkbox"/>
MCU	Do Not Disturb <input type="checkbox"/>
Recording	Auto Reject During Media Activity <input type="checkbox"/>
Streaming	Auto Mute Microphone Upon Incoming Call <input type="checkbox"/>
Presentation	Block Incoming SIP Calls <input type="checkbox"/>
Preference	Maximum Video Resolution 1080p
Security	

Back OK Apply

2. In the Call Settings window, set the following options and parameters
 - **Auto Answer** – Enables auto answering of incoming calls. Does not apply to MCU.
 - **Do Not Disturb** – Select to turn on auto reject of all incoming calls.

- ☐ **Auto Reject During Media Activity** – Select to auto reject all incoming calls when system is recording / streaming / multicasting on idle mode.
- ☐ **Auto mute microphone upon incoming call** – Enables auto muting the microphone for incoming calls.
- ☐ **Block Incoming SIP Calls** – Select to auto reject only incoming SIP calls.
- ☐ **Maximum Video Resolution** – Set the maximum video resolution.

MCU SETTINGS

The embedded MCU (optional feature) enables connecting up to 9 endpoints simultaneously from various locations. This MCU capability includes the host system and an additional 8 endpoints.

NOTE: Before using this functionality, please verify the licensing capabilities of your system. Press ‘Status’ on your remote control and verify that the Multisite feature is available in your license.

To configure the MCU settings:

1. Select **Settings>General>MCU**. The MCU Settings window appears.

General	
Calls	Layout: Auto
MCU	Answer Mode: Manual
Recording	Highlight Dominant Speaker: <input checked="" type="checkbox"/>
Streaming	Names Overlay: <input checked="" type="checkbox"/>
Presentation	
Preference	
Security	

2. In the MCU window, set the following options and parameters:

- ☐ **Layout** – Set the default layout for a multipoint call:

NOTE: Layout cannot be changed while recording is active during a session.

- **Auto** – The system will change the layout automatically according to the following principle: for up to 4 participants, the 2x2 layout is used; for 5 or 6 participants, the 5+1 layout is used; for 7 and up to 9 participants, the 3x3 layout is used.

- **VS** (voice switched) – The video stream of the dominant speaker is shown. The current dominant speaker sees the previous dominant speaker.
- **2x2** – The screen is divided into 4 quadrants of the same size. Each quadrant contains an image. If there are more than 4 endpoints in the call using this layout, the dominant speaker appears, replacing an image of a non-dominant speaker.
- **3x3** – The screen is divided into 9 rectangle portions of the same size. Each quadrant contains an image.
- **5+1** – This layout divides the screen into six rectangle portions. One is larger than the other parts and contains the image of the dominant speaker at any given time.
- **Answer Mode** – Set the default answer mode for the second and subsequent calls:
 - **Accept** – Automatically accept incoming calls
 - **Reject All** – Automatically reject all incoming calls
 - **Manual** – Display a prompt each time a call comes in
- **Highlight Dominant Speaker** – Display a green frame around the quadrant of the dominant speaker, except for in the 5+1 layout.
- **Names Overlay** – Display the remote station name overlaid on each participant image.

3. Select **Apply**.

Incoming calls will be answered using the settings you configured.

RECORDING SETTINGS

You can define the local directory in which recordings should be saved.

To configure the recording settings:

1. Select **Settings>General>Recording**. The Recording Settings window appears.

General	
Calls	Recording Path: Internal Browse
MCU	Format: MP4
Recording	Quality: High Definition (720p)
Streaming	Record And Stream Mode: Video And Presentation
Presentation	Source: Both
Preference	Layout: Vertical
Security	Remaining Time: 05: 39 (hh:mm)

< Back
✓ OK
⬇️ Apply

2. In the Recording Settings window the following properties can be configured:

- ☐ **Recording Path** – Select to set the path of the recording directory. This option is useful when changing the recording location to a USB flash drive or to a remote computer that in the same work group.
- ☐ **Format** – Choose between WMV and MP4 formats.
- ☐ **Quality** – Select the quality of the video recordings and streaming made on COLLABORATE Pro:
 - a. **Full High Definition (1080p)** – Record/Stream at image resolution of 1920x1080 pixels.
 - b. **High Definition (720p)** – Record/Stream at image resolution of 1280x720 pixels.
 - c. **Standard Definition** – Record/Stream at image resolution of 672x384 pixels.
- ☐ **Record And Stream Mode** – Choose streams to be streamed between videos and presentation.
- ☐ **Source** – Choose videos to be streamed between local and remote.
- ☐ **Layout** - Choose streaming layout:
 - o **Vertical** – Stream video in top and bottom mode.
 - o **Horizontal** – Stream video in side by side mode.

3. Select **Apply**.

NOTE: Changing the quality of the recordings is changing also the quality of the Streaming.

STREAMING SETTINGS

To configure the streaming settings:

1. Select **Settings>General>Streaming**. The Streaming Settings window appears.

General			
Calls	Streaming Port	554	Number Of Ports 10 1..20
MCU	Streaming Mode	Unicast	
Recording	Streaming Quality	High Definition (720p)	
Streaming	Record And Stream Mode	Video And Presentation	
Presentation	Source	Both	
Preference	Layout	Vertical	
Security	Multicast IP Address		
	Commence Streaming On Startup	<input type="checkbox"/>	

Back OK Apply

2. In the Streaming Settings window the following properties can be configured:

- ☐ **Streaming Port** – Enter the streaming port number. The default port is 12100 for WMV and 554 for MP4.

NOTE: Port number of MP4 streaming cannot be modified.

- ☐ **Number Of Ports** – Enter the number of streaming ports. The default number of streaming ports is 10.
- ☐ **Streaming Mode** - Choose between unicast and multicast.
- ☐ **Streaming Quality** – Select the quality of the video recordings and streaming made on COLLABORATE Pro:
 - d. **Full High Definition (1080p)** – Record/Stream at image resolution of 1920x1080 pixels.
 - e. **High Definition (720p)** – Record/Stream at image resolution of 1280x720 pixels.
 - f. **Standard Definition** – Record/Stream at image resolution of 672x384 pixels.
- ☐ **Record And Stream Mode** – Choose streams to be streamed between videos and presentation.
- ☐ **Source** – Choose videos to be streamed between local and remote.
- ☐ **Layout** - Choose streaming layout:
 - o **Vertical** – Stream video in top and bottom mode.
 - o **Horizontal** – Stream video in side by side mode.
- ☐ **Multicast IP Address** – The destination IP of the multicast.
- ☐ **Commence Streaming On Startup** – Select to auto start streaming when system is loaded.

NOTE: Changing the quality of the streaming is changing also the quality of the recording.

PRESENTATION SETTINGS

To configure the presentation settings:

1. Select **Settings>General>Presentation**. The Presentation Settings window appears.

General		
Calls	Enable Wireless Sharing	<input checked="" type="checkbox"/>
MCU	Auto Display Wireless Presentation	<input checked="" type="checkbox"/>
Recording	Wireless Sharing Code	<input type="text" value="520860"/>
Streaming	Presentation Sharing Mode	<input type="text" value="Sharpness"/>
Presentation		
Preference		
Security		

< Back ✓ OK □ Apply

2. In the Presentation Settings window the following properties can be configured:
 - **Enable Wireless Sharing** – Allow wireless data sharing from any PC with Collaborate Share application.
 - **Auto Display Wireless Presentation** – Wireless auto-sharing once sender is connected.
 - **Wireless Sharing Code** – Wireless security code need to be entered by sender.
 - **Presentation Sharing Mode** – Depending on the type of presentation material being transmitted you can choose the data transmit mode priorities either motion or sharpness:
 - **Motion** - provides the highest possible frame rate. Used when there is a need for higher frame rates, when there is a lot of motion in the data.
 - **Sharpness** - provides the highest possible resolution. Used when you want the highest quality of detailed images and graphics.
3. Select **Apply**.

PREFERENCE SETTINGS

The preference settings define general system properties.

To configure preference settings:

1. Select **Settings>General> Preference**. The preference Settings window appears.

General	
Calls	System ID: OFFICE
MCU	Name:
Recording	Language: English (English)
Streaming	Time Zone: (UTC+02:00) E. Europe
Presentation	Time: 13 : 46
Preference	Date: 24 / 07 / 2017
Security	Sleep Timeout: 20 Minutes (0 = Unlimited)

< Back ✓ OK Apply

2. In the Preference Settings window, set the following options and parameters.
 - ☐ **System ID** – System ID used to identify the system when using DNS dialing.
 - ☐ **Name** – Set the system title that will represent the unit during a session.
 - ☐ **Language** – Select the desired language for the user interface. Click **Apply**. (A system restart is required after changing the system language.)
 - ☐ **Time Zone** – Select your country time zone.
 - ☐ **Time** – If not already set, enter the current time.
 - ☐ **Date** – If not already set, enter the current date.
 - ☐ **Sleep Timeout** – Duration of idle time (in minutes) before the system goes into sleep mode.
3. Select **Apply**.

SECURITY SETTINGS

To configure security settings:

1. Select **Settings>General>Security**. The Security Settings window appears.

General			
Calls	Enable Web Server	<input checked="" type="checkbox"/>	Password <input type="text"/>
MCU	Enable Telnet Interface	<input type="checkbox"/>	Password <input type="text"/>
Recording	Enable Password For Settings	<input checked="" type="checkbox"/>	Password <input type="text"/>
Streaming	Settings Access	<div>Advanced ▼ Advanced All</div>	
Presentation			
Preference			
Security			

← Back ✓ OK ⬇️ Apply

2. In the Security Settings window, set the following options and parameters
 - **Enable Web Server** – Select this option to allow Web access to the COLLABORATE Pro unit via a browser. If you enter a password, Web users will be required to enter the same password when they access the unit. (For more information, see Web Access and Management).
 - **Enable Telnet Interface** – Select this option to allow access to the COLLABORATE Pro unit via a Telnet-based terminal. If you enter a password, Telnet users will be required to enter the same password when they access the unit.
 - **Enable Password for Settings** –
 - **Advanced** - Selecting this option restricts the access to the advanced settings of the unit, which are: Admin, IP, Directory, H.323, SIP, Multicast and Firewall.
 - **All** - Selecting this option restricts the access to all settings of the unit.

Chapter 8: Spontania

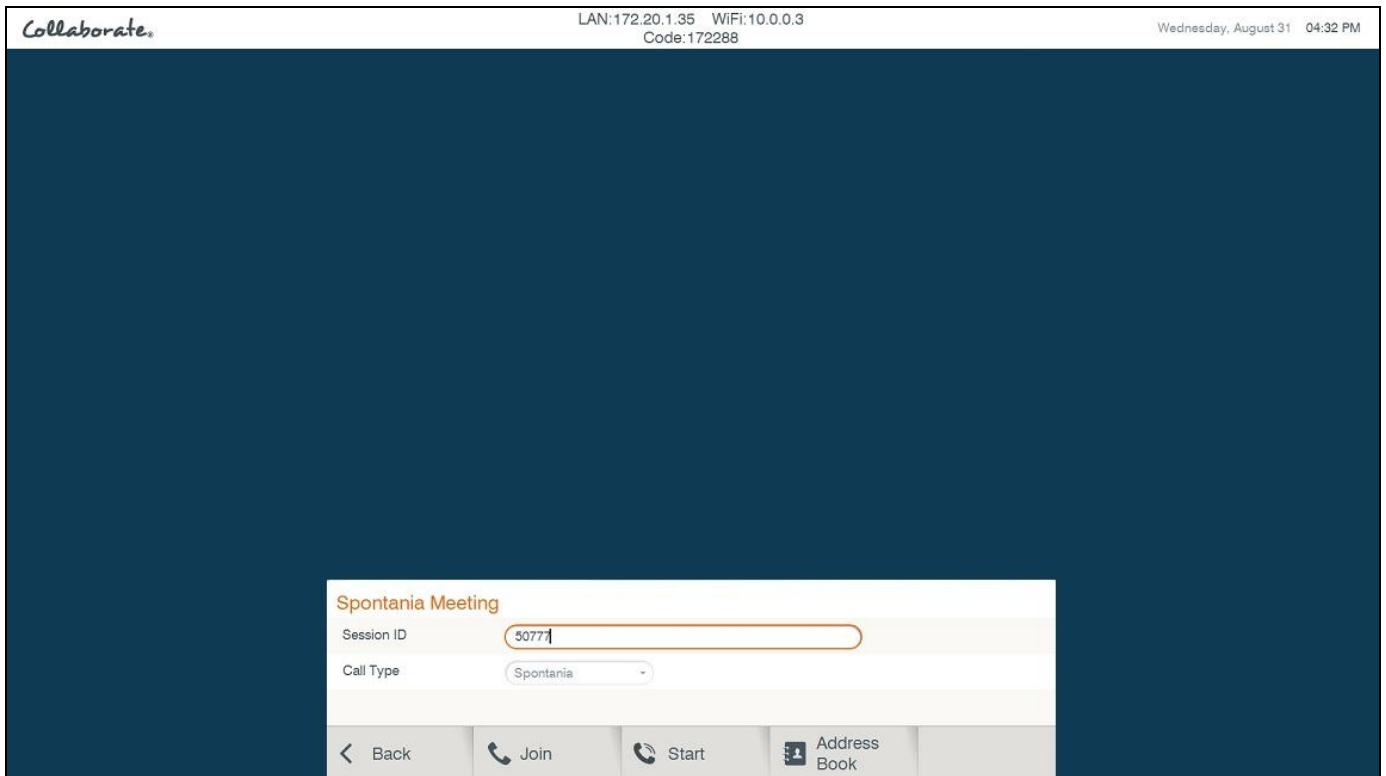
IN THIS CHAPTER

Spontania is a unified group video conference and collaboration software. It provides a full range of real-time communication and collaboration.

STARTING / JOINING A SPONTANIA MEETING

You can start or join a Spontania meeting:

1. Select **Conference > Spontania Meeting**. The Spontania meeting bar appears.



2. To join a Spontania meeting enter Meeting ID and press Join. If you are a session moderator and you entered session ID in Spontania settings, press Start.

NOTE: Before joining / starting a Spontania meeting, you must enter a valid server and user details under Settings > Advanced Spontania.

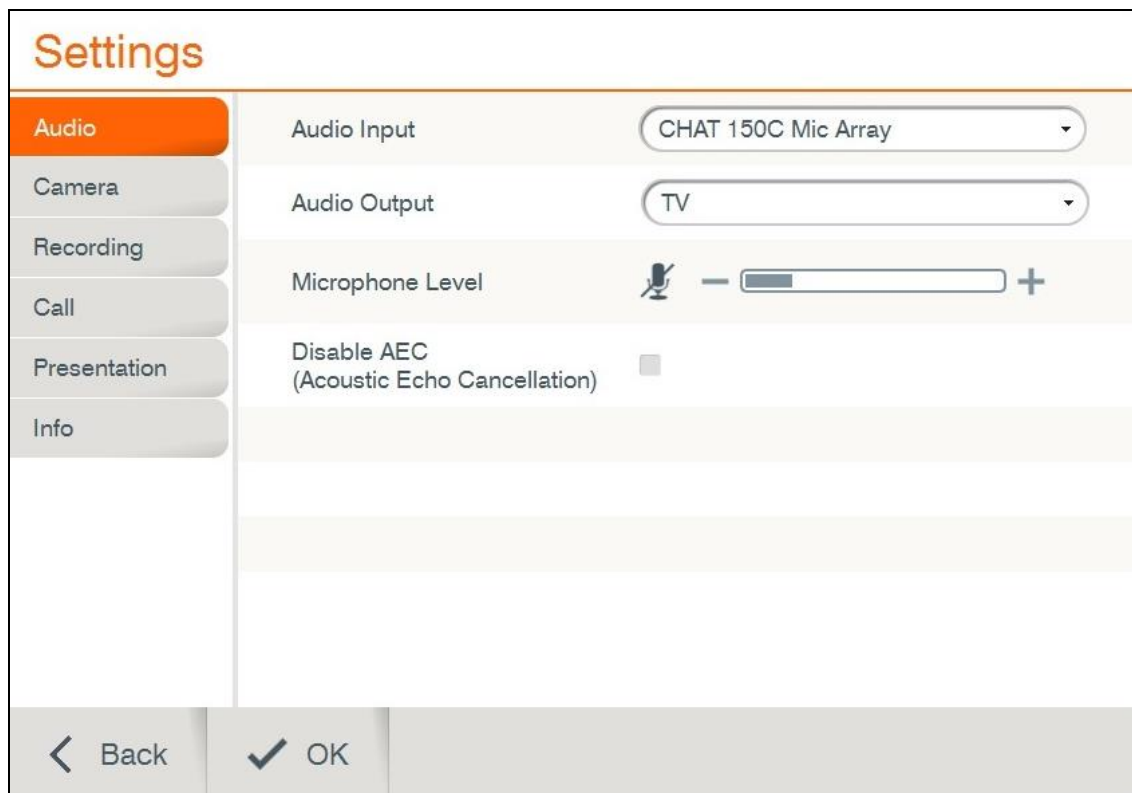
2. Spontania meeting starts.



SPONTANIA SETTINGS

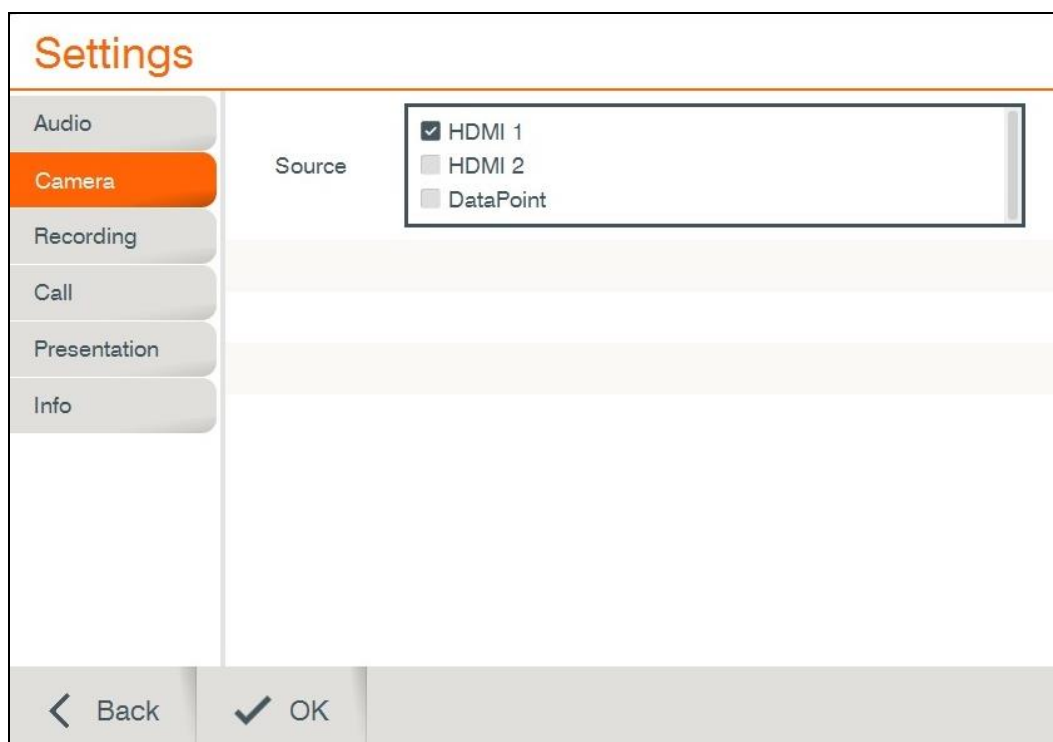
During a Spontania meeting you can change the settings according to your permissions.

1. Audio Settings:



- ❑ **Audio Input** – Select CHAT 150C Mic Array to be your audio input device.
- ❑ **Audio Output** – Select a playback device from the list
- ❑ **Microphone Level** – Adjust the microphone sensitivity level in percentage (%)
- ❑ **Disable AEC** – Disable the check box to prevent echo.

2. Camera Settings:



- ❑ **Source:** Choose one or more cameras to share in the meeting.

2. Recording Settings (Available only for moderator):

The screenshot shows the 'Settings' screen with the 'Recording' tab selected. The left sidebar contains links for Audio, Camera, Recording, Call, Presentation, and Info. The main content area is titled 'Recording Path' with a dropdown set to 'Internal' and a 'Browse' button. Below this is the 'Format' section with radio buttons for 'WCONF' (selected) and 'MP4'. Under 'MP4 Options', there is a 'Quality' dropdown set to 'High Definition' and a 'Background Image' section with a text input, 'Browse', and 'Clear' buttons. At the bottom are 'Back', 'OK', and 'Apply' buttons.

- ❑ **Recording Path** – The path where the recordings will be saved.
- ❑ **Format** – Choose between MP4 and WCONF.
- ❑ **Quality** – Choose recording quality (MP4 format only).
- ❑ **Background Image** – Choose image to be in the background when the recording layout is not covering the all screen (MP4 format only).

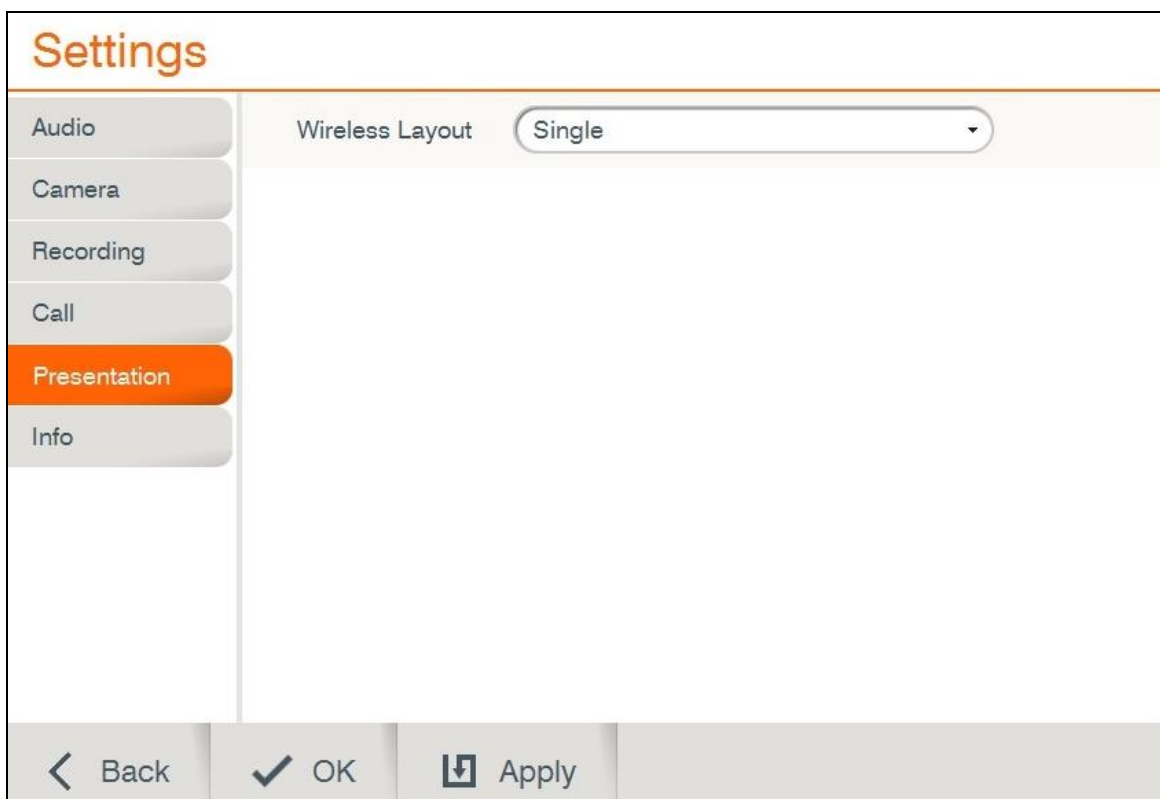
3. Call Settings (Available only for moderator):

The screenshot shows the 'Settings' screen with the 'Call' tab selected. The left sidebar contains links for Audio, Camera, Recording, Call, Presentation, and Info. The main content area has a 'Services' checkbox which is checked. Below is the 'Video' section with 'Predefined' set to 'AVQ4', 'Bandwidth' set to '180 Kbps', and 'FPS' set to '15 FPS'. The 'Application' section follows with 'Predefined' set to 'High', 'Bandwidth' set to '1500 Kbps', and 'Depth' set to '65535C'. At the bottom are 'Back', 'OK', and 'Apply' buttons.

Application: shows the general configuration of quality for the signal transmission in the participants' application sharing service. It is divided into 3 fields:

- **Predefined** - shows a list of pre-established configurations regarding the quality of the application sharing service, which sets up specific values for the fields “Bandwidth” and “Depth”.
- **Bandwidth** - offers a list of values of network speed (in kilobits per second) associated with the signal transmission of the application sharing service, if this service is activated during the session.
- **Depth** - provides a list of values (in number of colors) associated with the sharpness of the application sharing service, if this service is activated during the session.

4. Presentation Settings:



- **Wireless Layout:** Choose wireless sharing layout:
 - **Automatic:** All senders will be displayed and arranged in the same size.
 - **Single:** Only one sender will be displayed. You can switch between senders with input button in your remote control.
 - **Preview:** All senders will be displayed. The chosen main sender will be displayed in big size and other senders will be displayed in small size. You can switch between senders with input button in your remote control.

PRESENTATION



- ☐ **HDMI 1 / 2** – Depending on your camera source, if available, share second HDMI input.
- ☐ **DataPoint** – Share your HDMI input via DataPoint device.
- ☐ **File Transfer** – Transfer a file to the other participants.
- ☐ **Share Video** – Share video file from USB storage device or share a recording.
- ☐ **Whiteboard** – Graphic space to draw or take notes on a new “canvas”.
- ☐ **Start Recording (Moderator only)** – Start recording the current meeting.
- ☐ **Hand Raise** - Request permission to speak during the session.
- ☐ **Wireless** – Start wireless sharing, when sender is connected to the unit.

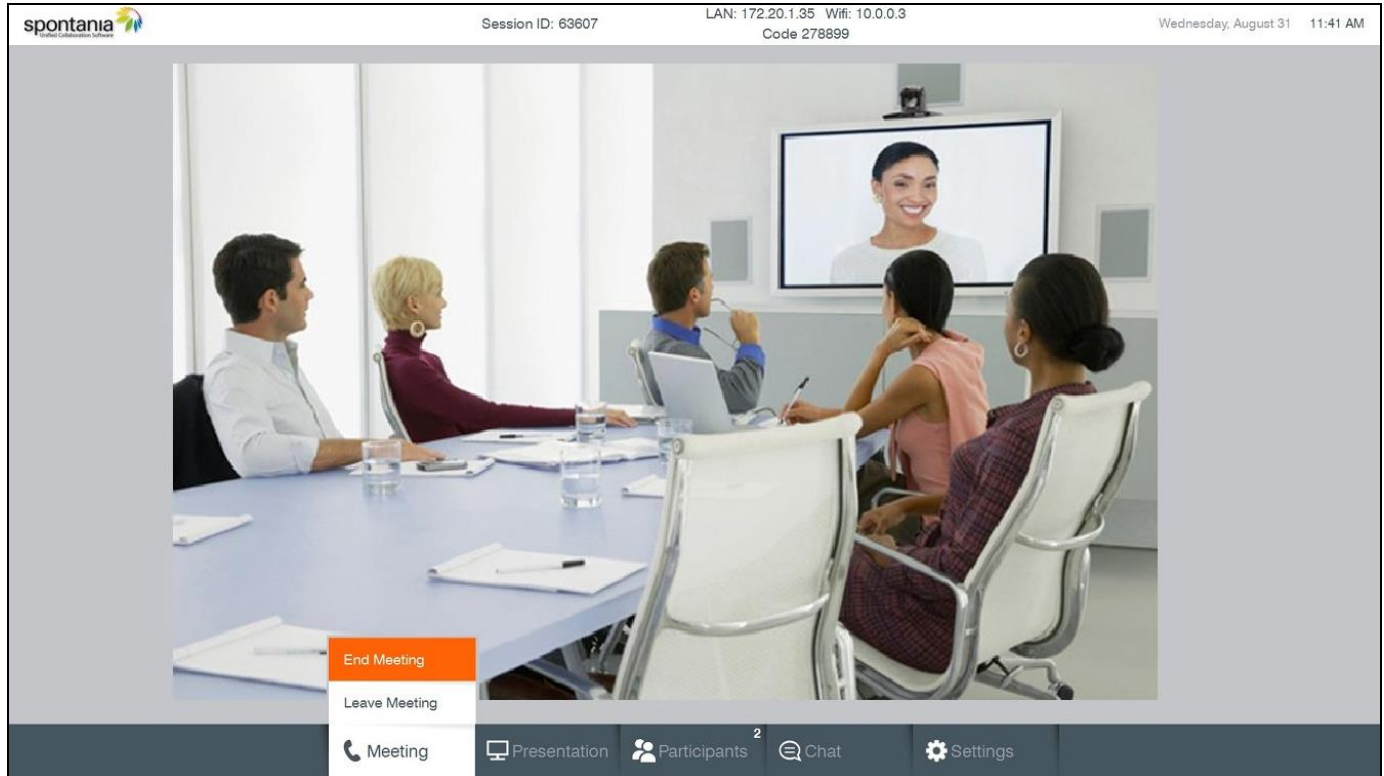
PARTICIPANTS

Lists of connected participants, showing the communication and collaboration services activated for each of them. Only moderator can manage these services.



- ☐ **⚙️ Icon** - This icon allows the moderator to act on the specific configuration parameters of a certain user.
- ☐ **● Icon** - appears on the left of each user's name. It shows the quality of connection for that user.
- ☐ To activate any of the Spontania communication and collaboration services for a participant, the moderator must act on the corresponding user's checkbox (listed in rows) and service (listed in columns) and mark them with the icon. To carry out the opposite action, that is, to deactivate one of the services for a participant, the moderator must click on the checkbox showing the active state to change it to the icon deactivated.

END MEETING



- ☐ **End Meeting** – Terminate the meeting and discard all participants.
This option is available only for moderator.
- ☐ **Leave Meeting** – Hang up and leave the meeting.

Chapter 9: Web Access and Management

IN THIS CHAPTER

This chapter explains how to access COLLABORATE Pro via a browser and use the Web-based GUI for viewing sessions/files, and configuring the unit from a remote location or via the LAN.

The Web interface includes all the options that are available via the regular on-screen GUI, as well as some additional configuration options that are not available via the regular GUI.

Since the user options shared by both GUIs are generally the same, this chapter focuses mainly on the exclusive web options, and includes the following sections:

- ☐ Accessing COLLABORATE Pro via Browser
- ☐ Viewing a Stream Session
- ☐ Download Collaborate Share for wireless sharing
- ☐ Viewing a Multicast Video Collaboration
- ☐ Importing/Exporting the License
- ☐ Viewing the Recording Archive
- ☐ Sending Running Text in a Call
- ☐ Viewing Call Status
- ☐ Performing System Upgrade
- ☐ Performing System Backup
- ☐ Performing System Restore from Backup File
- ☐ Performing System Restore from FTP

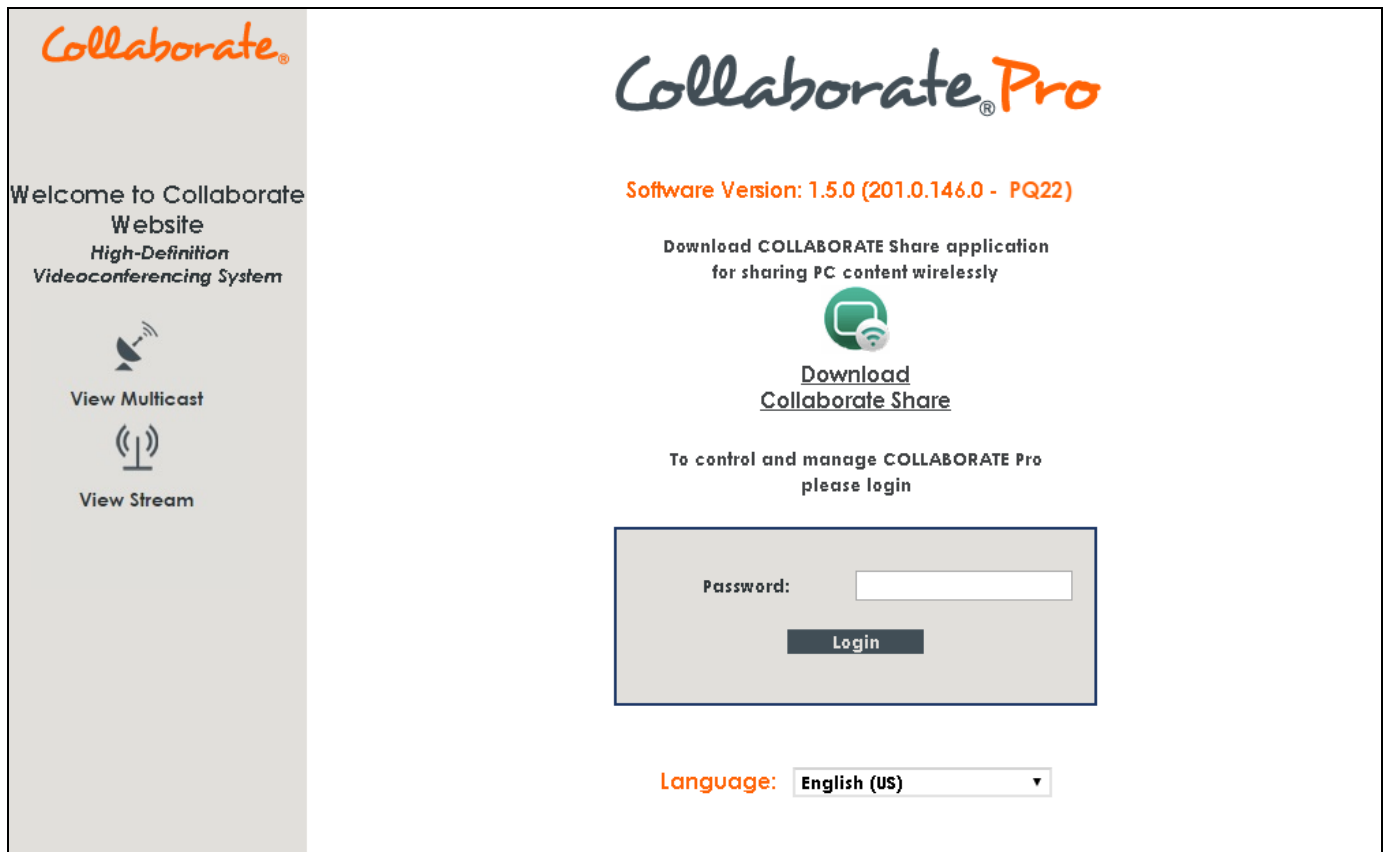
ACCESSING COLLABORATE PRO VIA BROWSER

You can access COLLABORATE Pro via a standard Web browser from any remote location or from your LAN.

To access COLLABORATE Pro via a browser:

1. Open your browser.
2. In the browser's address bar, type the direct IP Address of the COLLABORATE Pro unit. The COLLABORATE Pro Web login page appears. For example: `http://172.100.100.25`

NOTE: If you do not know the IP Address of the COLLABORATE Pro unit, request help from a user close to the unit, who can check the unit's IP Address as explained in Displaying System Information.



3. If a password was set for Web access (see Administration Settings): in the **Password** field, enter your password for accessing the management options, and then click **Login**.

If the password is authenticated, the management options page appears.

VIEWING A STREAM SESSION

You can view in your browser any stream that has started on COLLABORATE Pro. The stream may be of whatever is currently being captured by the video camera and microphone that are connected to COLLABORATE Pro.

The stream is viewed in the browser using Windows Media Player for WMV stream or VLC player for MP4 stream.

NOTE: Viewing a stream does not require you to enter your password and you do not have to log in.

To view a stream session:

1. Open your browser.
2. In the browser's address bar, type the direct IP Address of the COLLABORATE Pro unit. The COLLABORATE Pro Web login page appears.
3. Click **View Stream**; a new browser window opens and displays the stream on a page embedded in Windows Media Player or VLC player.

VIEWING A MULTICAST VIDEO COLLABORATION

You can view in your browser an ongoing multicast video collaboration that has started via the COLLABORATE Pro unit.

The multicast video collaboration is viewed in the browser using an embedded Apple QuickTime plug-in.

NOTE: Viewing a multicast video collaboration does not require you to enter your password and you do not have to log in.

To view a stream session:

1. Open your browser.
2. In the browser's address bar, type the direct IP Address of the COLLABORATE Pro unit. The COLLABORATE Pro Web login page appears.
3. Click **View Multicast**; a new browser window opens and displays the video collaboration on a page with QuickTime embedded to it.

NOTE: in order to view the Multicast via QuickTime, multicast settings should be configured to H.261 for video codec and G.711 for audio.

DOWNLOADING COLLABORATE SHARE

You can share your PC desktop or an application via the network. To use this feature you need to download Collaborate Share application.

To download Collaborate Share:

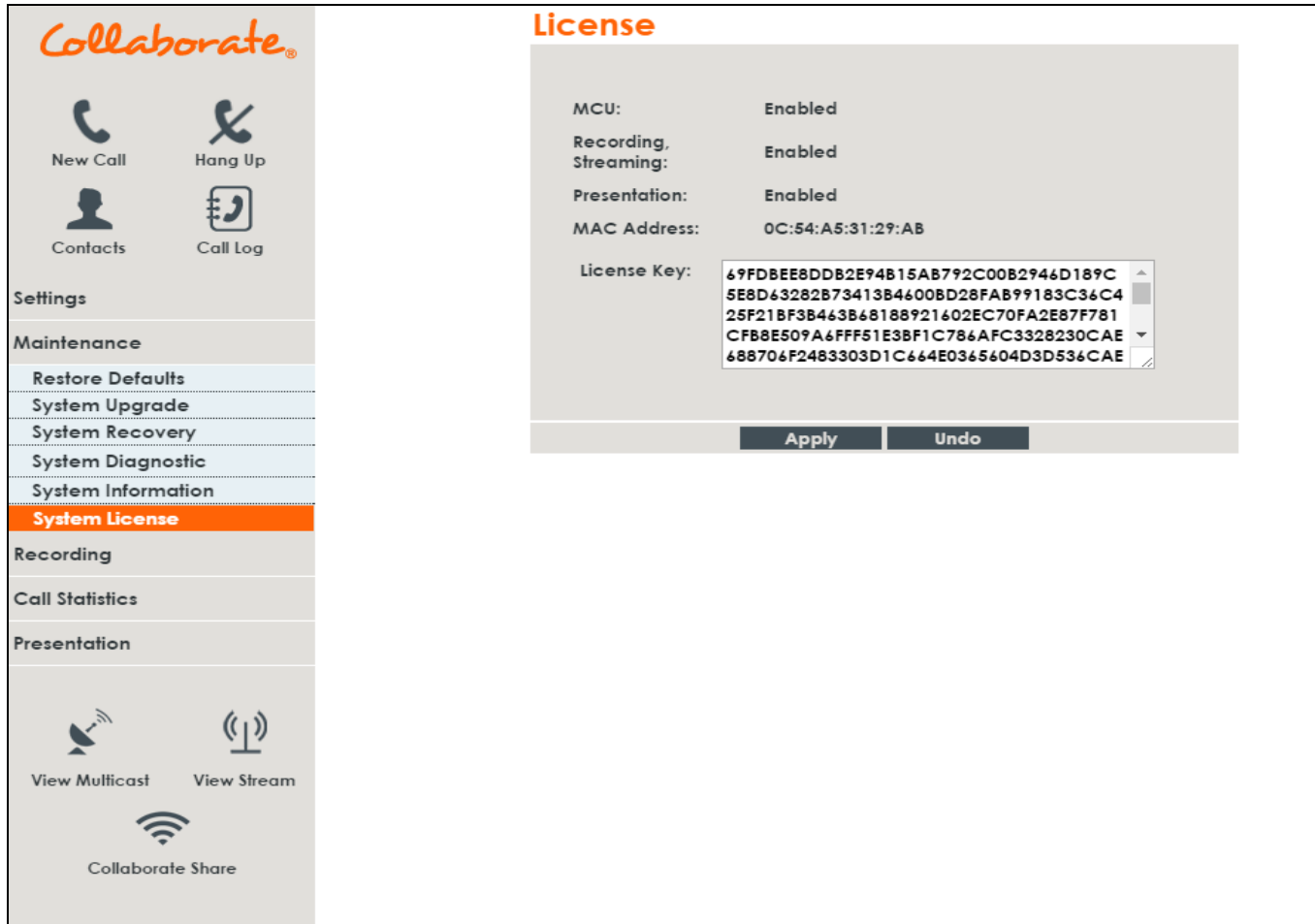
1. Open your browser.
2. In the browser's address bar, type the direct IP Address of the COLLABORATE Pro unit. The COLLABORATE Pro Web login page appears.
3. Click on Collaborate Share icon. The application download will be start automatically.

IMPORTING/EXPORTING THE LICENSE

Some features and functionalities in COLLABORATE Pro require licensing, and are activated with a license key that you must enter and save to your COLLABORATE Pro unit.

To enter and save a license to your COLLABORATE Pro unit:

1. After logging in, click **Maintenance>System License**. The License page appears.



2. Copy and paste the license key (a long text-based string) that you received from ClearOne into the **License Key** text box, and then click **Apply**.

Once the license key is applied, you can view which features/functionality are available:

- ❑ **Presentation** – Indicates whether the laptop sharing and USB sharing functionality are enabled or disabled.
- ❑ **MCU** – Maximum number of endpoints that can participate in videoconferences using the embedded MCU.
- ❑ **Recording, Streaming** – Indicates whether the recording and streaming functionalities are enabled or disabled.

The unit's MAC address is also displayed.

VIEWING THE RECORDING ARCHIVE

You can view the list of recordings that are stored in the COLLABORATE Pro recording directory, and you can also delete recordings that are no longer needed.

To view the list of recordings:

1. After logging in, click **Recording**. The Recording Archive page appears.

Collaborate **Recording** Internal

Select: All | None | Remaining Time [672x384 - 28: 36 hh:mm] [720p - 05: 38 hh:mm] [1080 - 02: 54 hh:mm] Free Space: 6.28 GB

ArchiveDelete

	Name	Date	Time	Size	Duration	
<input type="checkbox"/>	rename <u>Recording</u>	24/04/2016	14:14:14	1.11 MB	00:00:04	<u>Download</u>
<input type="checkbox"/>	rename <u>Recording</u>	24/04/2016	14:13:36	10.04 MB	00:00:33	<u>Download</u>

Today
Saturday
Friday
Thursday
Wednesday
Last Week
2 Weeks Ago
Previous Month
All

Name

Date Range
From Date: ...
To Date: ...
Search

2. Click on recording name in order to play it. Right-click on mouse on Download option in order to download the recording.
3. Choose which recordings you would like to view by using the following filtering options:
 - ☐ **Today** – Click to display only the recordings that were saved in the current day.
 - ☐ **Specific day of this week** – Click any other day of the current week to display the recordings that were saved on that specific weekday.
 - ☐ **Last week** – Click to display only the recordings that were saved last week.
 - ☐ **2 Weeks Ago** – Click to display only the recordings that were saved two weeks ago.
 - ☐ **Previous Month** – Click to display only the recordings that were saved in the previous month.
 - ☐ **All** – Click to display the entire archive of recordings that are saved in the COLLABORATE Pro recording directory. The directory path is shown in the title line above the list.
 - ☐ **Name** – If you want to search for a specific recording name, enter the name in this text box and then click the **Search** button below.
 - ☐ **From Date/To Date** – Use these boxes to define a date range for the recordings that you want to display on the list. Only the recordings that were saved in the defined

range will be displayed once you click the **Search** button. You can browse for specific From/To dates using the two Browse buttons available next to the text boxes.

The Recording Archive list shows the following details for each saved recording:

- ❑ **Name** – Name of the recording. You can click the adjacent **Rename** button if you want to change the file name.
- ❑ **Date** – Date on which the recording was made and saved.
- ❑ **Time** – Time at which the recording was made and saved.
- ❑ **Size** – Size of the recording file in kilobytes or megabytes.
- ❑ **Duration** – The recording's length.

The currently available disk space size, labeled **Free Space**, is displayed above the list.

To delete a recording:

- ❑ Select the checkbox on the row of the recording's entry, and then click **Delete**. You can select more than one recording.

NOTES:

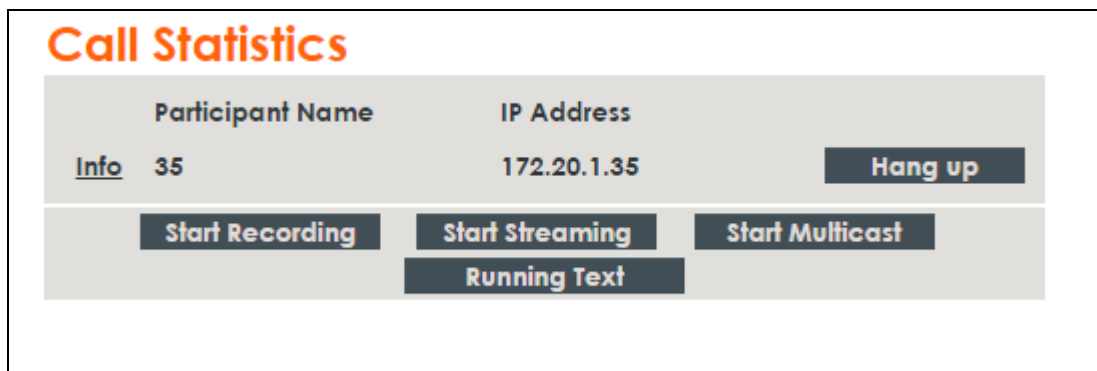
- ❑ **Click Select All to select the checkboxes of all recordings that are currently displayed.**
- ❑ **Click None to clear the checkboxes of all recordings that are currently displayed.**

SENDING RUNNING TEXT IN A CALL

During a video collaboration call, you can type and send a text message to the person(s) with whom you are communicating. The message is displayed as running text on top of the video image on the far-end screen.

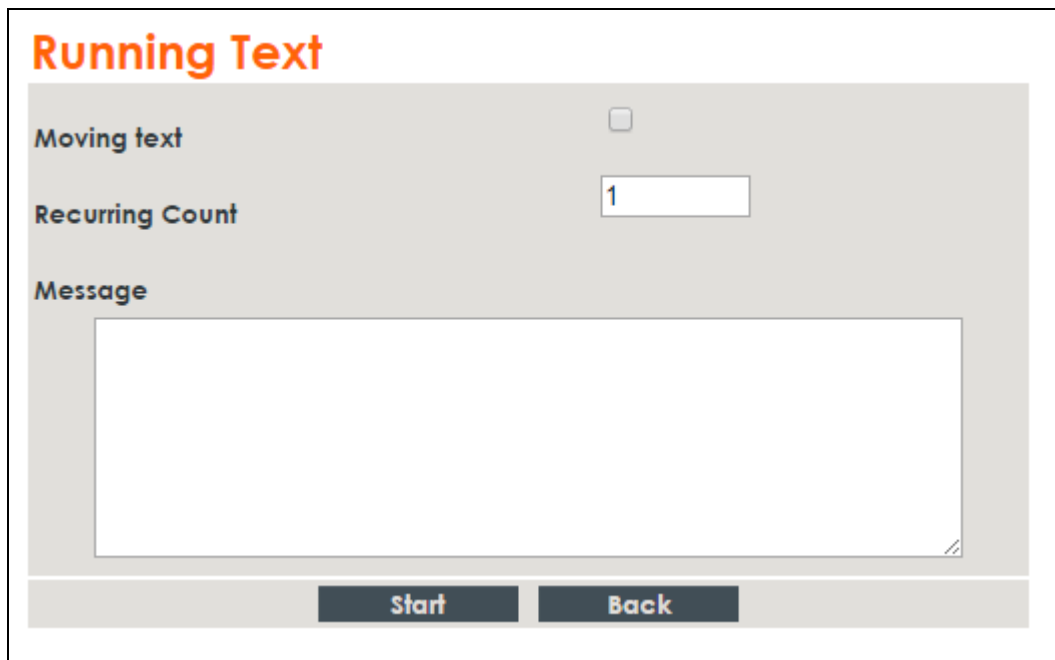
To type and send a running text message:

1. Start the call. The **Running Text** button appears in the Call Statistics box (available only in the Web interface).



2. Click the **Running Text** button. The Running Text box appears.
3. In the text box, type the message you want to send and display on the far-end screen, and

then click **Start**.



Running Text

Moving text ☐

Recurring Count

Message

Start **Back**

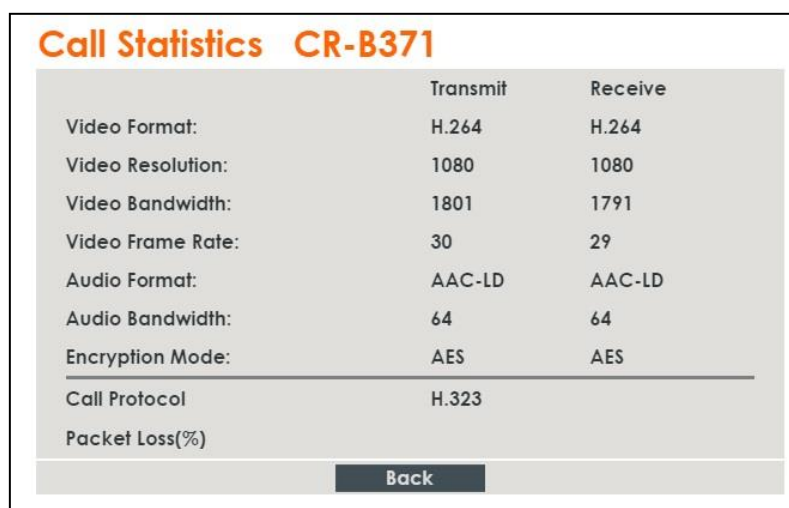
NOTE: To stop the display of the running text message on the far end, click **Stop**.

VIEWING CALL STATUS

During a videoconference call, you can view and check the technical details of the call. To

view the call status details:

- ☐ During the video collaboration call, click the **Info** link in the Call View box (see Call View box).



	Transmit	Receive
Video Format:	H.264	H.264
Video Resolution:	1080	1080
Video Bandwidth:	1801	1791
Video Frame Rate:	30	29
Audio Format:	AAC-LD	AAC-LD
Audio Bandwidth:	64	64
Encryption Mode:	AES	AES
Call Protocol	H.323	
Packet Loss(%)		

Back

The following information is displayed in the Call Status box for both **incoming** and **outgoing** communication:

- ❑ **Video Format** – Video codec used to display video in this call
- ❑ **Video Resolution** – Video resolution used in this call
- ❑ **Video Bandwidth** – Bandwidth used by the video in this call
- ❑ **Video Frame Rate** – Video frame rate used in this call
- ❑ **Audio Format** – Audio codec used to sound audio in this call
- ❑ **Audio Bandwidth** – Bandwidth used by the audio in this call
- ❑ **Encryption Mode** – Type of encryption used in this call (if encryption is used).
- ❑ **Call Protocol** – Protocol of the current call.
- ❑ **Packet Loss** – Percentage of packets that did not arrive their destination.

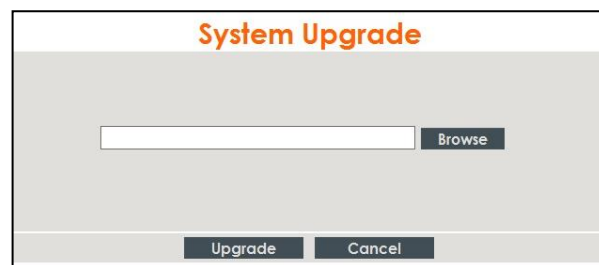
NOTE: To return to the Call View box, click **Back**.

PERFORMING SYSTEM UPGRADE

You can upgrade the Collaborate software to a newer version when such becomes available.

To upgrade the COLLABORATE Pro software:

1. After logging in, click **Maintenance>System Upgrade**. The System Upgrade box appears.

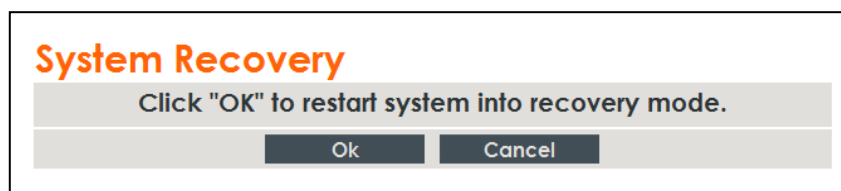


2. Click **Browse** and then select the ClearOne-provided file that contains the newer software version.
3. Click **Upgrade**. The system upgrade is performed and then the system reboots.

PERFORMING SYSTEM BACKUP

The Backup option, using the remote controller, takes a snapshot of the current COLLABORATE Pro configuration. It is recommended to take backup snapshots every time a configuration change is made.

1. After logging in, click **Maintenance>System Recovery**



2. The system will reboot and a **Recovery** screen will appear



3. Select the **Backup** option. The **Backup** screen will appear.

[illegible]

- Using the remote control to enter letters and numbers, enter the **Backup name** and click on the **Create** button to create the backup file of the configuration.
- Once it is done, press the **Exit** button and reboot the system. Shutdown the system by pressing few seconds on the **power** button; then press the **power** button again in order to turn on the system.

PERFORMING SYSTEM RESTORE FROM BACKUP FILE

Whenever necessary, you can discard all manually entered configuration settings and restore the settings to a saved backup of an earlier configuration.

NOTE: Before restoring the system, you must save the system License Key. This is accessed by using the menu:

Maintenance> System License

Reset the COLLABORATE Pro unit to a backup snapshot file using a browser:

1. Open your browser.
2. In the browser's address bar, type the direct IP Address of the COLLABORATE Pro unit. The COLLABORATE Pro web login page appears. For example: <http://172.100.100.25>
3. After logging in, click **Maintenance>System Recovery**

NOTE: All information on the system including user information, Contacts entries, IP settings and all other user defined information will be deleted.

NOTE: After restoring the system to its factory defaults, it may be necessary to perform a system upgrade.

3. The system will reboot and **Recovery** menu will appear.



4. Select the **Restore** button. The **Restore** screen will appear

Restore

Restore Backup

Current version: first

Backup name: BACKUP **Restore**

Available Restore Points

Backup Name	Date Created
BACKUP	9/5/2016 10:20:29 AM

Remote keys:
Hang Up - Delete selected backup
Volume Plus - Scroll up backups list
Volume Minus - Scroll down backups list

Back **Exit**

5. Select the backup configuration file you want to restore, and press the **Restore** button.
6. Once the restore process is completed, press **OK** and shutdown the system by pressing for a few seconds on the **power** button; then press the **power** button again in order to turn on the system.
7. Copy the stored License Key to the system (Configuration>Option>License)

PERFORMING SYSTEM RESTORE FROM FTP

Whenever necessary, you can discard all manually entered configuration settings and restore using settings delivered via FTP.

NOTE: before restoring the system to its factory defaults, you must save system License Key. This is accessed by using the menu:

Maintenance>System License

To set the COLLABORATE Pro unit to settings delivered via FTP:

1. After logging in, click **Maintenance>System Recovery**

NOTE: All information on the system including user information, Contacts entries, IP and all other user defined information will be deleted.

NOTE: After restoring the system to its factory defaults, it may be necessary to perform a system upgrade.

- The system will reboot and **Recovery** menu will appear.



- Select the **FTP Updates** button. The **FTP Updates** screen will appear
- Enter the FTP server details including **FTP Address**, **User Name** and **Password**, and click the **Connect** button.
- Select the file from the listing, and then click on the **Download** button.

The screenshot shows a light green background with the title "FTP Updates" in orange at the top center. The screen is divided into two main sections: "Download Update" on the left and "Available Updates" on the right. In the "Download Update" section, there is a text input field labeled "Update name:" and a grey "Download" button. In the "Available Updates" section, there is a table with two columns: "Update Name" and "Date". The table has 10 empty rows. Below the table, there are three input fields: "FTP address:" with the value "ftpil.clearone.com", "User Name:" with the value "images", and "Password:" with the value "fGh~na#_bLo2@". To the right of these fields is an orange "Connect" button. At the bottom right, there are two grey buttons: "Back" and "Exit".

Update Name	Date

- Once the download is completed, press on the **Back** button.
- Select the **Restore** button and follow the restore steps listed above

ACCESS TO SYSTEM RECOVERY WITH USB DEVICE

In addition to web server, you can reach recovery mode with designated USB device.

1. Connect Recovery USB and a keyboard to the system.
2. Restart you system (**Settings > Power > Restart**).
3. During restart, press **F10** on your keyboard.
4. In the boot manager, Choose Recovery USB device.

NOTE: System recovery management via USB device is with the keyboard, while recovery management via Web Server is with the remote control.

Chapter 10: Telnet Commands

The Telnet commands allow you to communicate with a remote computer that is using the Telnet protocol.

You can run **telnet** without parameters in order to enter the telnet context, indicated by the Telnet prompt (**telnet>**). From the Telnet prompt, use the following commands to manage a computer running Telnet Client.

ENABLING THE TELNET API

To enable the Telnet API:

1. Click **Settings > General > Security**
2. Check the **Enable Telnet Interface** checkbox.

DESCRIPTIONS OF THE TELNET API (COLLABORATE PRO)

Key	Description	Arguments	Example
accept	Accept incoming call	—	accept
hangup	Hanging up session		hangup
reject	Rejecting incoming call		reject
change_camera	Set current camera by index (call <i>cameralist</i> for list of	Index:1-9	change_camera 1
callinfo	Request call info values	SessionID: Valid session ID number	callinfo 1
camerahome	Return PTZ camera to default position	—	camerahome
cameralist	Return list of available video	—	cameralist
camerapos	Save or restore camera position from preset	Action: save, restore Position: 1-9	camerapos save 2
camerastart	Start camera movement pan, tilt, zoom in different direction	Direction: <input type="checkbox"/> u – up <input type="checkbox"/> d – down <input type="checkbox"/> l – left <input type="checkbox"/> r – right <input type="checkbox"/> ul – up+left <input type="checkbox"/> ur – up+right <input type="checkbox"/> dl – down+left <input type="checkbox"/> dr – down+right <input type="checkbox"/> zi – zoom in <input type="checkbox"/> zo – zoom out	camerastart u camerastart up camerastart u remote

Key	Description	Arguments	Example
camerastop	Stop camera movement	Direction: <input type="checkbox"/> spt – stop pan tilt <input type="checkbox"/> sz – stop zoom	camerastop sz camerastop sz remote
dial	Dial specific address via LAN network	<input type="checkbox"/> Address: <input type="checkbox"/> Calltype: lan,sip,audio <input type="checkbox"/> Bandwidth (optional): 64, 128, 256, 384, 512, 1024 (Bandwidth list is configurable in Commands.xml file on both sides, server and client)	dial 125.0.1.2 lan 128
dtmf	Send DTMF tone to remote endpoint identified by Participant ID (Note: Use sessions to retrieve Participant ID)	ParticipantID: any valid participant number DTMF: DTMF tone sequence	dtmf 23 035667344 dtmf 111 123433#5*
dtmf2all	Send DTMF tone to all active calls	DTMF: DTMF tone sequence	dtmf2all 035667344 dtmf2all 123433#5*
get	Get parameter value	Parameter: <input type="checkbox"/> mic <input type="checkbox"/> volume <input type="checkbox"/> speaker <input type="checkbox"/> license <input type="checkbox"/> autoanswer	get mic get volume get autoanswer
set	Set parameter value	Parameter: <input type="checkbox"/> mic <input type="checkbox"/> volume <input type="checkbox"/> speaker <input type="checkbox"/> autoanswer	set mic on set volume 5 set autoanswer on
multicast / recording / streaming	Start or stop media activity.	Parameter: <input type="checkbox"/> start <input type="checkbox"/> stop	recording start streaming stop
donotdisturb	Start or stop do not disturb mode.	Parameter: <input type="checkbox"/> enable <input type="checkbox"/> disable	donotdisturb enable
help	Display all telnet commands and notifications.		help

shutdown / restart	Shutdown or restart the unit.		restart
sharehdm1 / sharehdm2	Start sharing HDMI content depending on connected devices.	Parameter: <input type="checkbox"/> start <input type="checkbox"/> stop	sharehdm2 start
sharelaptop	Share DataPoint when it is connected to the unit.	Parameter: <input type="checkbox"/> start <input type="checkbox"/> stop	sharelaptop start
sharewireless	Start wireless sharing when there is at least 1 sender connected to the unit.	Parameter: <input type="checkbox"/> start <input type="checkbox"/> stop	sharewireless start
changewirelesslayout	Change wireless layout while wireless is being shared.	Parameter: <input type="checkbox"/> auto <input type="checkbox"/> single <input type="checkbox"/> preview	changewirelesslayout single
nextsender	When more than one sender is shared in preview or single layout, change between main senders.		nextsender
startsession	Start Spontania meeting as a moderator.		start session
joinsession	Join Spontania meeting as a participant.	Session ID.	joinsession 12345
sessions	Display all active sessions and their sessions ID.		sessions

remotecontrol	Commit a remote control command	1 Status 2 Data 3 Phone Book 4 Help 5 Near Far 6 Camera Control 7 Preset Recall 8 Preset Set 9 PIP 10 Speed Dial 11 Call Log 12 Mute Mic 13 Display 14 Settings 15 Mute Video 16 Mute Speaker 17 Enter 18 Go Right 19 Go Left 20 Go Up 21 Go Down 22 Cancel 23 Dial 24 Hang Up 25 Zoom In 26 Zoom Out 27 Volume Up 28 Volume Down 29 Num 1 30 Num 2 31 Num 3 32 Num 4 33 Num 5 34 Num 6 35 Num 7 36 Num 8 37 Num 9 38 Num 0 39 Dot (. ^ , @ #) 40 Clear / # DTMF	remotecontrol 1
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Starting an API Session using an RS-232 (COM 2) Interface

The COLLABORATE Pro can run API sessions from the RS-232 interface – COM 2.

1. Enable telnet interface in the Security settings.
2. In Serial Port settings, choose Serial control.
3. Power off the computer or control system and the COLLABORATE Pro system.
4. Use an RS-232 cable to connect the computer or control system RS-232 port to COM 2 on COLLABORATE Pro.
5. Power on the computer and the COLLABORATE Pro system.
6. From the computer or control system, start a serial session using HyperTerminal or another appropriate utility.
7. Set up the serial session as follows:

Connection name:

Protocol: Serial

Port: The COM Port number on your PC (Check under Device Manager)

Baud Rate: 9600

Data Bits: 8

Parity: None

Stop bits: 1

Using the API with a LAN Connection

If you have a computer connected to the LAN, you can send API commands to the COLLABORATE Pro system through telnet port 23.

1. On the computer, open a command line interface.
2. Start a Telnet session using the COLLABORATE system IP address.

Note: You cannot use Telnet to access the system if the Telnet Interface is disabled. Enable the Telnet API.

DESCRIPTIONS OF THE TELNET API (SPONTANIA)

The Telnet commands allow you to communicate with a remote computer that is using the Telnet protocol.

You can run **telnet** without parameters in order to enter the telnet context, indicated by the Telnet prompt (**telnet>**). From the Telnet prompt, use the following commands to manage a computer running Telnet Client.

ENABLING THE TELNET API (Before entering Spontania)

To enable the Telnet API:

1. Click **Settings > General > Security**
2. Check the **Enable Telnet Interface** checkbox.

TELNET API (SPONTANIA)

Key	Description	Arguments	Example
hangup	Hanging up session		hangup
camerahome	Return PTZ camera to default position	—	camerahome
camerapos	Save or restore camera position from preset	Action: save, restore Position: 1-9	camerapos save 2
camerastart	Start camera movement pan, tilt, zoom in different direction	Direction: <input type="checkbox"/> u – up <input type="checkbox"/> d – down <input type="checkbox"/> l – left <input type="checkbox"/> r – right <input type="checkbox"/> zi – zoom in <input type="checkbox"/> zo – zoom out	camerastart u camerastart up
camerastop	Stop camera movement	Direction: <input type="checkbox"/> spt – stop pan tilt <input type="checkbox"/> sz – stop zoom	camerastop sz
help	Display all telnet commands and notifications.		help
recording	Start or stop recording.	Parameter: <input type="checkbox"/> start <input type="checkbox"/> stop	recording start
changelayout	Toggles the layout in Spontania.		changelayout
rotatevideos	Rotates the video users list in Spontania		rotatevideos
listcontacts	Retrieve the local user contact list.		listcontacts
invite	Invites a contact to join the current session	User ID	invite 12345
set	Set parameter value	Parameter: <input type="checkbox"/> camera <input type="checkbox"/> mic_all <input type="checkbox"/> camera_all	set mic_all on set camera_all off
sharelaptop	Share DataPoint when it is connected to the unit.	Parameter: <input type="checkbox"/> start <input type="checkbox"/> stop	sharelaptop start

sharewireless	Start wireless sharing when there is at least 1 sender connected to the unit.	Parameter: <input type="checkbox"/> start <input type="checkbox"/> stop	sharewireless start
changewirelesslayout	Change wireless layout while wireless is being shared.	Parameter: <input type="checkbox"/> auto <input type="checkbox"/> single <input type="checkbox"/> preview	changewirelesslayout single
nextsender	When more than one sender is shared in preview or single layout, change between main senders.		nextsender
sharehdm1 / sharehdm2	Start sharing HDMI content depending on connected devices.	Parameter: <input type="checkbox"/> start <input type="checkbox"/> stop	sharehdm2 start

Chapter 11: Specifications

The following are the COLLABORATE Pro specifications.

Video Specifications	
Transmission Speed	<input type="checkbox"/> SIP / H.323: 96 Kbps - 6Mbps
Video Standards	<input type="checkbox"/> H.261, H.263, H.263+/++, H.264
Live Video Resolution	<input type="checkbox"/> QCIF (176 x 144 pixels) <input type="checkbox"/> QVGA (320 x 240 pixels) <input type="checkbox"/> CIF (352 x 288 pixels) <input type="checkbox"/> SIF (352 x 240 pixels) <input type="checkbox"/> VGA (640 x 480 pixels) <input type="checkbox"/> 4CIF (704 x 576) <input type="checkbox"/> 4SIF (704 x 480) <input type="checkbox"/> 720p (1280 x 720 pixels) <input type="checkbox"/> 1080p (1920 x 1080 pixels)
Video Frame Rate	<input type="checkbox"/> Up to 10 fps: 96 Kbps <input type="checkbox"/> Up to 20 fps: 128 to 192 Kbps <input type="checkbox"/> Up to 30 fps: 320 Kbps and above <input type="checkbox"/> Up to 60 fps (720p): 1536 Kbps and above <input type="checkbox"/> Up to 60 fps (1080p): 2560 Kbps and above
Video Inputs	<input type="checkbox"/> 2X HDMI
Video Outputs	<input type="checkbox"/> HDMI <input type="checkbox"/> Display Port
HD Simulcast	<input type="checkbox"/> Integrated Multicast Viewer
Audio Specifications	
Audio Features	<input type="checkbox"/> Full-duplex echo cancellation <input type="checkbox"/> Automatic noise suppression (ANS) <input type="checkbox"/> Automatic gain control (AGC)
Audio Standards	<input type="checkbox"/> 20 KHz: AAC-LD <input type="checkbox"/> 7 KHz: G.722, G.722.1 <input type="checkbox"/> 3.4 KHz: G.711, G.723.1, G.728, G.729 <input type="checkbox"/> AMR (3G)

Data Specifications	<input type="checkbox"/> Data Sharing Methods <input type="checkbox"/> Laptop plug in <input type="checkbox"/> HD DataPoint <input type="checkbox"/> USB storage key <input type="checkbox"/> Documents: PPT, PPS, XLS, XLSX, DOC, DOCX, PDF <input type="checkbox"/> Video clips (AVI, MPEG, WMV, MP4 etc.) <input type="checkbox"/> Graphic files (BMP, GIF, TIF, etc.)
HD Dual Stream	<input type="checkbox"/> Sharing of file, or the HDMI input <input type="checkbox"/> H.239 support <input type="checkbox"/> Sending and receiving capability <input type="checkbox"/> 2 live video sources + 1 data source <input type="checkbox"/> Resolutions supported: 1080p, 720p, XGA, 4CIF SVGA, VGA, CIF, QVGA, QCIF
Display	<input type="checkbox"/> Single – Display port or HDMI <input type="checkbox"/> Dual – Display port + HDMI
Networking Specifications	
Standards Supported	<input type="checkbox"/> SIP Protocol: RFC 3261 <input type="checkbox"/> ITU-T: H.323 v4.2 Annex Q (FECC)
Peripheral Specifications	
Pan-Tilt-Zoom Camera Unit	<input type="checkbox"/> PTZ Camera: 18x Zoom
Features Specifications	
Dialing Modes	<input type="checkbox"/> Manual <input type="checkbox"/> Contacts <input type="checkbox"/> Directory <input type="checkbox"/> Recent calls <input type="checkbox"/> Multicast viewer
Security	<input type="checkbox"/> Encryption using H.235 (AES) <input type="checkbox"/> Search and filter packet ordering <input type="checkbox"/> Packet duplication <input type="checkbox"/> AES is NIST validation <input type="checkbox"/> Firewall traversal using NetPoint H.460 protocol and ClearOne Tunneling proprietary protocol <input type="checkbox"/> NAT – Network Address Translation <input type="checkbox"/> Supports restricted access to users via admin

Directory Services	<ul style="list-style-type: none"> <input type="checkbox"/> 1000+ local number directory <input type="checkbox"/> 10,000+ global number directory <input type="checkbox"/> H.350 support (COLLABORATE Central mode) <input type="checkbox"/> LDAP Directory support <ul style="list-style-type: none"> ○ Open LDAP ○ Microsoft ILS, SiteServer, Active Directory and Exchange <input type="checkbox"/> Search and filter queries
Environmental	<ul style="list-style-type: none"> <input type="checkbox"/> 0 - 40°C temperature <input type="checkbox"/> 15 - 80% humidity <input type="checkbox"/> Universal Power Supply: <ul style="list-style-type: none"> ○ Input 100~240VAC@1.8A ○ Frequency 50/60 Hz <input type="checkbox"/> PS Output / Appliance Input: <ul style="list-style-type: none"> ○ 19VDC@6.32A Max
Language Support	English, French, German, Spanish, Italian, Russian, Chinese (traditional and simplified), Japanese and Korean

Chapter 12: Network Requirements

IN THIS CHAPTER

In order to operate a videoconferencing via the network, some network settings must be set by your network manager.

SYSTEM PLACED IN THE DMZ:

1. A reserved static IP address
2. Subnet Mask
3. Default Gateway address
4. DNS address

SYSTEM PLACED IN LAN:

If DHCP is available and the Collaborate Pro is connected behind firewall, select one of the following 3 options to operate the system:

1. Forward the following ports to the video conferencing system in your Firewall :
 - 389 TCP
 - 1718-1719 UDP
 - 1720 TCP
 - 1731 TCP
 - 5004-6004 TCP and UDP
 - 80 TCP
 - 23 TCP

Ports to open when using SIP:

- 5060-5061 TCP and UDP
- 5004 UDP
- 10000 UDP (SIP gate service - usually 3478/9)
- 16348-32768 UDP (RTP, RTCP multimedia streaming)

Ports to open when Spontania:

- 443 TCP
- 6000-6100 UDP
- 5222 TCP (Presence)

2. Network Address Translation (NAT):

The NAT address can be configured from Collaborate Pro Network settings form (Settings → Advanced → Firewall. The NAT mode can be configured to Automatic / Manual. Configure the system IP in the Broadband Router DMZ host.

3. Firewall Traversal server:

The Collaborate Pro can be registered to NetPoint firewall traversal server. The NetPoint server allows end points behind firewalls to communicate with other end points, both in WAN and behind other firewalls (NetPoint server address can be provided by ClearOne representative).

In network Settings → Advanced → H.323, To configure a connection to a NetPoint server enter the required details in the following fields: Server address (NetPoint IP address) and user name. Select the protocol you want to use to connect your call, H.460 or Tunneling.