



Medialon Audio Server Pro Dante

User Reference Manual

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1 Safety Instructions

1.1 Multilingual Safety Manual

This section is reproduced in the Medialon Safety Manual which provides safety instructions in a number of other languages.

1.2 Introduction

About this document

Read this document attentively. It contains important information to prevent personal injury while installing and using the “Medialon Show Control”. Furthermore, it includes several cautions to prevent damage to the “Medialon Show Control”.

Ensure that you understand and follow all safety guidelines, safety instructions and warnings mentioned in this chapter before installing the “Medialon Show Control”.

Clarification of the term “Medialon Show Control” used in this document

When referring in this document to the term “Medialon Show Control” means that the content is applicable for following Medialon products:

- Medialon Showmaster LE
- Medialon Showmaster PRO
- Medialon MAS PRO Dante
- Medialon Show Control Machine Pro

1.2.1 Mandatory Safety Rules and Precautions

Notice on Safety

This equipment is built in accordance with the requirements of the international safety standards IEC60950-1, EN60950-1, UL60950-1 and CAN/CSA C22.2 No.60950-1, which are the safety standards of information technology equipment including electrical business equipment. These safety standards impose important requirements on the use of safety critical components, materials and insulation, in order to protect the user or operator against risk of electric shock and energy hazard and having access to live parts. Safety standards also impose limits to the internal

Safety Instructions

and external temperature rises, radiation levels, mechanical stability and strength, enclosure construction and protection against the risk of fire. Simulated single fault condition testing ensures the safety of the equipment to the user even when the equipment's normal operation fails.

1.3 Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power supply cord or plug is damaged, liquid has

been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

1.4 Precautions

Please read carefully before proceeding

Please keep this manual in a safe place for future reference.



WARNING

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damage, fire or other hazards or physical injury to you or others, or damage to the device or other property. These precautions include, but are not limited to, the following:

Power supply / Power cord

- Only use the voltage specified as correct for the device. The required voltage is printed on the name plate of the device.
- Use only the specified power cord.
- If an extension cord is necessary, a cord with a current rating at least equal to that of the projector should be used. A cord rated for less amperage than the device may overheat.
- Do not place the power cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.
- Remove the electric plug from the outlet when the device is not to be used for extended periods of time, or during electrical storms.
- When removing the electric plug from the device or an outlet, always hold the plug itself and not the cord. Pulling by the cord can damage it.

Do not open

- Do not open the device or attempt to disassemble the internal parts or modify them in any way. The device contains no user-serviceable parts. If it appears to be malfunctioning, discontinue use immediately and have it inspected by qualified Medialon service personnel.

Water warning

- Do not expose the device to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings.
- Never insert or remove an electric plug with wet hands.
- Do not expose the device to excessive dust or vibrations, or extreme cold or heat (such as direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel configuration or damage to the internal components.
- Do not place the device in an unstable position where it might accidentally fall over.
- Do not block the vents. This device has ventilation holes on the rear and sides to prevent the internal temperature from rising too high. In particular, do not place the device on its side or upside down, or place it in any poorly ventilated location, such as a bookcase or closet.

Connections

- Before connecting the device to other devices, turn off the power for all devices. Be sure to connect to a properly grounded power source.

To prevent battery explosion

- Danger of explosion if battery is incorrectly installed.
- Replace only with the same or equivalent type recommended by the manufacturer.
- For disposal of used batteries, always consult federal, state, local and provincial hazardous waste disposal rules and regulations to ensure proper disposal.

If you notice any abnormality

- If the power cord or plug becomes frayed or damaged, or if there is a sudden loss of function during use of the device, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified Medialon service personnel.
- If this device is dropped or damaged, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified Medialon service personnel.

Note for ambient conditions

- Allowed ambient temperature range: 0°C (32°F) to 50°C (122°F) Rated humidity = 10% RH to 80% RH at 25°C Non-condensed.

On servicing

- Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage potentials and risk of electric shock.
- Refer all servicing to qualified service personnel.
- Attempts to alter the factory-set internal controls or to change other control settings not specially discussed in this manual can lead to permanent damage to the device and cancellation of the warranty.
- Remove all power from the device and refer servicing to qualified service technicians under the following conditions:
 - When the power cord or plug is damaged or frayed. If liquid has been spilled into the equipment.
 - If the product has been exposed to rain or water.
 - If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of the other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - If the product has been dropped or the cabinet has been damaged.
 - If the product exhibits a distinct change in performance, indicating a need for service.
- Replacement parts: When replacement parts are required, be sure the service technician has used original Medialon replacement parts or authorized replacement parts which have the same characteristics as the Medialon original part. Unauthorized substitutions may result in degraded performance and reliability, fire, electric shock or other hazards. Unauthorized substitutions may void warranty.
- Safety check: Upon completion of any service or repairs to this device, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

Installation

The device may only be installed and operated by authorized, suitably qualified personal. More advanced configurations of the apparatus may only be made by skilled personnel with knowledge of sound technology. Place the device on a flat, solid and stable surface or fix the device to an appropriate rack mounting system that can support the total weight of the device. If you use an unstable cart or stand, the device may fall, causing serious injury to a child or adult and serious damage to the device.

Modifications to the unit

Do not modify this equipment without authorization of the manufacturer. No serviceable parts inside.

1.5 Production address

Factory Barco NV,
President Kennedypark 35,
8500 Kortrijk, Belgium

1.6 Mandatory Safety Rules

Although Medialon Control System V6 Software is designed to control different kinds of hardware equipment, such as relays to control fireworks, Medialon Control System V6 can NOT be used to ensure safety of users.

Users must make sure that all dangerous equipment controlled directly or indirectly by Medialon Control System V6, includes their own safety procedures and process.

Medialon Control System V6 is not designed to ensure safety process.

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In this License Agreement:

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- Medialon OpenCap XML is a protocol designed to connect to Medialon Manager and/or Medialon Showmaster hardware,
- Medialon OpenCap XML gives the ability to Medialon Manager software and/or Medialon Showmaster hardware to expose properties and be controlled,
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Any controversy or claim arising out of or relating to this License Agreement, or the breach thereof, shall be settled by arbitration subject to UK law.

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The Medialon solution contains software components released under an Open Source license. A list of the third-party software components used (open source and other) is available in the Software's README files, through the "My Medialon" section of the Medialon website or through other (online) means. The applicable license terms, copyright notices and, as relevant, source code access apply as set out in this MEDIALON EULA.

2.2 Warranty Terms and Conditions for Medialon Hardware

MEDIALON warrants that the Medialon hardware and all components are free from defects in material and workmanship for a period of 1 Years from the date of delivery to the first owner. This warranty is not transferable.

Warranty will be void if manufacturer's installation and use instructions are not followed.

Warranty will be void unless our factory approved parts are used and properly installed by an authorized representative.

Warranty does not extend to parts misused, mishandling, neglect, accident, damage, flood, fire, or other causes beyond the control of the manufacturer. The warranty does not extend to consequential damage.

To make a warranty claim, visit www.medialon.com to obtain an RMA (*Return Material Authorization*) number. No claim will be accepted without an RMA number.

The equipment in need of service should be shipped (with RMA) to the address on the RMA form, freight pre-paid. Any returned items deemed faulty due to manufacturer defect will be repaired or replaced and shipped back to the customer at no charge to the customer.

3 Introduction

In this section you will discover the main architecture of Medialon Audio Server, what its main elements are and how they interact with each other.

This section also helps those who are new to Medialon Audio Server to understand its core engine and ease their understanding of the following chapters.

3.1 Introduction

The Medialon Audio Server (MAS PRO) is a Professional audio server for both multi-track application as well as multi zoning.

MAS PRO is designed to ensure maximum reliability for demanding live entertainment or rides audio control, as well as for centralized control of large amount of audio channels in museums or showrooms.

The Medialon Audio Server allows playback of multiple audio channels. It is not a regular multi-track playback unit which plays all files at the same time but a real independent channels server where each file can be started when needed. Each of its multiple channels can be synchronized together or by groups. Its high-quality Dante interface provides state-of-the-art audio quality.

Thanks to the Medialon Audio Server local interface, each channel can be started independently and at any time.

With Medialon Audio Client Pro external control feature, each channel can be started independently or all together.

Thanks to Medialon Audio Server position tracking capability, programming video and light effects synchronized to audio is very easy with Medialon Manager Show Control software.

Several Medialon Audio Servers can be linked over IP and synchronized together.

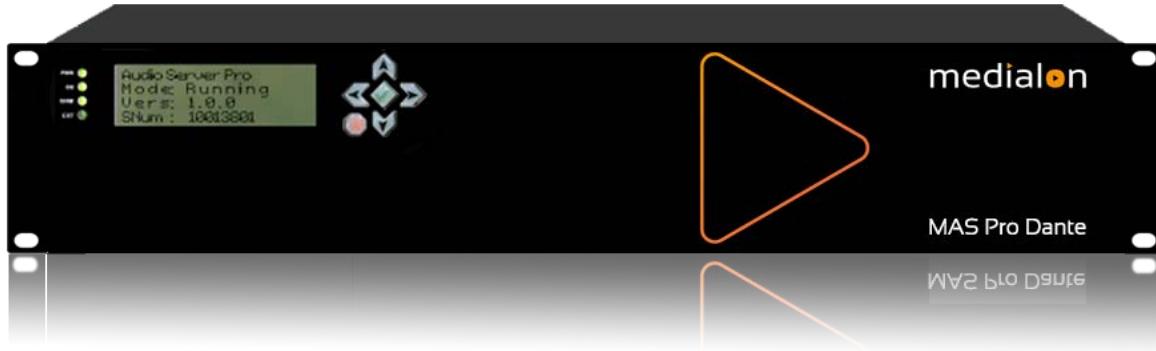
3.2 Overview of Medialon Audio Server

The Medialon Audio Server is a system which can playback up to 128 mono audio channels. Channels may be played either independently or synchronized by groups.

3.2.1 Main Features

Hardware/Software Platform

The Medialon Audio Server PRO is a pre-configured hardware and software package running Windows Embedded.



The MAS PRO models provide a large amount of audio channels:

MAS PRO Dante:

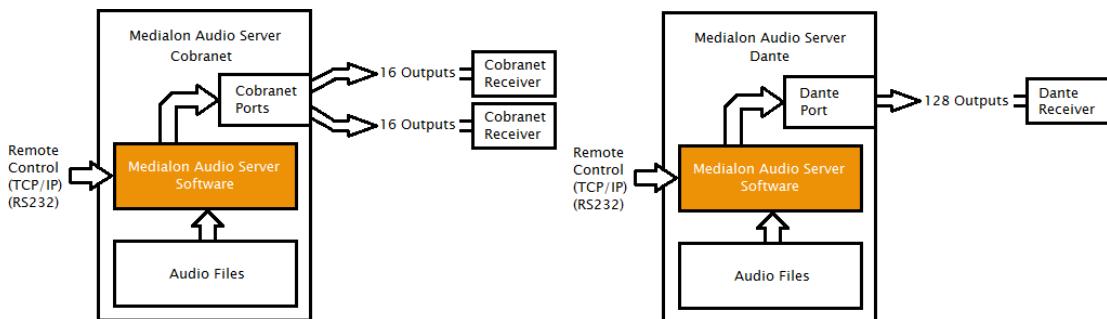
- 16 audio channels
- 32 audio channels
- 48 audio channels
- 64 audio channels
- 96 audio channels
- 128 audio channels

Dante Configurations

The MAS PRO Dante is equipped of 1 Dante port which can provide up to 128 audio output channels. It can also be set as Master clock on the network.

3.2.2 Architecture

The following diagram shows Medialon Audio Server architecture.



Audio File Formats

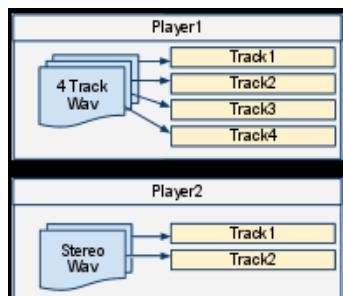
The Medialon Audio Server supports Wave in either Stereo, Mono or Multitrack 16- or 24-bit format. See more about [Audio File Format](#).

Important: Medialon Audio Server PRO ONLY supports 48kHz as sample rate.

Audio Players

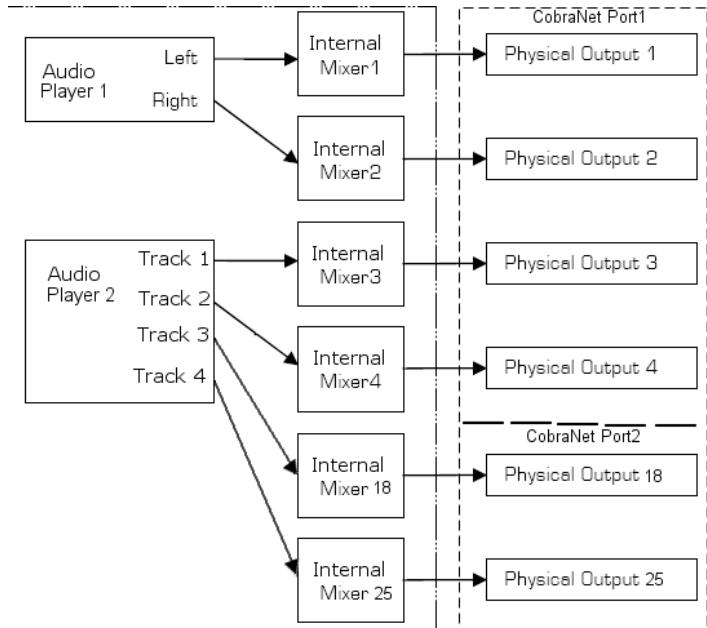
The Medialon Audio Server can be configured in order to allow the concurrent use of mono and stereo and multi tracks media files. Medialon Audio Server uses audio players to perform these files.

An audio player is defined by one or several audio tracks. The number of tracks correspond to the type of file played mono (1 track), stereo (2 tracks Left and Right) and multi tracks where the number of tracks depends of the file.

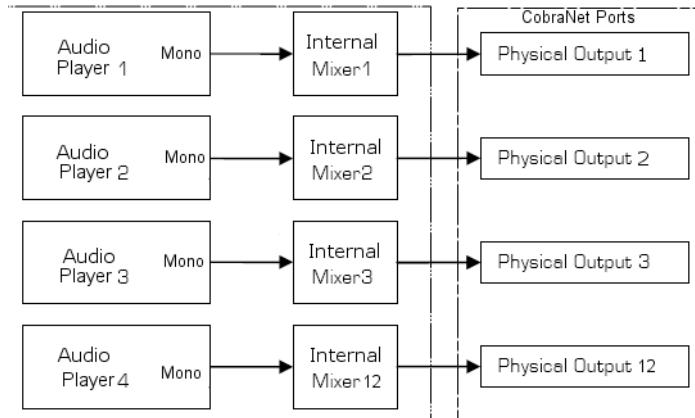


Audio Output Mapping

From the user standpoint, the Medialon Audio Server manages a set of logical audio players. This is done by the following logical track and physical output mapping for each player.

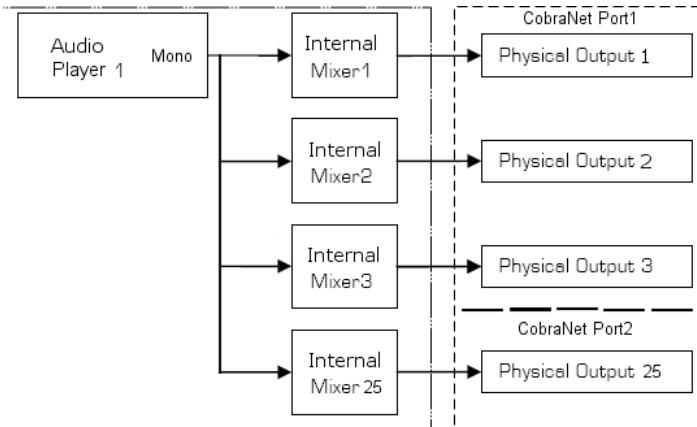


Below is a configuration where all of the audio players are set to mono.

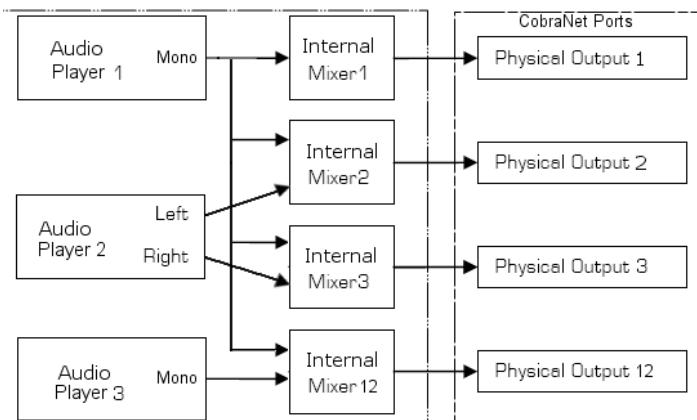


Introduction

An audio player track can be mapped to several physical outputs. see below a mono player mapped to 4 outputs.

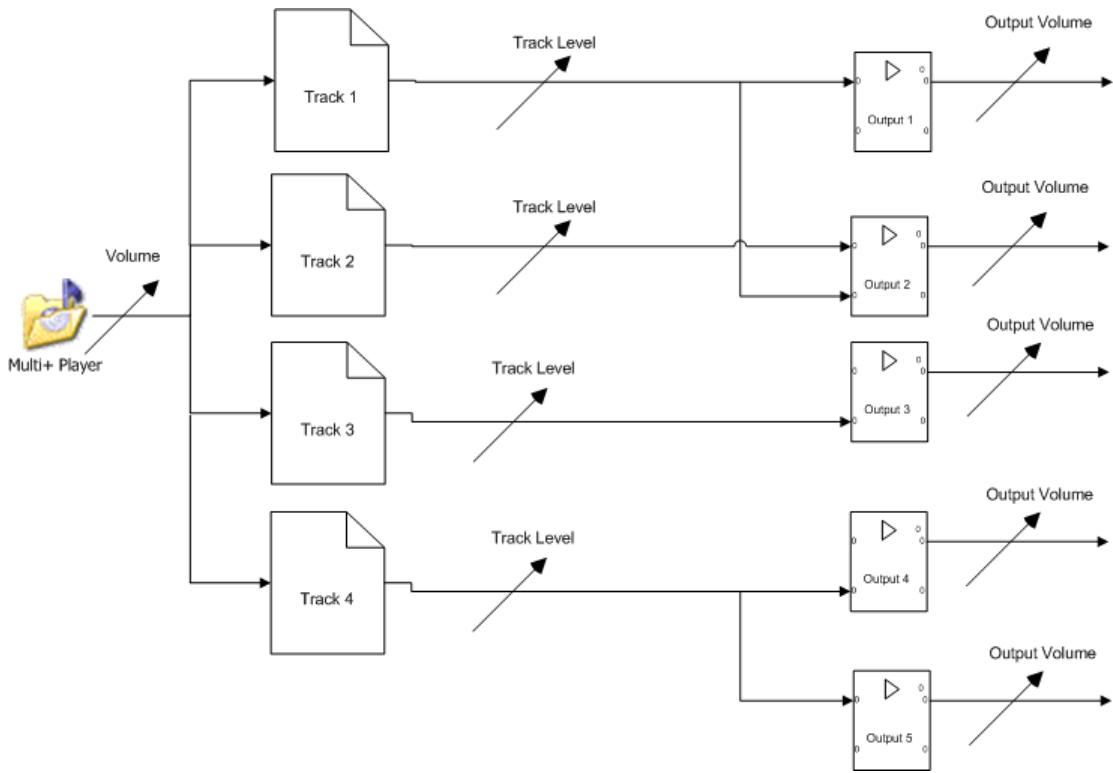


Internal mixer and mapping allows sharing the same physical output with several audio player tracks.



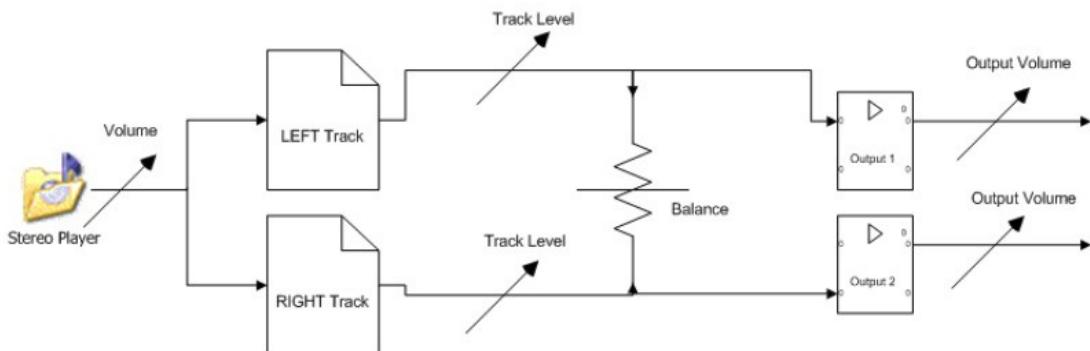
Audio Diagram

Different audio levels can be adjusted in Medialon Audio Server PRO.



- Player Volume adjusts the audio level of all tracks, it is the master audio level.
- Track Level allows adjusting the audio level of each track independently.
- Output Volume is used to adapt the MAS PRO audio output to the next audio device input.

Stereo players have a specific fader to manage the audio balance left and right.



Remote Control

Although it can be run as a standalone system, the Medialon Audio Server main purpose is to be controlled from a Medialon Control System through a TCP/IP Network. See more about Medialon Control System at <http://www.medialon.com/>.

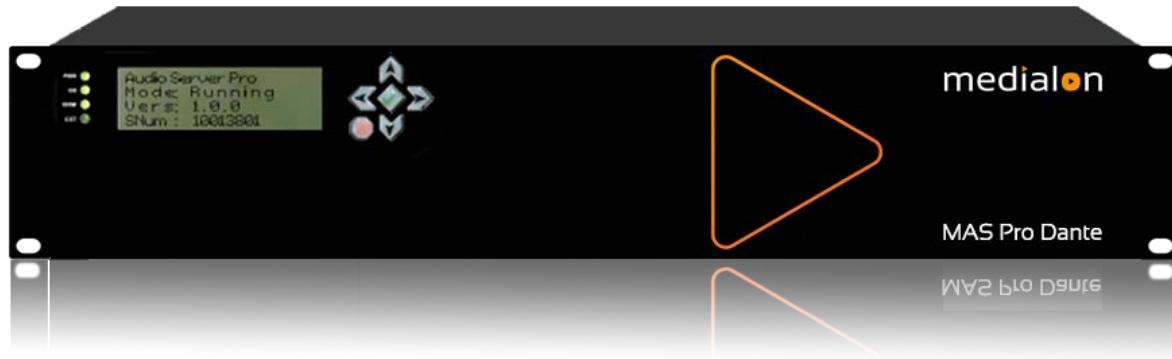
A remote client software which replicates the local server user interface is also provided. Medialon Audio Server can also be controlled through serial connection.

4 Installation

In this section you will learn how to correctly connect and start your Medialon Audio Server.

4.1 Get Started

The Medialon Audio Server PRO is shipped pre-configured and requires only a few steps to make it ready for exploitation.



4.1.1 Contents of the Package

- Medialon Audio Server PRO
- 1x IEC Power Cord
- 2x Rack mounting bracket

4.1.2 Connecting Medialon Audio Server PRO

Few connections are required to start your Medialon Audio Server PRO.

Keyboard, mouse and monitor are needed for the first start and setup. If you plan to control remotely your Medialon Audio Server, they can be removed after the settings operations.

- MAS Pro Dante Dante 1 port must be connected to the Dante network.

LAN 1 should be connected to the Dante network in order to use the Dante Controller utility which is installed on the MAS Pro. See more about [Dante Configuration](#).

Use LAN 2 for Ethernet connection and remote control of your Medialon Audio Server.

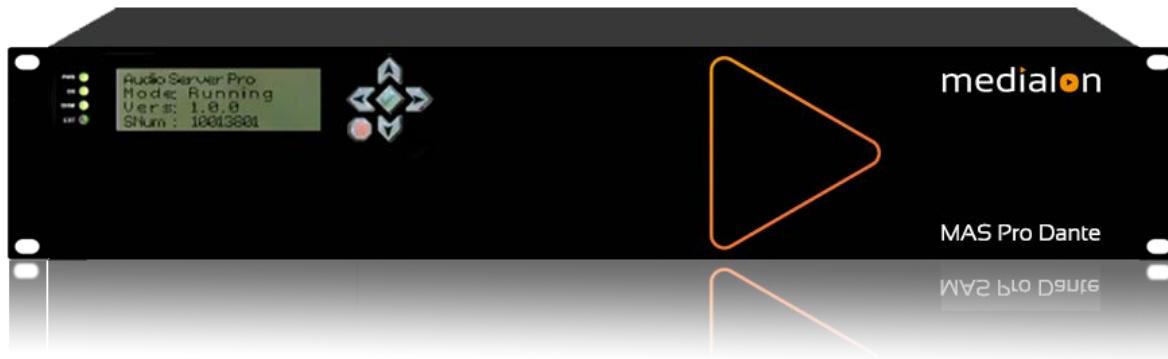
Rear Panel



- [COM1] / [COM2]: serial port used for external control, See more about [Serial External Control](#).
- [DVI 1]: DVI-I (Blue) monitor output, or transfer to VGA output by DVI-VGA adapter.
- [DVI 2]: DVI-D monitor connector.
- [LAN 1]: Ethernet connector for Dante mapping.
- [LAN 2]: Ethernet connector for external control or FTP.
- [USB 1-4]: USB ports available for mouse and keyboard, also used for MAS PRO updates.
- [Dante 1]: Dante port 1.
- [SYS]: multi-color LED indicating the Dante system status
 - Green: normal operation,
 - Orange: system failure).
- [CLK]: multi-color LED indicating the Dante sync status
 - Green (steady): confirms card is a Dante PTP slave; the card will sync to the clock embedded in the incoming Dante bitstream.
 - Green (blinking): confirms card is a Dante PTP master; the card is set (in Dante Controller) to generate the Dante clock which will be used by other units.
 - Orange: sync failure. [ERR]: reserved for future use.
- [POWER]: Power Connector 12 V DC 5 A. See [Power section](#) for details.

4.1.3 First Start

We recommend you connect Mouse, Keyboard and Monitor for the first use of the Medialon Audio Server. If you plan to control the Medialon Audio Server PRO via a remote, Keyboard, Mouse and Display are not necessary after the first boot.



Starting Procedure

Connect the power supply and press and hold the front key to start MAS PRO.

The front panel LCD will display the startup message.



Front Panel Controls

The figure below shows the front panel of Medialon Audio Server PRO.

- [LED]: Four LEDs indicate MAS PRO status.
- [LCD]: Status messages display on the 4-line LCD.
- [KP]: Six-button Function Keypad.

Use the keypad to scroll through MAS PRO's status information.



Keypad Functions

	<i>OK key</i>	Hold this key for more than 1 second to power on Medialon Audio Server.
		Hold this key for more than 4 seconds while the MAS PRO is powered on to reset Medialon Audio Server PRO.
	<i>Cancel key</i>	Hold this key for more than 4 seconds to power off (soft power) Medialon Audio Server.
	<i>Up arrow</i>	Scrolls display up. Holding this key for more than 1 second scrolls the display to the home position when the button is released.
	<i>Down arrow</i>	Scrolls display down.
	<i>Left arrow</i>	Not used.
	<i>Right arrow</i>	Not used.

LCD Display Messages

Each time an arrow button is pressed, the next line of information is displayed.

1. [Name] MAS PRO's user-defined Name.
2. [Mode] MAS PRO's current mode:
 - **Starting Up:** Medialon Audio Server PRO is starting up (from power-on until Medialon Audio Server PRO is ready)
 - **Running:** MAS PRO is running .
 - **Shutdown:** MAS PRO is shutting down. Reboot: MAS PRO is rebooting.
3. [Vers] MAS PRO's current firmware version.
4. [SerN] Serial Number.
5. [Addr] Current IP address.
6. [Mask] Subnet mask.

7. [Gway] IP Gateway addresss.
8. [MacA] MAC address.

LED Status Messages

Two LEDs give a quick overview of the main status of Medialon Audio Server PRO.



- **PWR:** Power LED, this LED lights green when power is present, regardless of whether MAS PRO is powered on.
- **OS:** Medialon Audio Server PRO LED, this LED indicates the current status of Medialon Audio Server PRO.
 - **Green:** Medialon Audio Server PRO is ready.
 - **Yellow:** Medialon Audio Server PRO is starting up.
 - **Red:** Error, MAS PRO has an internal system failure.
 - **Off:** MAS PRO is not running.

Network Settings

Medialon Audio Server PRO is configured to use DHCP to get its IP address. If your network installation has no DHCP server or requires static IP address, this address can be modified via the configuration menu. See more about [Network Settings Definition](#).

4.1.4 MAS PRO Startup Configuration

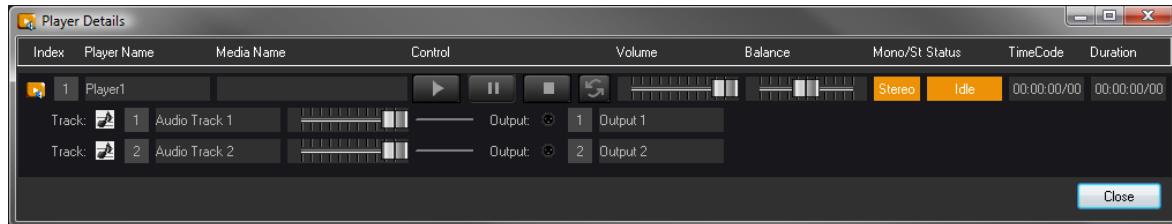
Medialon Audio Server PRO is delivered with a default audio configuration. See more about [Audio Configuration](#).

Installation



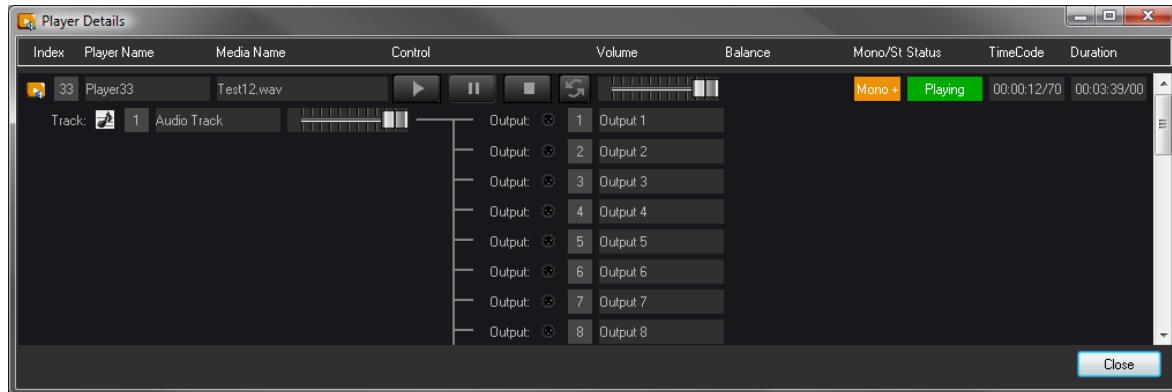
Players Configuration

At first start, 16 stereo players are available plus one mono+ player.



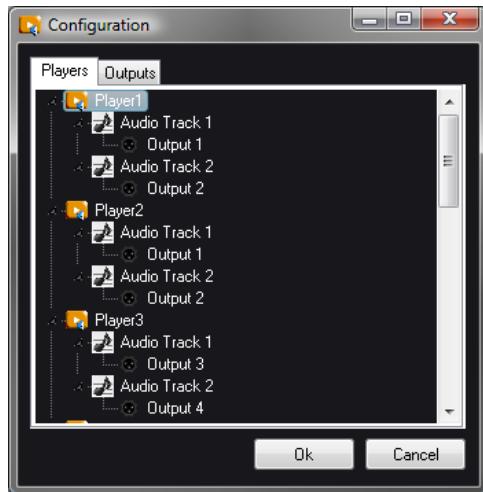
Output Mapping

Player 17 is a mono track player. This audio track is mapped to all 32 audio output.



Each pair of stereo players shares their outputs.

Installation



4.1.5 Add Audio Files

Any FTP client software can be used to transfer files to the Medialon Audio Server.

The screenshot shows an FTP client interface. The top bar says "Site distant : /". Below it is a tree view showing a single folder named "ConfigFiles". Under "ConfigFiles" are several files: "testmono00.wav", "Test0.wav", "Test1.wav", "Test10.wav", "Test11.wav", "Test12.wav", "Test13.wav", "Test14.wav", and "Test15.wav".

Nom de fichier	Taille de fichier	Type de fichier
..		Dossier de fichiers
ConfigFiles		Dossier de fichiers
testmono00.wav	26 386 478	Format Microsoft Wa...
Test0.wav	38 631 644	Format Microsoft Wa...
Test1.wav	38 631 644	Format Microsoft Wa...
Test10.wav	38 631 644	Format Microsoft Wa...
Test11.wav	38 631 644	Format Microsoft Wa...
Test12.wav	38 631 644	Format Microsoft Wa...
Test13.wav	38 631 644	Format Microsoft Wa...
Test14.wav	38 631 644	Format Microsoft Wa...
Test15.wav	38 631 644	Format Microsoft Wa...

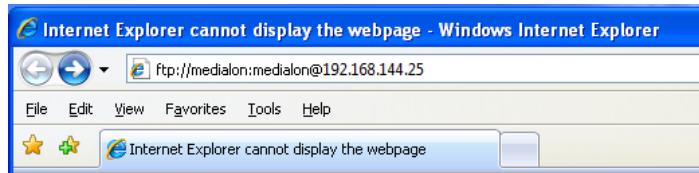
Medialon Audio Server FTP parameters:

- **FTP address:** MAS PRO IP address.
- **FTP Port:** 21.
- **Login username:** medialon.
- **Login password:** medialon.

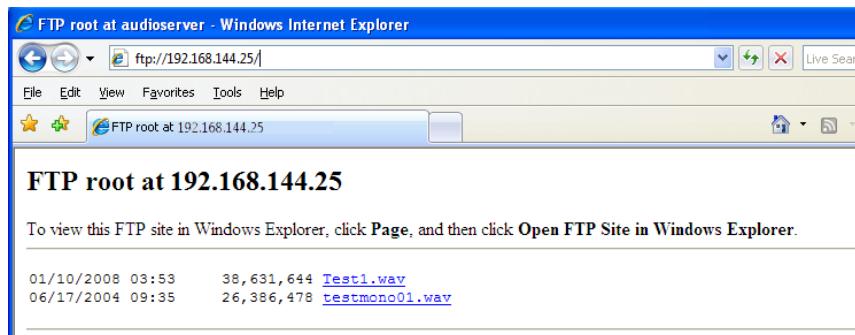
Installation

As an example, here is the procedure to transfer files with Microsoft Internet Explorer:

- Start Internet Explorer.



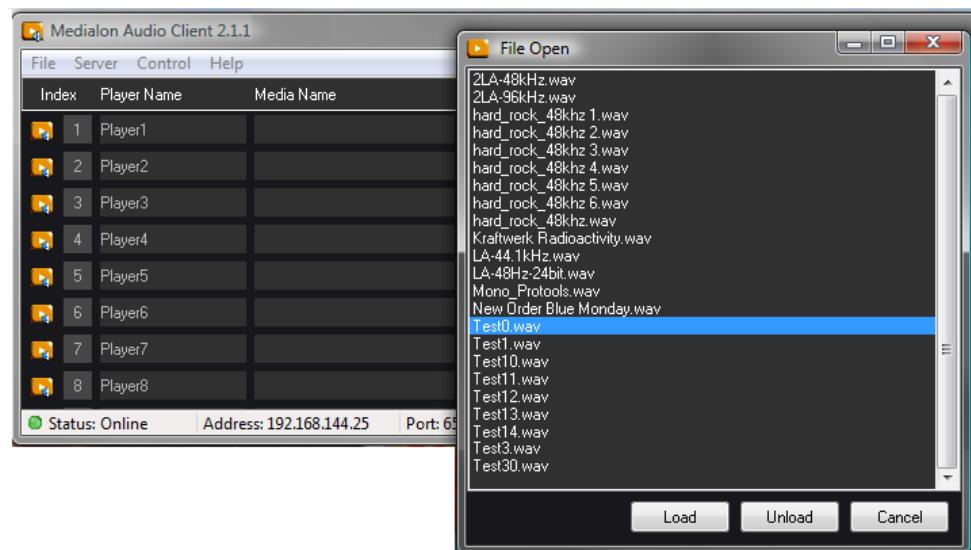
Type 'ftp://medialon:medialon@xxx.xxx.xxx.xxx' (xxx.xxx.xxx.xxx is MAS IP address) in the address bar and press the Enter key.



- Internet Explorer displays the content of the media folder.
- Drag/drop or Copy/Paste media files to the folder.

4.1.6 Play Audio Files

- From the main page, click on Media Name area corresponding to the player you want to use.



Installation

2. The media list opens.
3. Select a file and click Load
4. Press Play to start the media.
5. Use volume and balance fader to adjust the audio level.



See more about [Medialon Audio Server PRO Interface](#).

5 Using the Audio Server

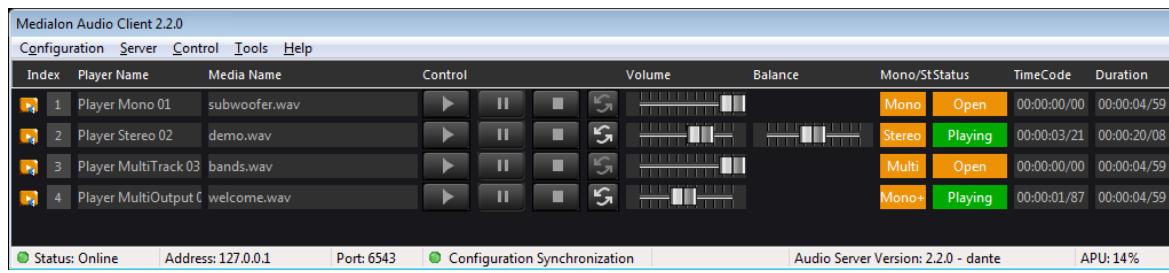
In this section you will learn how to use your Medialon Audio Server.

5.1 Medialon Audio Server PRO Interface

The Medialon Audio Server PRO provides a local user interface in order to play audio files and configure the system.

5.1.1 The Main Window

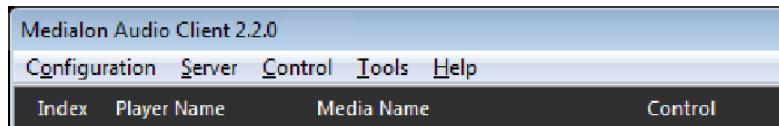
Medialon Audio Server PRO interface is automatically displayed after the system boots up.



Medialon Audio Server PRO main window is composed of a Menu bar, a Status bar and several Player bars.

Menu Bar

Medialon Audio Server PRO interface provides 5 main menus:



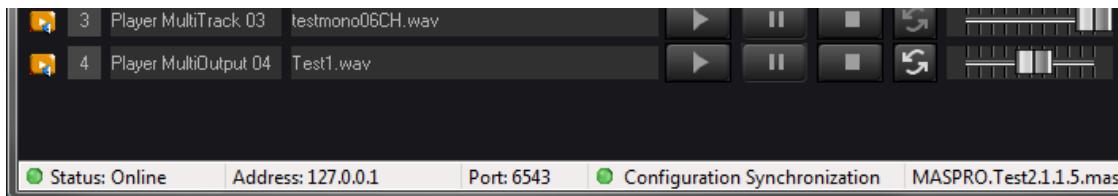
- **Configuration:** this menu allows you to
 - create, open or save audio configuration files. See more about [Configuration Files](#).
 - edit the audio configuration, see [Edit Configuration](#).
- **Server:** use this menu
 - to setup Medialon Audio Server PRO, see [Medialon Audio Server Setup](#).
 - to upgrade your MAS PRO, see [Updating Medialon Audio Server](#).
 - Shutdown or reboot Medialon Audio Server.

Using the Audio Server

- to set the Startup State of the Audio Server, see [MAS PRO Startup Status](#).
- **Control:** this menu provides server playback control, see [Menu Control](#).
 - Audio output volume control.
 - global player commands.
- **Tools:** use this menu to launch the Dante Controller utility for the audio network configuration.
- **Help:** See more about [Help](#).

Status Bar

At the bottom of the Medialon Audio Server PRO interface, there is a Status bar.



This bar gives the following information:

- **Status:** indicates if the server is online or not. LED turns to green or red.



- **Address:** it is the connected Medialon Audio Server address.
- **Port:** it is the IP Port used by the Medialon Audio Server to listen to new client.
- **Configuration Synchronization:** indicates if the audio configuration is synchronized between the server and the client. LED turns to green or red.



- **Filename.masConfig:** name of the current loaded audio configuration. This section could be blank.
- **Audio Server:** Current version of Medialon Audio Server and its model.



- **APU (Audio Process Unit):** represents the rate of process used by the MAS PRO. APU close to 100% may cause sound drops, pops...

Player Bar

A Player Bar provides the necessary controls and displays related to that player. The number of Players bars depends of the audio configuration. The window can be scrolled with the vertical scroll bar located at the right of the window.

Index	Player Name	Media Name	Control	Volume	Balance	Mono/St Status	TimeCode	Duration
1	Player Mono 01	subwoofer.wav	▶ II ■ ⏪	[volume]	[balance]	Mono Open	00:00:00/00	00:00:04/59
2	Player Stereo 02	demo.wav	▶ II ■ ⏪	[volume]	[balance]	Stereo Playing	00:00:03/21	00:00:20/08
3	Player MultiTrack 03	bands.wav	▶ II ■ ⏪	[volume]	[balance]	Multi Open	00:00:00/00	00:00:04/59
4	Player MultiOutput 0	welcome.wav	▶ II ■ ⏪	[volume]	[balance]	Mono+ Playing	00:00:01/87	00:00:04/59

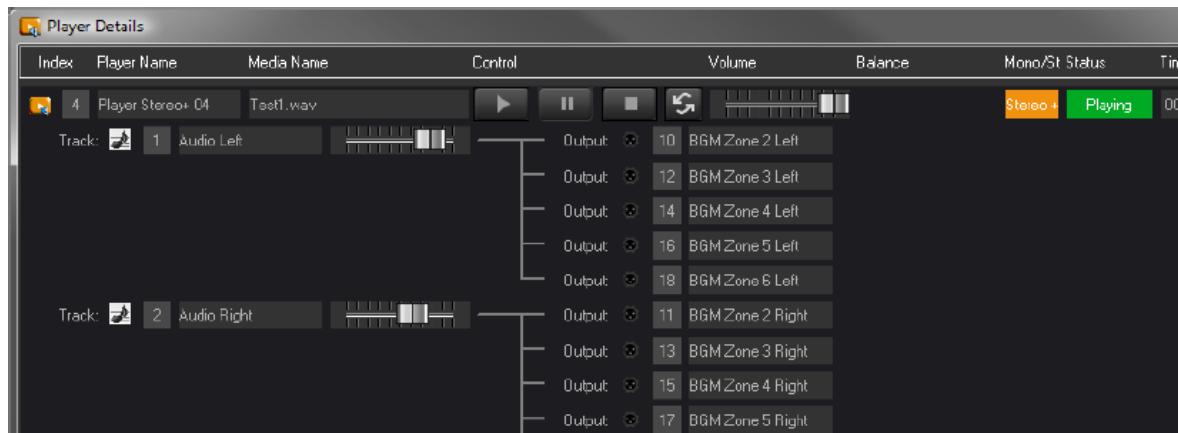
Details of all controls are shown in the following paragraphs.

Click on the the index icon to open the Player details window.

5.1.2 Player Details

Medialon Audio Server PRO Player details window gives access to the same Player controls available in the main window. In addition, you can also act on each audio track available in the Player.

The following paragraphs detail the use of the elements of a Player.



Player Controls

This section is common to the Player bar in the main window.

Player Name

Index	Player Name	Media N
4	Player Stereo+ 04	Test1.w

This is the name of the Audio Player.

You can change this name when you edit the MAS PRO configuration.

Each Audio Player is also identified by a Player Index.



In main window, click on the the index icon to open the Player details window.

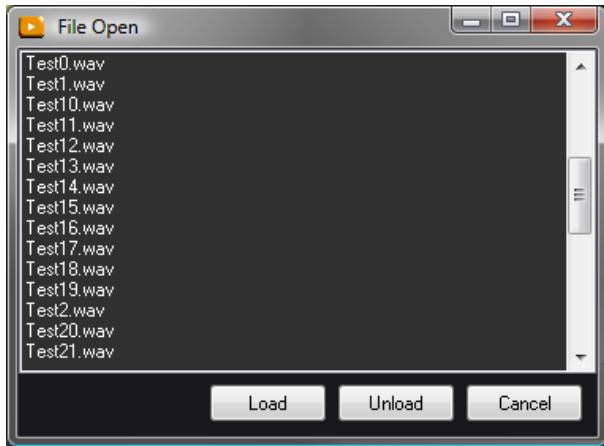
Media Name

This text box shows the name of the audio file currently loaded on the Audio Player. It is blank if no media is loaded.

To load media:



- Click on the Media Name text box to open the Media Library.
- This will display a media selector which shows all available Audio files.



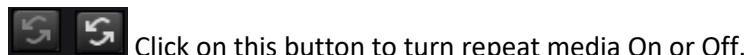
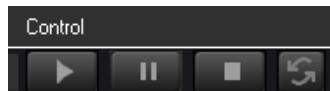
- Select a media item and click the OK button (or double-click on the file name).
- The Audio file name will appear in the Media Name text box if it is successfully loaded. Click on Unload button to close the media. The player has no media to play.



Consult [Add Audio Files](#) to add new audio files.

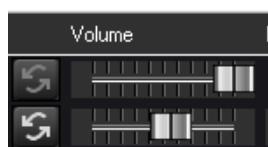
Transport Commands

Play, Pause and Stop commands are available in the Control section.



Volume

The Volume slider sets the volume of the Audio Player:



- Move the slider to its rightmost position for full volume.
- Move the slider to the leftmost position to mute the Audio Player.

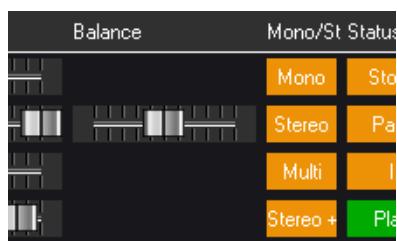
Hold the CTRL key to move all volume sliders at the same level.

Balance

Balance slider is available with stereo players. You can adjust the proportion between the left and right audio track.

Mono/Stereo/Multi

Audio Player can be used as Stereo, Mono or Multitrack player, Mono/ST indicates the type of Player:



- **Mono:** Player with 1 audio track mapped to 1 audio output.
- **Mono+:** Player with 1 track mapped to several outputs.
- **Stereo:** Player with 2 audio tracks, each track goes to 1 different output.

- **Stereo+:** Player with 2 audio tracks, audio tracks are mapped to several outputs or to the same one.
- Multi: Player with more than 2 audio tracks, each track goes to 1 different output.
- **Multi+:** Player with more than 2 audio tracks, audio tracks are mapped to several outputs or to the same one.

Status

This text box shows the status of the Audio Player:



Different Audio Player Status are:

- **Idle:** no media file has been loaded on this Audio Player since MAS PRO power up.
- **Open:** a media file is loaded on this Audio Player.
- **Closed:** the media file couldn't be loaded.
- **Playing:** the media is playing.
- **Paused:** the media is paused
- **Stopped:** the media is stopped
- **Not Online:** the Medialon Audio Server is not online.

TimeCode / Duration

TimeCode shows the current position of the media:

TimeCode	Duration
00:02:21/13	00:04:59/16

TimeCode is displayed with hundredth of second unit precision. The format is hh:mm:ss/ff where:

hh = Hours

mm = Minutes

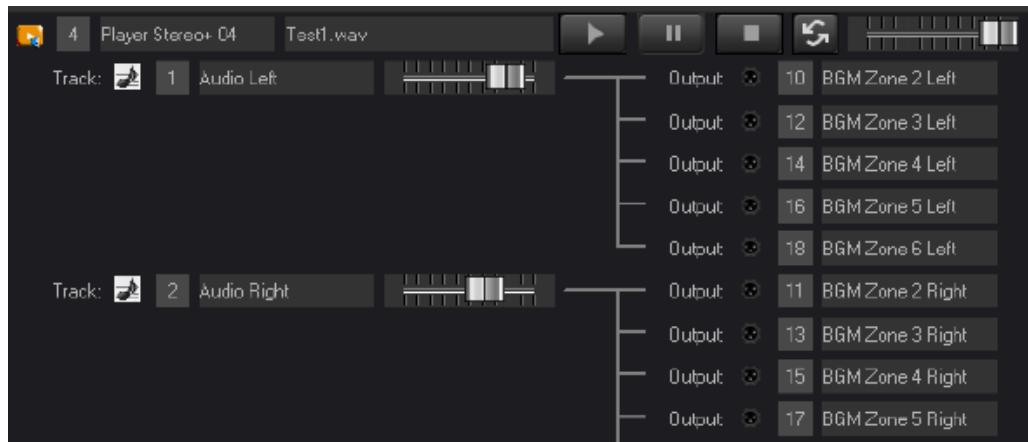
ss = Seconds

ff = Hundredths of seconds

The media duration is set to 00:00:00/00 if no audio file is loaded.

Track Controls

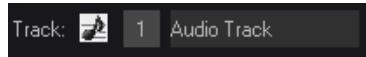
This section presents the audio track controls, the number of tracks depends of the Player configuration.



This section also displayed the output mapping.

Track Name

This is the name of the Audio track:



You can change this name when you edit the MAS PRO configuration. Each Audio track is also identified by a track Index.

Track Volume

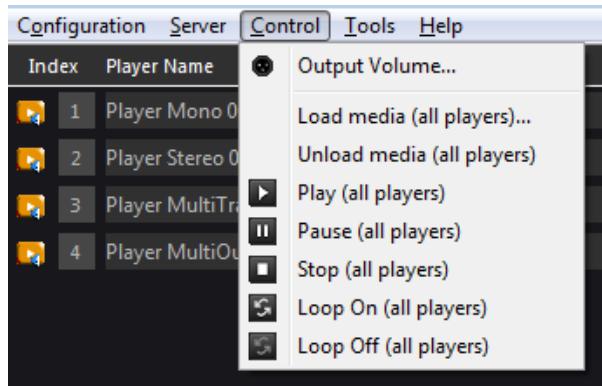
The Volume slider sets the volume of the Audio track.



- Move the slider to its rightmost position for full volume.
- Move the slider to the leftmost position to mute the Audio Track.

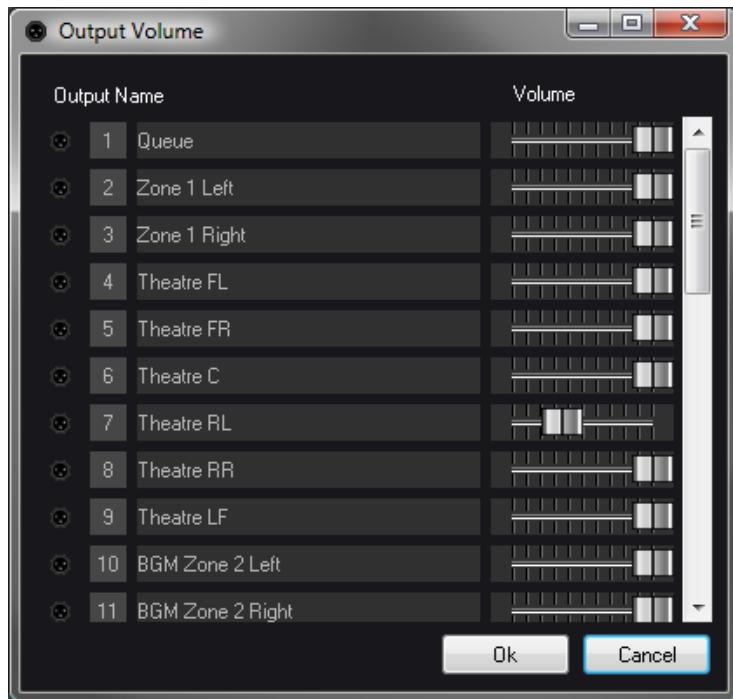
 Hold the CTRL key to move all track volume sliders at the same level.

5.1.3 Menu Control



Output Volume

The Volume slider sets the volume of the Audio output.



- Move the slider to its rightmost position for full volume.
- Move the slider to the leftmost position to mute the Audio Output.



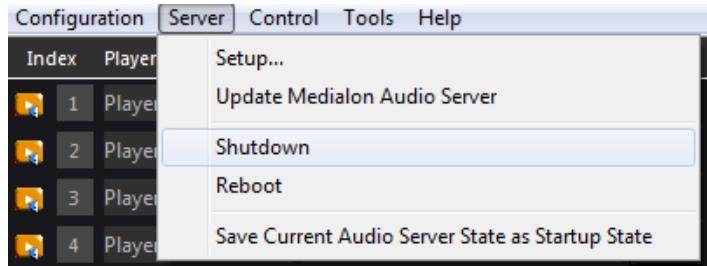
Hold the CTRL key to move all volume sliders at the same level.

Command All Players

With these commands (Play, Pause, Stop, Load/Unload media, Loop On/Off), you send the order to all the Players present in the Medialon Audio Server PRO at the same time.

5.1.4 Shutdown / Reboot

The MAS Pro can be shut down or rebooted by using the Server Menu.



These functionalities are available on the Medialon Audio Client when a connection is established with an Audio Server (Status Online).

5.2 Audio Configuration

The Medialon Audio Server PRO can be used with different audio configurations.

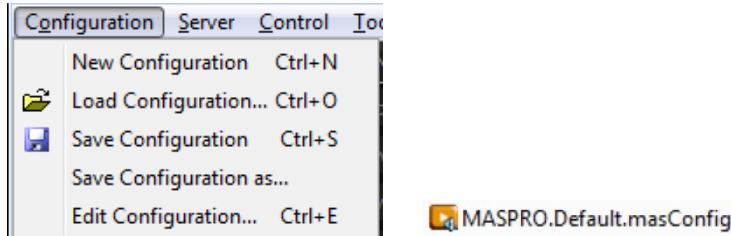
5.2.1 Configuration Management

MAS PRO audio configuration can be edited with the local interface or remotely from a Medialon Audio Client PRO.

Configuration Files

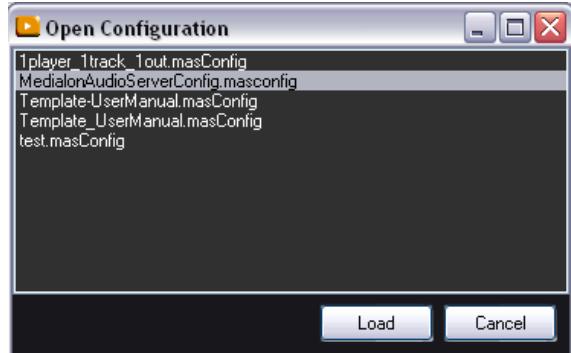
Medialon Audio Server PRO audio configuration can be saved as files.

- Go to Configuration menu:

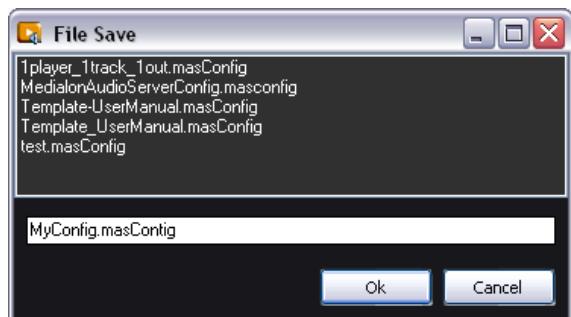


- **New Configuration:** create a new empty configuration.
- **Load Configuration:** load an existing configuration file.

Using the Audio Server

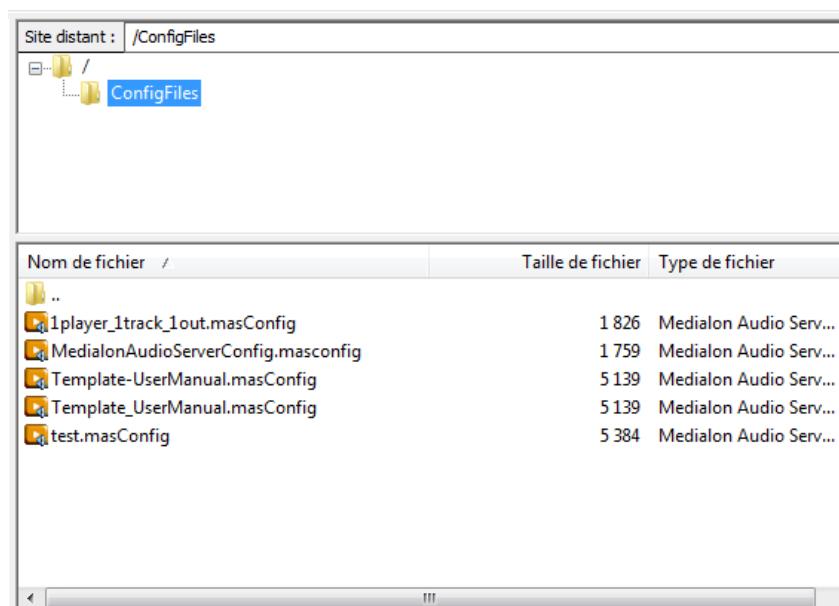


- **Save Configuration:** save the current configuration.
- **Save Configuration as:** save the current configuration into a new file.



Configuration Files Location

Configuration files are saved in a folder called “ConfigFiles”.

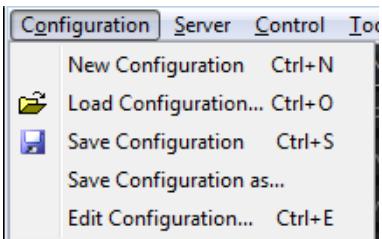


This folder is accessible with the FTP connection. See more about [FTP Server](#).

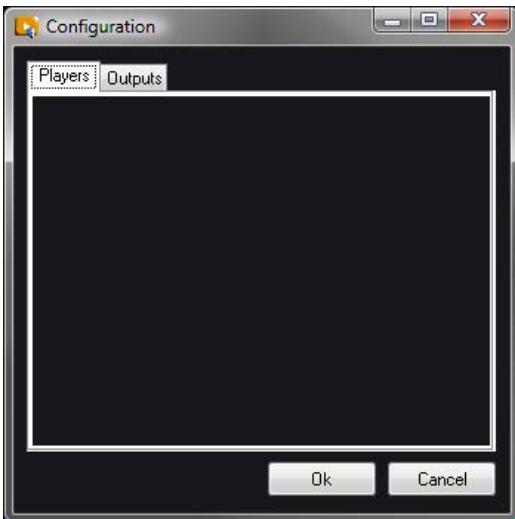
Edit Configuration

Medalon Audio Server PRO audio configuration can be edited even if you are disconnected from the MAS PRO.

- Go to Configuration menu and select Edit Configuration.



- Or use [CTRL+E] on your keyboard to open the Configuration editor.



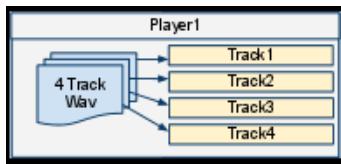
- Once your audio configuration is completed, click on Ok button to validate it.



Each time you send a configuration, MAS PRO is reset and all media are unloaded.

5.2.2 Players Configuration

A MAS PRO Player is the logical entity where audio files are loaded and played. A player is defined by one or several audio tracks corresponding to the type of recording.

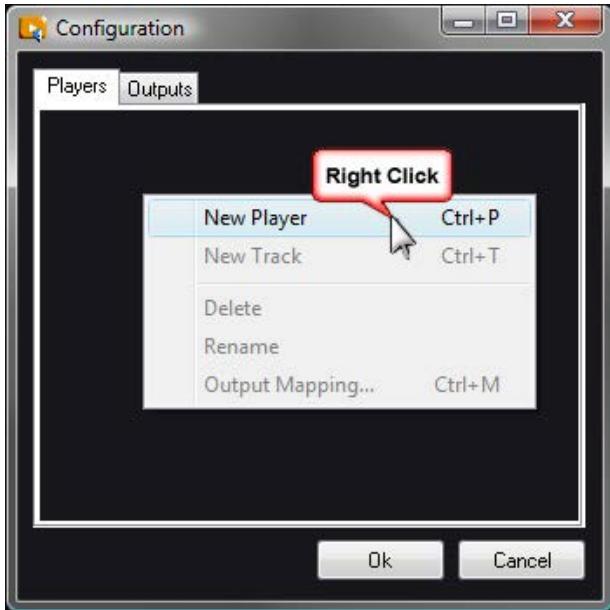


Medalon Audio Server can host as many players as you need.

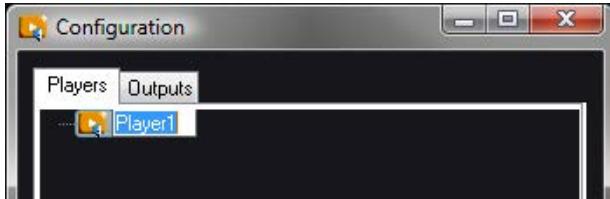
Add New Player

To add a Player in your configuration:

1. Use the right click menu or [CTRL+P] shortcut.



2. You can give a name to the player. Medialon Audio Server attributes an automatic player name based on the index in the player list.

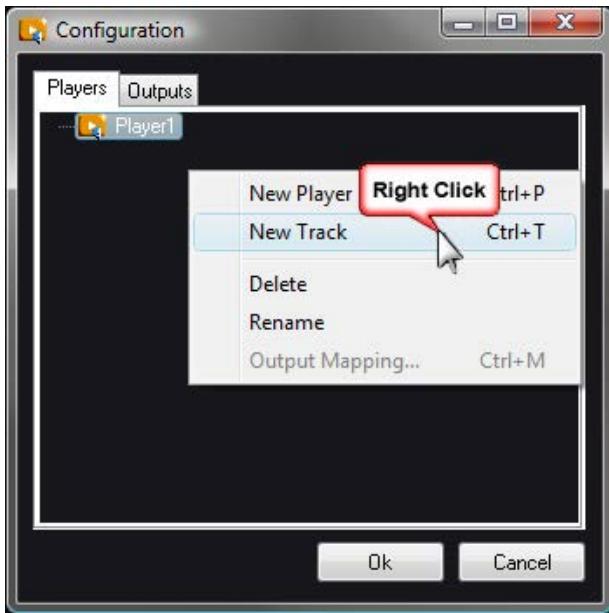


With the right click menu, you can also rename the player or delete it.

Add New Tracks

Once a player is created, you need to add one or more tracks to play the audio.

1. Select a Player
2. Use the right click menu or [CTRL+T] shortcut.



3. You can give a name to the tracks. Medialon Audio Server attributes an automatic track name based on the index in the player track list.

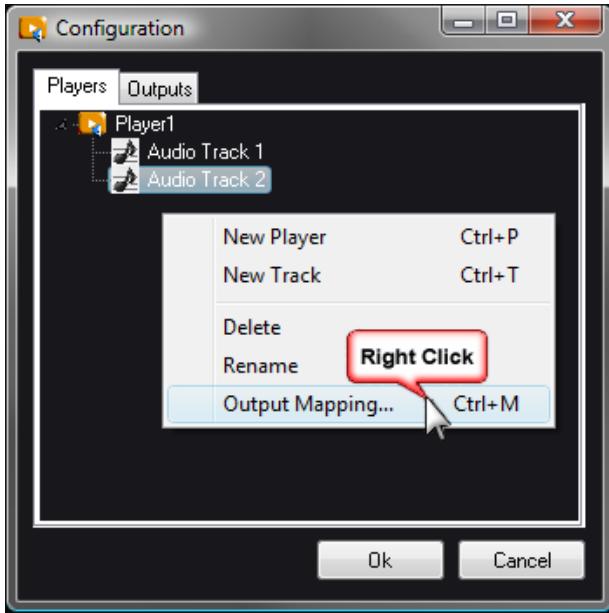


With the right click menu, you can also rename the track or delete it.

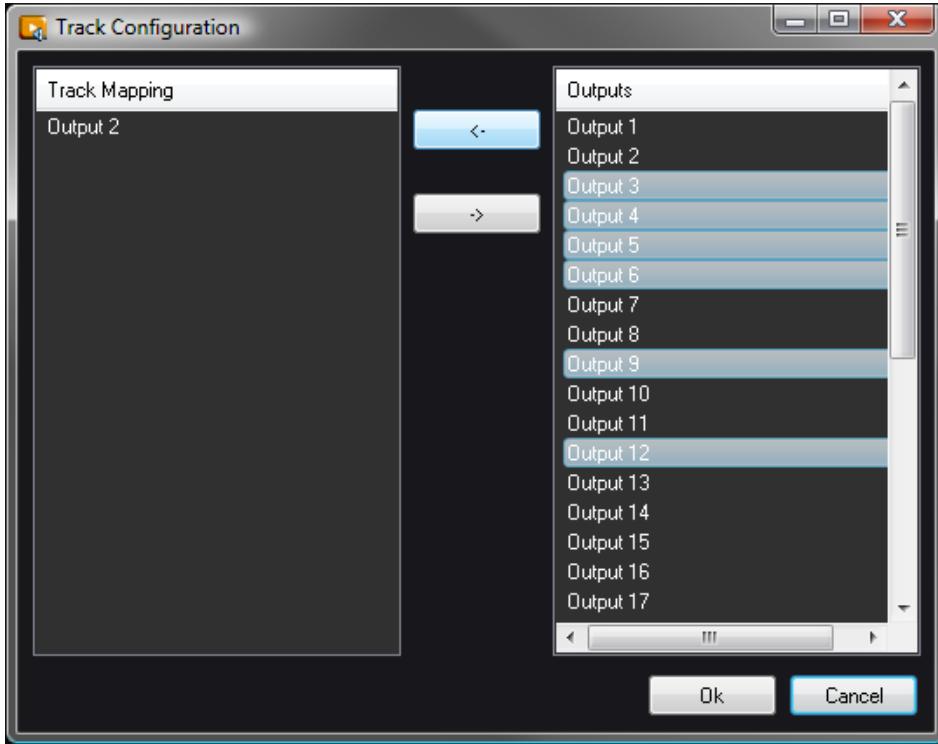
Output Mapping

Once player and tracks are created, you need to select the physical audio outputs used to perform the audio file.

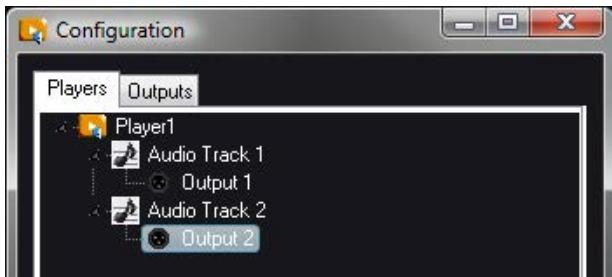
1. Select a track
2. Use the right click menu or [CTRL+M] shortcut.



3. Select one or several outputs in the right list.



4. Click on the Add Outputs button to route the track to the selected outputs.
5. Click on OK to validate the output mapping. You can change the output mapping, execute step 1 and 2 as described above.

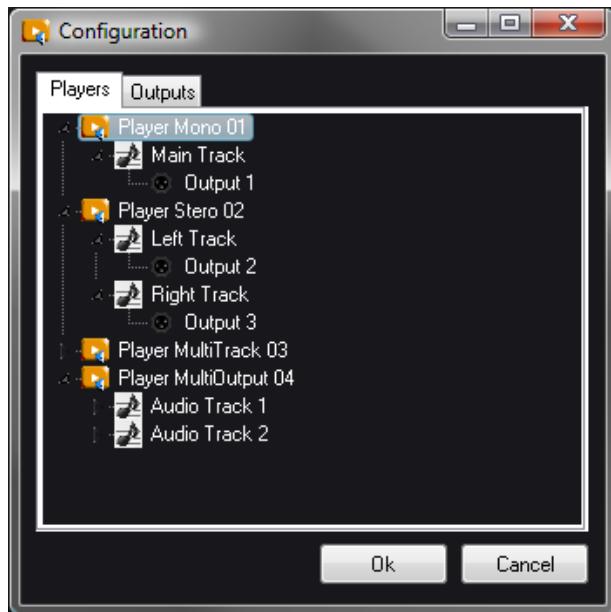


6. Select on the left list the outputs you want to remove.

7. Click on the Remove Outputs button to unroute the track.

Players List

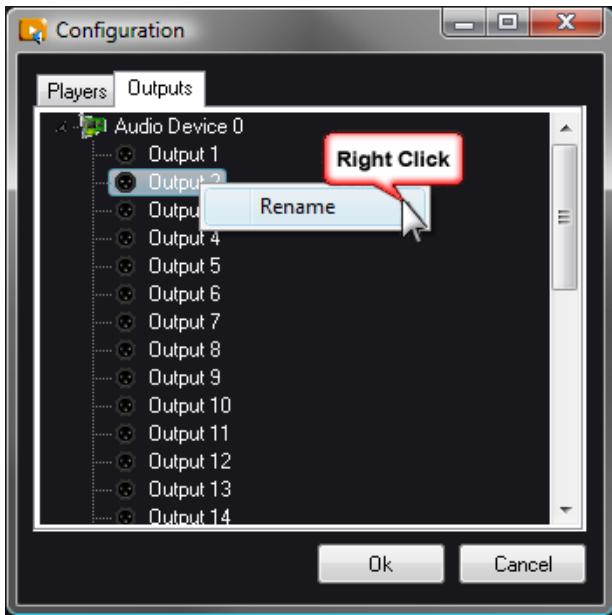
From the Players tabs, you can expand or collapse the players configuration



5.2.3 Outputs Configuration

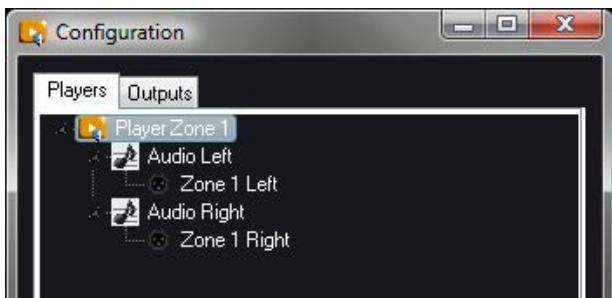
Physical outputs can be renamed, the output mapping will be easier to do.

1. Select an output.
2. Right click to rename it.



3. Click on Ok button to validate the new output names.

 New output names are not changed in the Player output mapping until you validate your changes.



5.2.4 MAS PRO Startup Status

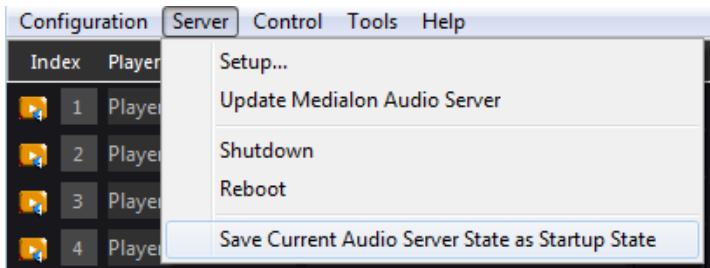
Once the audio configuration of your Medialon Audio Server PRO is completed, you can also define a default status for all players. This default status will be loaded each time Medialon Audio Server PRO will power on.

This startup status contains:

- Media file loaded or not in each player.
- Volume and Track level for each Player.
- Transport command (Play or Stop, Repeat) for each Player.
- Audio Output levels.

Save a startup state

1. Load and start or not media files in the players
2. Set all audio levels
3. Activate the play repeat where it is needed.
4. Goto Server menu.



5. Select “Save Current Audio Server State as Startup State”.



Warning! the startup state is deleted each time you send a configuration to the server.

5.2.5 Tools

The Dante Controller utility can be launched from the Tools menu in order to route the MAS Pro outputs with other external devices.

6 Remote Control

This section will teach you different ways to control your Medialon Audio Server.

6.1 Medialon Audio Client PRO

A remote client software is provided on the [Medialon website](#). This program, named Medialon Audio Client PRO allows to interact with the Medialon Audio Server from any Windows based personal computer (for example, a laptop). Basically, this software emulates the same user interface as the local Medialon Audio Server PRO user interface.

6.1.1 Client Installation

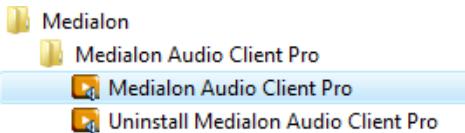
Medialon Software Products are compatible with Windows XP, Windows Vista (32Bits) and Windows 7 (32Bits) and can be used on these platforms for all kind of usage. However, although they can run on Windows 64-bit platforms (Vista 64-bits and Windows 7 64-bit) in 32-bit compatibility mode.

To install Medialon Audio Client PRO software:

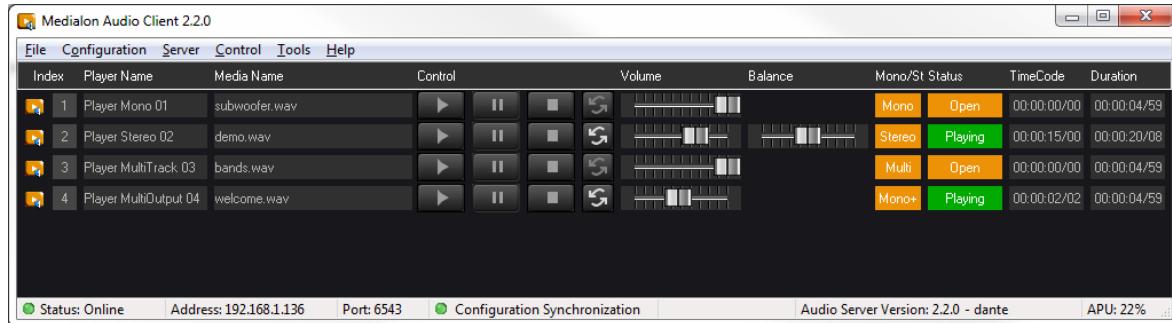
1. Launch the MedialonAudioClientPro.X.X.X_Setup.exe installer.
2. Read the Software License Agreement, then click the “Yes” button.
3. Click “Next” on the Welcome page.
4. Fill in the user information and click “Next”.
5. Click “Next” on the Choose Destination Location page. This will install Medialon Audio Client PRO in the default Medialon Audio Client PRO directory.
6. The installation process copies the Medialon Audio Client PRO files.
7. Click “Finish” to complete Medialon Audio Client PRO installation.

6.1.2 Starting Medialon Audio Client PRO

Start the Audio Client PRO from Start/Program/Medialon/Medialon Audio Client PRO.



Remote Control

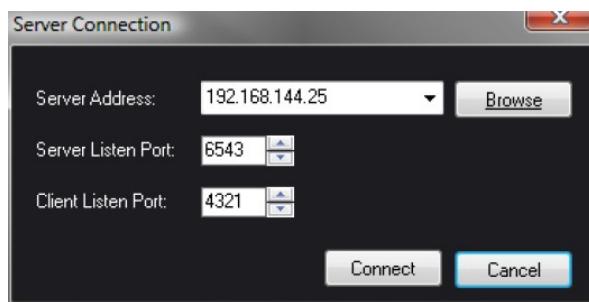
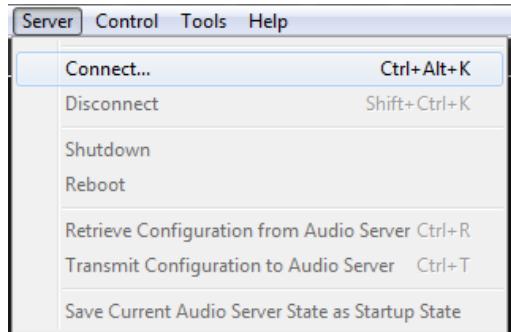


Note: If Firewall activated, there may be a message box asking to block or unblock the communication port used by the Medialon Audio Client PRO. Choose “Unblock” and click “OK”.

6.1.3 Connection to Medialon Audio Server

Start a connection

Select “Connect” in the “Server” menu item: this will open the Server connection dialog box.



- **Server Address:** Enter the IP Address or computer name of the Medialon Audio Server.
- **Browse:** Use this button to start a network scan and detect all Medialon Audio Server PRO present on the network.

Note: Network scan is not able to detect MAS24-96 models.

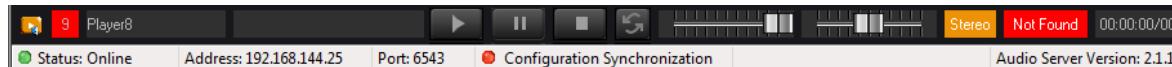
- **Server Listen Port:** Enter the IP Port used by the Medialon Audio Server to listen to new client. Don't change this value (default is "6543") unless this setting has been modified in the Medialon Audio Server.
- **Client Listen Port:** Enter the IP Port opened by Audio Client PRO to communicate with the Medialon Audio Server. Don't change this value (default is "4321") unless this port is already used on the client computer.
- **Connect:** use this button to open the connection.

MAS PRO Connected

When connection is established, status bar will indicate if client audio configuration is synchronized with the Medialon Audio Server.



When audio configuration is different between the server and the client. Configuration Synchronization LED turns to red.

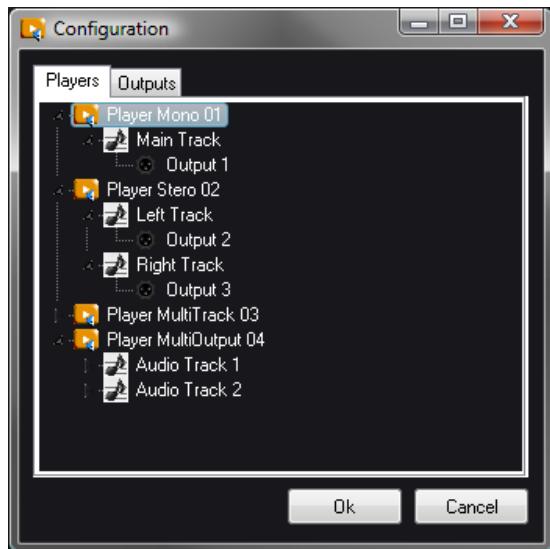


6.1.4 Setting Audio Configuration

Either if you are connected or not to a MAS PRO, Audio configuration can be changed.

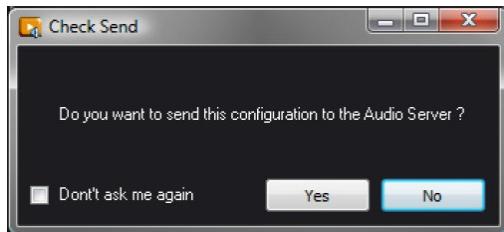
Edit Configuration

With Medialon Audio Client PRO you can edit the audio configuration.

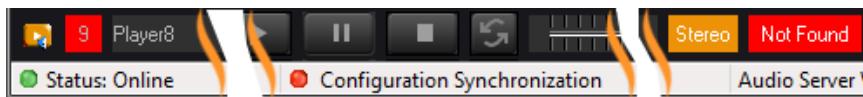


Remote Control

Even if MAS PRO is not Online, you can create a new audio configuration. See more about [Audio Configuration](#).

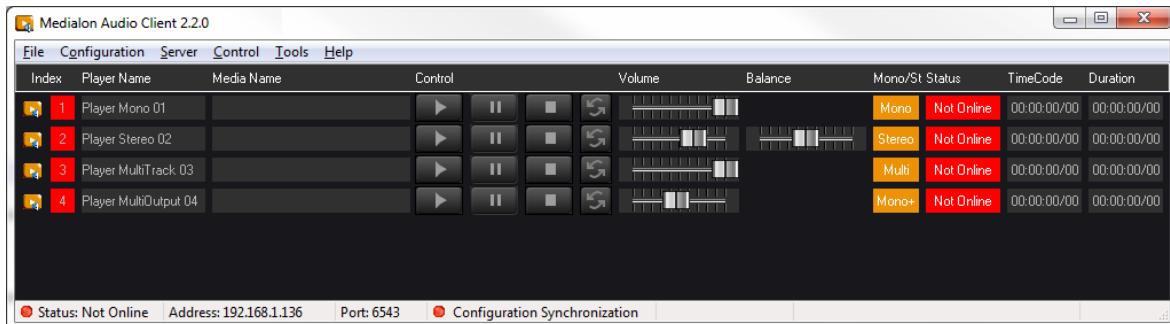


If you don't send the configuration to the server, the Audio Client PRO will display a non-sync configuration.



When a player name does not match with the current server configuration, player status turns to "Not Sync".

You can also work on the audio configuration offline.



Configuration Synchronization

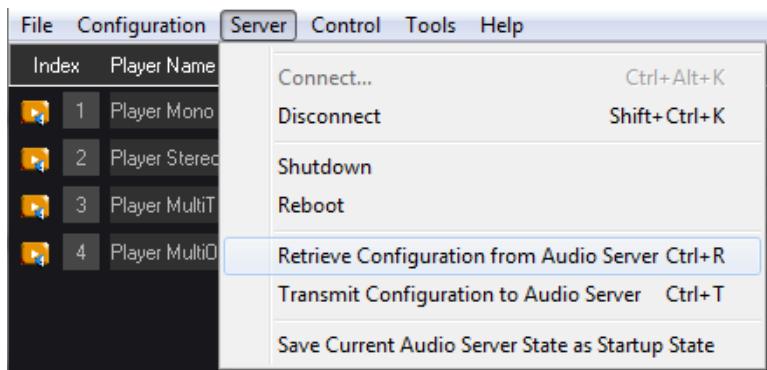
After any change in the audio configuration, the server and the client are desynchronized.



From this state you can execute a synchronization in one direction or the other.

Remote Control

- Go to Server menu.



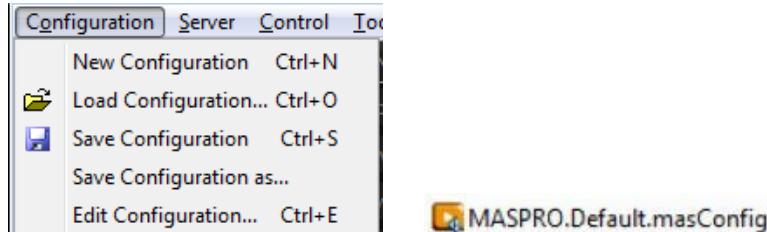
- Select 'Retrieve Configuration ...' to synchronize your client.
- Select 'Send Configuration ...' to synchronize the MAS PRO.



Configuration Synchronization LED turns to green when Client and Server are in sync.

Configuration Files

Medialon Audio Server audio configuration can be saved as files.

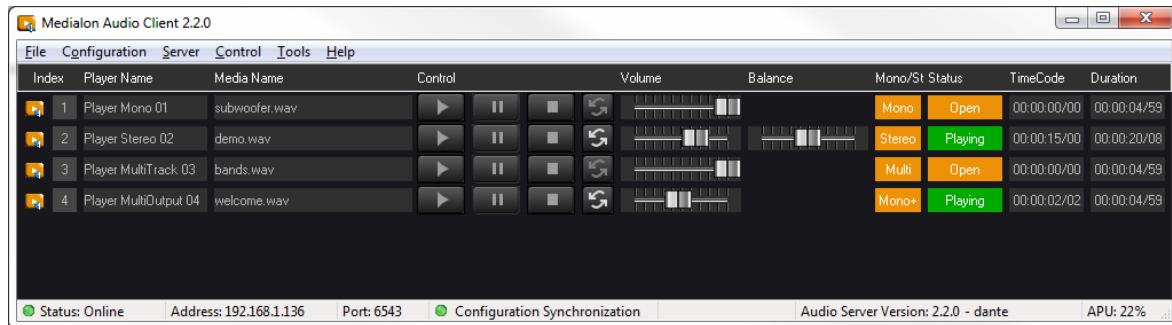


In this way you can keep a copy of your different configurations in your Client host PC.

6.1.5 Using Medialon Audio Client PRO

At startup Medialon Audio Client PRO automatically connects to the last specified Medialon Audio Server and retrieve its audio configuration.

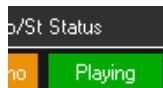
Remote Control



As the Audio Client PRO replicates the main window and the player bars of the Medialon Audio Server PRO local interface. See more about [Medialon Audio Server PRO Interface](#).

Status

This text box shows the status of the Audio Player:



Different Audio Player Status are:

- **Idle**: no media file has been loaded on this Audio Player since MAS PRO power up.
- **Open**: a media file is loaded on this Audio Player.
- **Closed**: the media file couldn't be loaded. **Playing**: the media is playing.
- **Paused**: the media is paused
- **Stopped**: the media is stopped
- **Not Online**: the Medialon Audio Server is not online.
- **Not Sync**: the MAS PRO Audio Configuration is not synchronized. Configuration Synchronization LED is also red to indicate this Not Sync status.

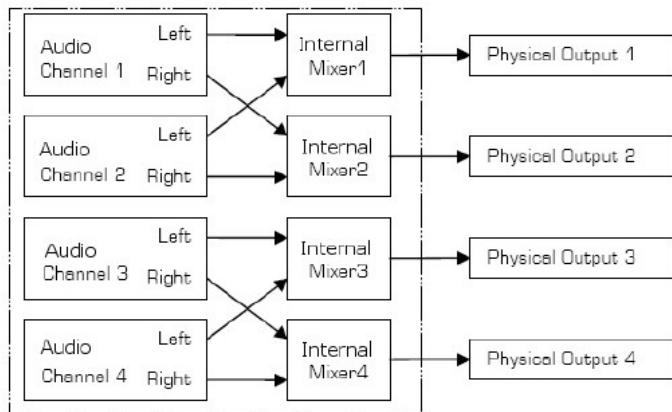
Load media file and volume adjustment can only be done when Medialon Audio Client PRO is connected to a MAS.

6.1.6 Controlling Medialon Audio Server (MAS 24-96)

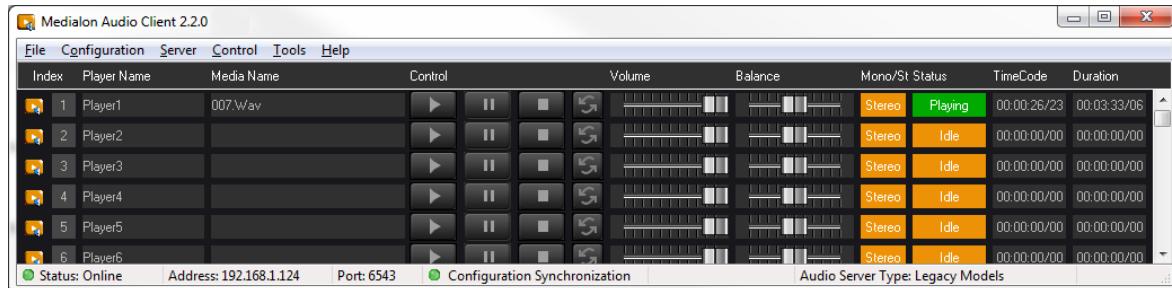
It is possible to use Medialon Audio Client PRO to control a Medialon Audio Server first generation.

MAS 24-96 Configuration

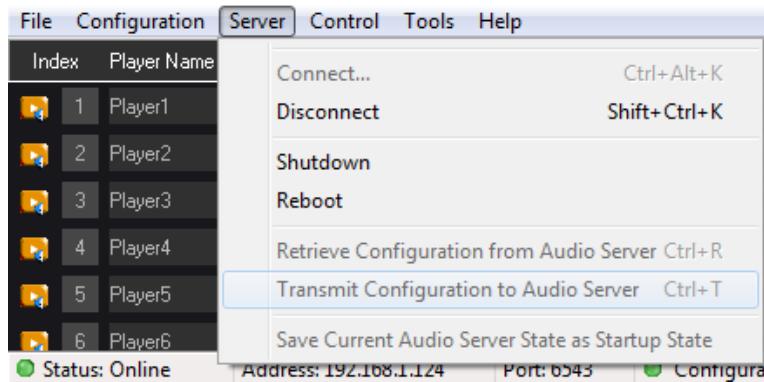
With these models the audio configuration is static (24/48/72/96 audio outputs), when Medialon Audio Client PRO is connected to one of these models, a Legacy Models configuration is automatically loaded.



This legacy configuration gives access to 96 stereo players mapped to a pair of output.

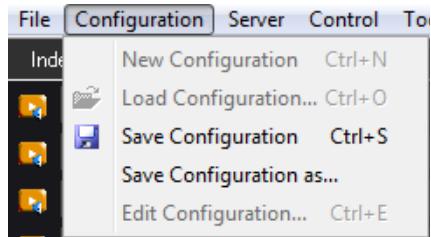


It is not possible to retrieve or to transmit another one to the MAS.



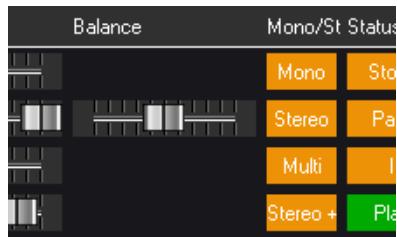
Remote Control

Players cannot be edited, and Player details are not available. there is no track audio level in this configuration.



Mono/Stereo and Balance

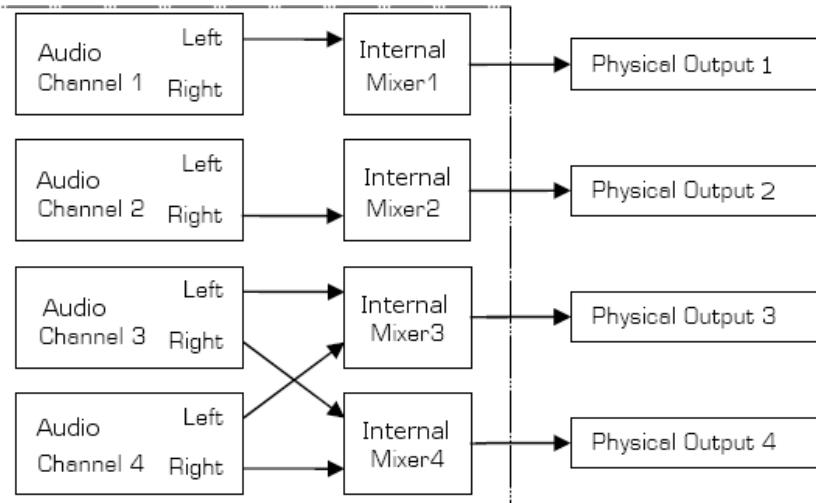
Stereo Players can be used as Stereo or Mono channel.



Click on the Mono/Stereo control to switch between mono or stereo mode.

In stereo mode, the Balance slider sets the balance between the physical left and right outputs of the Audio Channel.

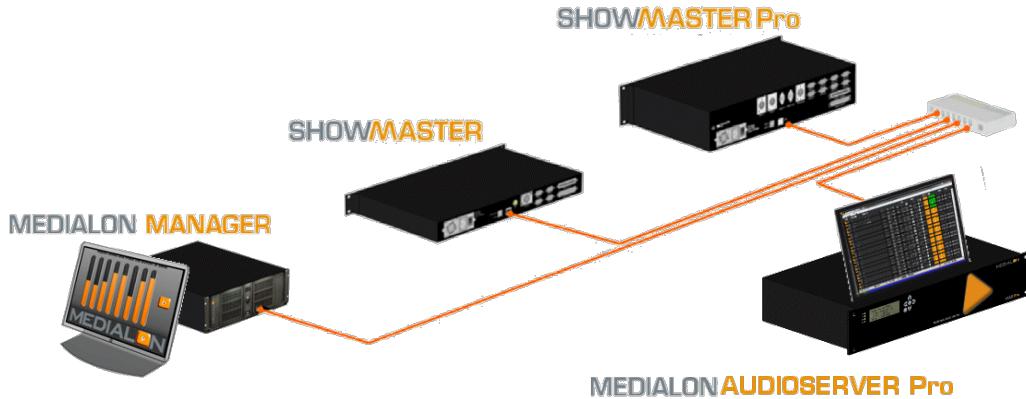
For example: the Audio Player with an ID of 3 will route its audio to physical outputs 3 and 4.



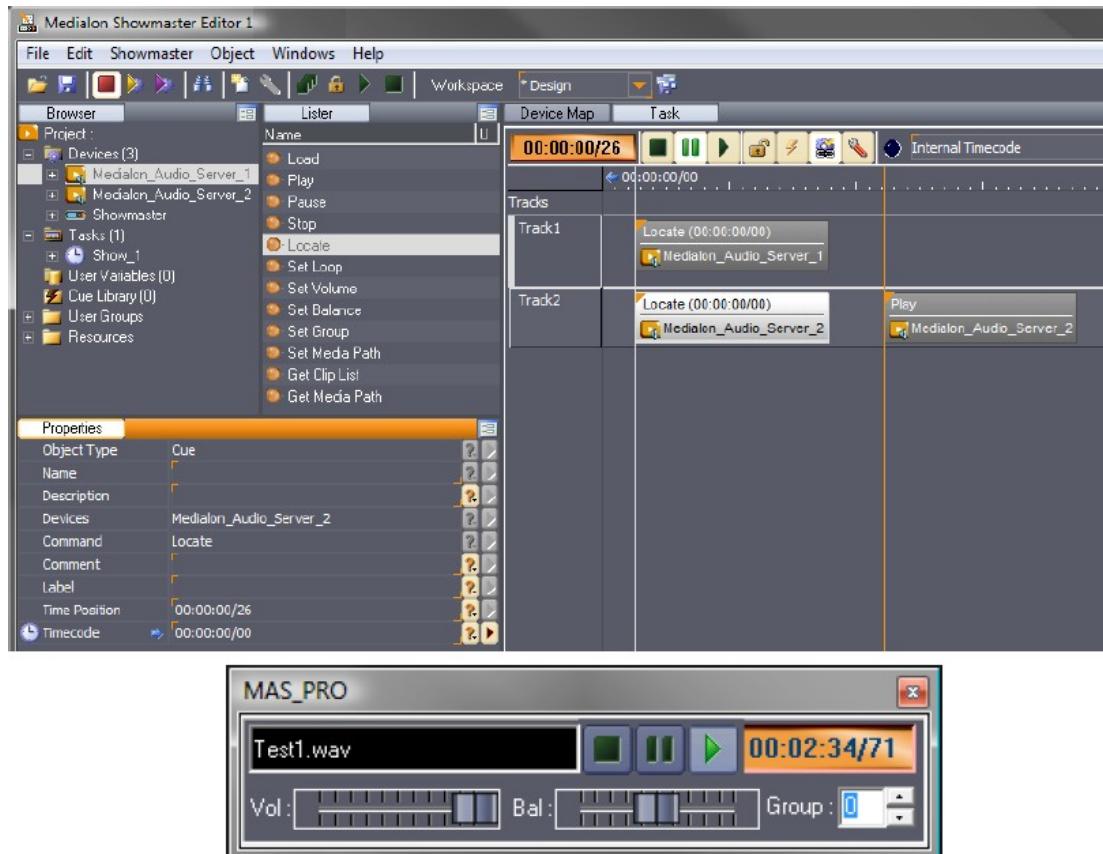
In Mono mode, the Balance slider is not shown, and the audio signal is routed to the same physical output as the Audio Player ID.

6.2 Medialon Control System

The Medialon Audio Server PRO can be controlled remotely from Medialon Showmaster, the Medialon Embedded Show Controller or Medialon Manager, the Show Control software.

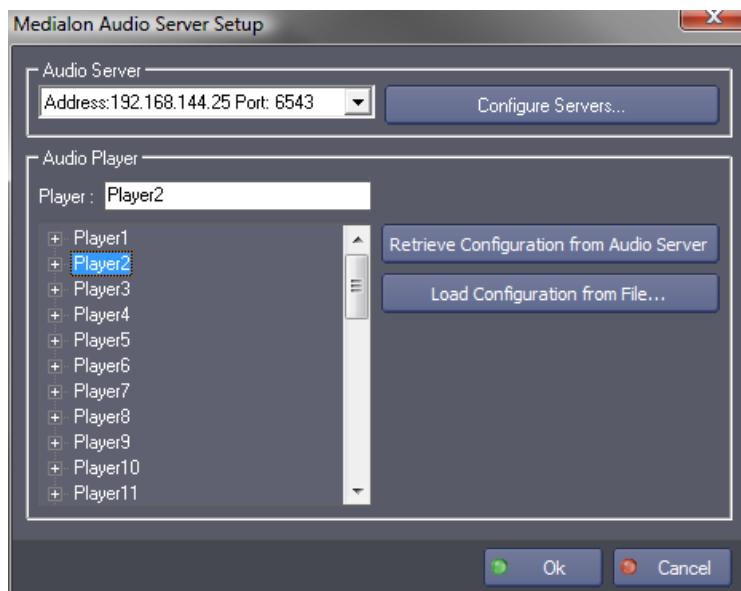
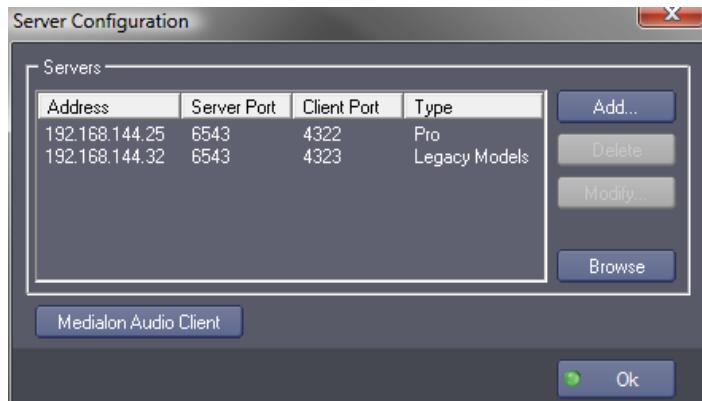


Medialon Control System software through the use of a software plug-in called MxM Medialon Audio Server allows to fully integrate one or more Medialon Audio Server in a show installation.



Remote Control

Audio Players are declared as Medialon Device.



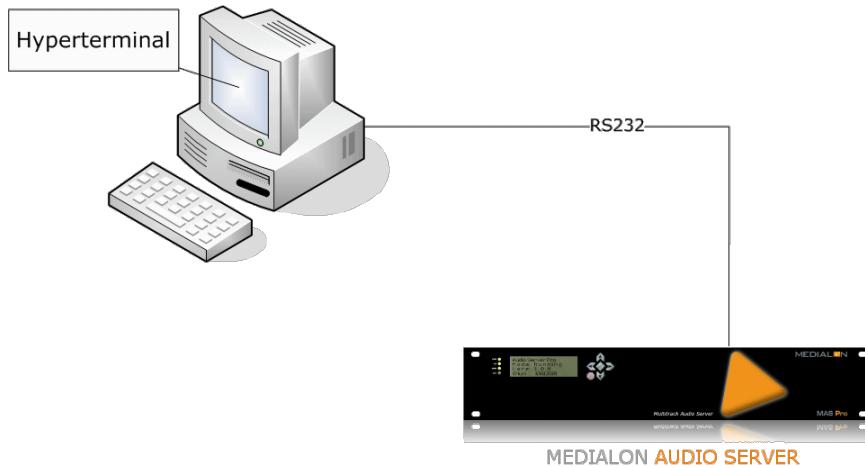
The list of available Players can be retrieved from the MAS PRO.

Medialon Control System offers the capability to create group of players to insure the synchronous execution of a command for this group of players. Several commands like Play, Pause, Stop, Locate are concerned. For more about MxM Medialon Audio Server see the Medialon Control System user manual.

To discover the power of Medialon Control System, visit the [Medialon website](#).

6.3 Serial External Control

Medialon Audio Server PRO is designed to be controlled remotely from another system by using serial connection.



Connect a RS232 cross cable to the COM port on the rear of Medialon Audio Server and use Hyperterminal for external commands.

RS232 Wiring Diagram

PC (sub D9 F)	Pin		Pin	Manager (sub D9 F)
RxD	2		3	RxD
TxD	3		2	TxD
GND	5		5	GND

Refer to the [RS232 Protocol](#) for commands details.

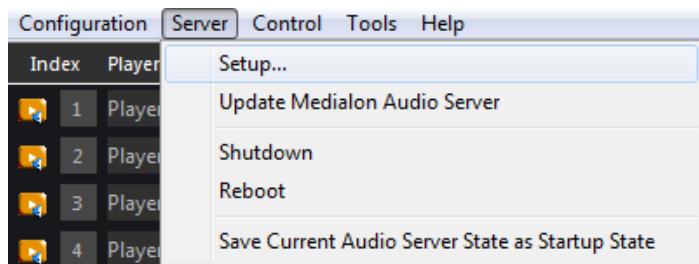
7 Maintenance

In this section, you will learn how to maintain your Medialon Audio Server PRO.

7.1 Medialon Audio Server Setup

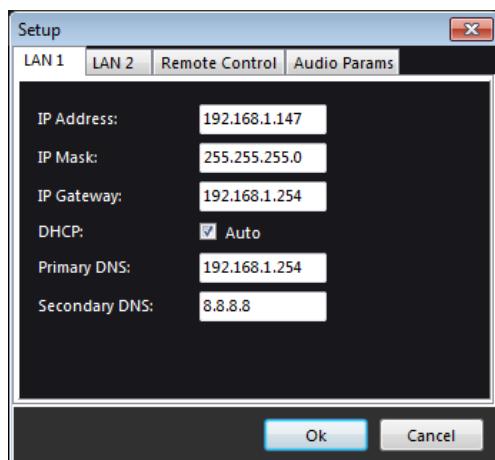
The Medialon Audio Server PRO settings are made locally. a remote Medialon Audio Client PRO cannot change the system setup.

Clicking on the “Server/Setup...” menu item displays the Setup dialog box which allows to set up various system parameters of the Medialon Audio Server.



7.1.1 LAN 1

It is recommended to plug the LAN 1 on the Audio network (Dante) in order to use the Dante controller utility. The Medialon Audio Server PRO is configured to use DHCP to get its IP address. If your network installation has no DHCP server or requires another IP address, open the Setup menu and change the Network settings.



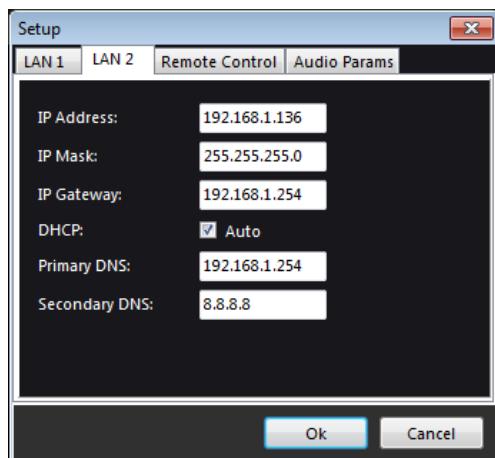
- **IP Address:** defines the network address of the MAS PRO. You may need to modify it if the default IP Address doesn't match your network configuration.
-

- **IP Mask:** defines the network subnet the MAS PRO belongs to.
- **IP Gateway:** defines the network gateway.
- **DHCP:** use DHCP for automatic IP address.
- **Primary DNS:**
- **Secondary DNS:**

 Network settings should be changed with caution, improper settings may cause a malfunction of the Medialon Audio Server PRO.

7.1.2 LAN 2

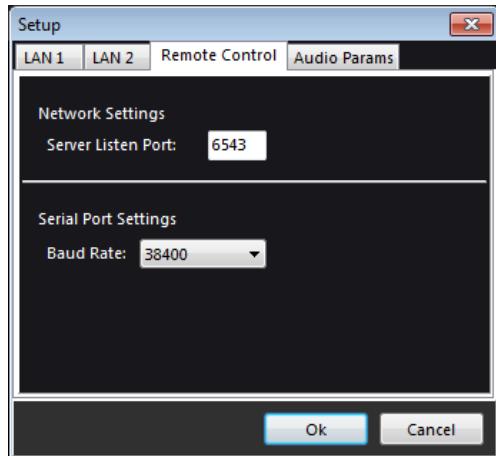
LAN 2 should be used for remote controlling. It is better to separate the remote control network and the Audio network (Dante). The Medialon Audio Server PRO is configured to use DHCP to get its IP address. If your network installation has no DHCP server or requires another IP address, open the Setup menu and change the Network settings.



- **IP Address:** defines the network address of the MAS PRO. You may need to modify it if the default IP Address doesn't match your network configuration.
- **IP Mask:** defines the network subnet the MAS PRO belongs to. **IP Gateway:** defines the network gateway.
- **DHCP:** use DHCP for automatic IP address.
- **Primary DNS:**
- **Secondary DNS:**

 Network settings should be changed with caution, improper settings may cause a malfunction of the Medialon Audio Server PRO.

7.1.3 Remote Control



Network Settings

The MAS PRO can be controlled remotely by using the Medialon Audio Client software or the mxmMedialonAudioClient.

- **Server Listen Port:** this value doesn't need to be modified unless a special configuration of your network doesn't allow this port. The default value is 6543.

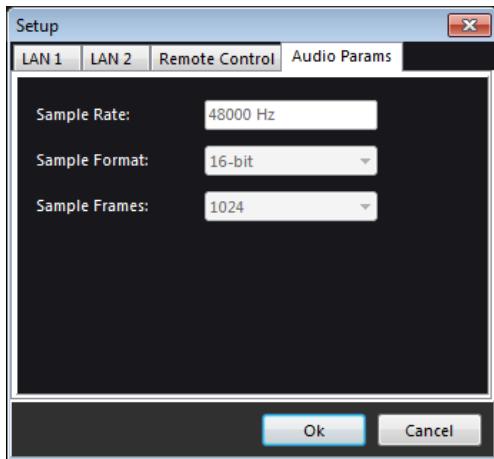
Serial Port Settings

Medialon Audio Server can be controlled through its COM1 port and a RS232 communication.

- **Baud Rate:** select speed of communication.

7.1.4 Audio Parameters

In this section, you set the type of audio files used with Medialon Audio Server.



- **Sample Rate:** The sample rate is fixed at 48kHz for the audio files.
- **Sample Format:** defines the quality of the sound played by the MAS PRO. By default, sample format is set to 16 bits. To obtain the best audio quality, you need to use 24 bits audio files and configure MAS PRO to 24 bits format.



Medialon Audio Server PRO can work with any sample format combination.

- **Sample Frames:** defines the size of the audio buffer. This parameter is reserved to expert, the default value (1024) covers all typical installations.



Any change in Audio Parameters will reboot the Medialon Audio Server PRO.

7.2 Updating Medialon Audio Server

This section helps you upgrade your Medialon Audio Server PRO.

Download the latest Medialon Audio Server from the [Medialon website](#).

Medialon Audio Server PRO Firmwares - Revision List - January 2013

Quick Link

- [Medialon Audio Server PRO Firmware 2.1.7](#) (Server 2.1.7, Client 2.1.7 - January 2013) [Download](#)
- [Medialon Audio Server PRO Firmware 2.1.6](#) (Server 2.1.6, Client 2.1.6 - January 2012) [Download](#)
- [Medialon Audio Server PRO Firmware 2.1.5](#) (Server 2.1.5, Client 2.1.6 - January 2012) [Download](#)
- [Medialon Audio Server PRO Firmware 2.1.4](#) (Server 2.1.4, Client 2.1.5 - November 2010)
- [Medialon Audio Server PRO Firmware 2.1.4](#) (Server 2.1.4, Client 2.1.4 - October 2010)
- [Medialon Audio Server PRO Firmware 2.1.3](#) (Server 2.1.3, Client 2.1.3 - August 2010)
- [Medialon Audio Server PRO Firmware 2.1.2](#) (Server 2.1.2, Client 2.1.2 - July 2010)

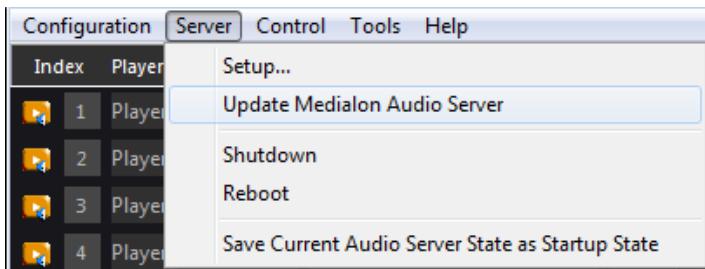
- Unzip “MedialonPackage_Sx.x.x_Cx.x.x.zip” file at the root of a USB disk.



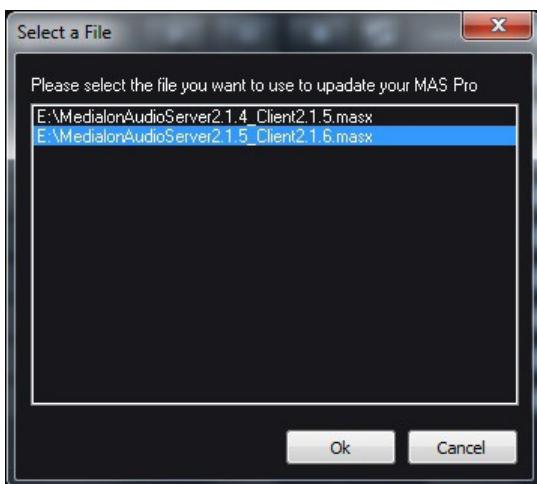
For more information about Medialon Audio Server updates, contact your dealer

7.2.1 Method for MAS PRO Client 2.1.6 / Server 2.1.5 and greater

1. Select Server/Update Medialon Audio Server menu.



2. Select Medialon Audio Server firmware (.masx) you want to install.



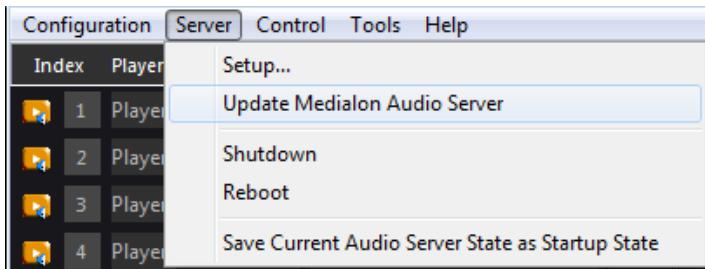
3. Start the update.



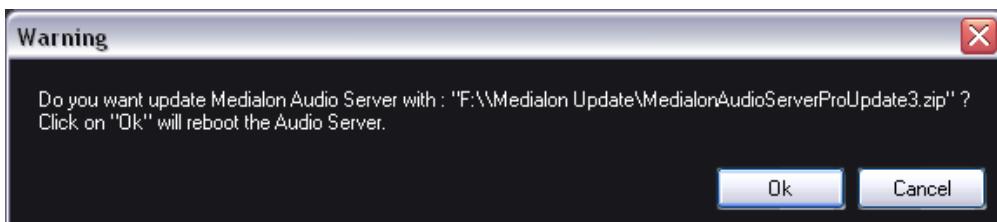
4. Medialon Audio Server will close, execute the update and then reboot to complete the update.

7.2.2 Method for MAS PRO Client 2.1.5 / Server 2.1.4 and earlier versions

1. Select Option/Update Medialon Audio Server menu.

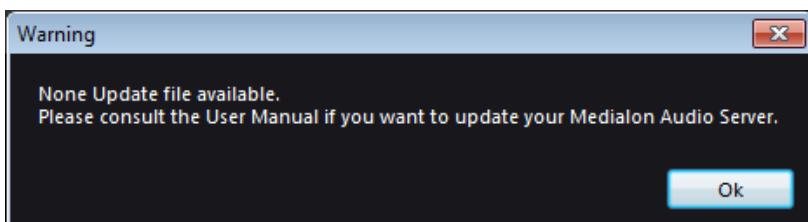


2. Start the update. Medialon Audio Server PRO will looking for a "MedialonAudioServerXXX.ZIP" file into a folder named "Medialon Update" at the root of a USB disk.



3. Medialon Audio Server will close, execute the update and then reboot to complete the update.

If any valid update file is not detected, a warning message will be displayed.



8 References

8.1 Specifications

8.1.1 Rack Mount

WARNING – The unit is intended to be rack mounted as per applicable requirements so no imbalance likely to occur and adequate clearance is to be provided so ambient temperature does not exceed the limit. Please see [Mandatory Safety Rules and Precautions](#) section.

Installation

NOTE You need a #2 Phillips screwdriver for rack mount installation. Complete the following steps to mount devices in a rack:

- Remove the rack mount kit from the shipping carton. The kit contains two L-shaped mounting brackets and four sink-head screws.
- Using a Phillips screwdriver, attach the mounting brackets to the sides of the device using four sink-head screws.
- Using a Phillips screwdriver, mount the device in the rack using four rack-mounting screws.

8.1.2 Workstation

Hardware Specification

- Storage: SSD hard drives with 128 GB of storage

System

- CPU: Intel® Core 2 Duo processor
- System Chipset: Intel Q45 GMCH/ICH10DO
- Memory: X GB Dual Channel DDR2 800 / 667 MHz
- H/W Status Monitor: Monitoring temperatures, voltages, and cooling fan status. Auto throttling control when CPU overheats

Display

- **Chipset:** Intel® Graphics Media Accelerator 4500 integrated

References

- **Display Memory:** Intel DVMT 4.0 supports up to 352 MB video memory
- **Max Resolution:** 2048 × 1536 bpp(@ 75 Hz)
- **Dual Display:** DVI-I + DVI-D
- **VGA:** through DVI to VGA Adaptor

Ethernet

- **LAN1:** Intel® 82567-LM PCI-E Gigabit LAN support iAMT 5.0
- **LAN2:** Intel® 82541PI PCI Gb LAN controller
- **Wake up on LAN**

Mechanical & Environment

- **Rack 19'' xU**
- **Power Type:** Power 90-250 V AC autorange
- **Operating Temperature:** 32°F – 104°F (0°C – 40°C)
- **Storage Temperature:** -4°F – 185°F (-20°C – 85°C)
- **Operating Humidity:** 10 – 80% RH non-condensing
- **Storage Humidity:** 5 – 90% RH non-condensing
- **Operating Altitude:** sea level to 2000 meters

Power

- External Power Adapter EDACPOWER ELEC
- Model EA10523C-120
- AC Input 100-240 V AC – 1.8 A, 50-60 Hz
- DC Output 12 V DC 5 A
- Connector: DC-Jack

Approvals

- FCC 47 CFR Part 15 Subpart B
- ICES-003 Canada
- EN 55032
- IEC 61000-3-2 & IEC 61000-3-3

References

- EN 55024
- IEC-61000-4-2 & IEC-61000-4-3 & IEC-61000-4-4 & IEC-61000-4-5 & IEC-61000-4-6 & IEC-61000-4-11
- IEC/EN/ UL 62368-1
- CSA C22.2#62368-1
- IEC 60950-1
- STL

Dante Output

- **Type:** Gigabit Ethernet interface
- **Connector:** RJ-45
- **Precision:** 24-bit
- **Sample Rate:** 48 kHz
- **Latency:** 1 ms, 2 ms, 5 ms

Signal Processing

- DSP Texas Instruments TMS320C6713@300 MHz
- Memory 8 MB
- Audio Formats 16-, 24-bit signed PCM

Software Specification

- Medialon Audio Server V2
- Windows Embedded

FTP Server

- **FTP address:** MAS PRO IP address
- **FTP Port:** 21
- **Login username:** medialon
- **Login password:** Medialon
- **Root folder:** Audio files storage
- **Sub folder:** “ConfigFiles”: Configurations files storage

8.1.3 Audio File Format

Wave: 16 bit or 24 bit /48KHz

8.2 Dante

Dante is a combination of software, hardware, and network protocols that deliver uncompressed, multi-channel, low-latency digital audio over a standard Ethernet network. Developed in 2006 by a Sydney-based company named Audinate, Dante builds and improves on previous audio over Ethernet technologies, such as CobraNet and EtherSound. Like most other audio over Ethernet technologies, Dante is primarily for professional, commercial applications. Most often, it is used in applications where a large number of audio channels must be transmitted over relatively long distances or to multiple locations.

Dante provides several advantages over traditional analog audio distribution. Audio transmitted over analog cables can be adversely affected by signal degradation due to electromagnetic interference, high-frequency attenuation, and voltage drop over long cable runs. Thanks to digital multiplexing, the cabling requirements for digital audio distribution are almost always reduced when compared to analog audio. Dante also provides specific advantages over first-generation audio over Ethernet technologies, such as CobraNet and EtherSound. Technological advancements include the ability to pass through network routers, native gigabit support, higher channel count, lower latency, and automatic configuration.

8.2.1 Dante Overview

Dante Terminology

- **Transmit (Tx) channel:** A transmit channel transmits audio from the audio hardware onto the network.
- **Receive (Rx) channel:** A receive channel receives audio from the network and sends it to the audio hardware.
- **Flow:** Dante audio routing creates flows. Each flow carries several channels of audio from a transmitter to one or more receivers. Unicast routing creates flows to single receivers. Multicast routing creates flows that can be received by multiple receivers. Multicast flows are assigned IDs enabling them to be identified in Dante Controller.
- **Unicast routing:** Unicast flows are point-to-point from a single transmitter to a single receiver. Unicast flows typically have room for 4 channels of audio.
- **Multicast routing:** Multicast flows are one-to-many from a single transmitter to any number of receivers. Unlike unicast routing, multicast flows consume network bandwidth even if there are no receivers, but do not require additional bandwidth to add more receivers.

Network recommendations

Make certain that your network is using good quality components and is running Gigabit throughout. This helps reducing latency and increases bandwidth flexibility.

As a rule of thumb, a separate dedicated Dante network is recommended for critical, high channel-count applications.

Audio Formats

Different Dante devices may support different audio formats. Most Dante devices support either 48 kHz 24-bit PCM or 96 kHz 24-bit PCM. Some devices can be switched between 48 kHz and 96 kHz, but will not support both at once.

It is only possible to set up a route between channels which have a common audio format. Channels having incompatible formats will not be routable.



Note: The MAS Pro Dante Audio Format is 48 kHz 24-Bit.

Flows

Dante audio routing creates ‘flows’. Each flow carries one or more channels of audio from a transmitting device to one or more receiving devices. There are two types of flow, unicast and multicast.

Unicast routing creates flows to a single receiving device; a unicast flow typically assigns space for 4 channels of audio. Unicast flows are setup when a receiver subscribes to an available audio channel and are automatically removed when the receiver unsubscribes from all channels in that flow.

Multicast routing creates flows that can be received by multiple receivers. Multicast flows are assigned IDs enabling them to be identified and to facilitate their removal. In contrast to unicast flows, multicast flows must be set up on the transmitting Dante device before receivers can subscribe to these flows.

Advanced Routing: Using Multicast

Dante routing is unicast by default. This means that a separate flow is set up between each transmitter and receiver. If several receivers are all subscribed to the same channels of a transmitter, it may sometimes be more efficient to use multicast.

Multicast sends the same set of channels to multiple receivers. In practice, this usually means that the audio flow is flooded throughout the network. If many receivers want the same channels,

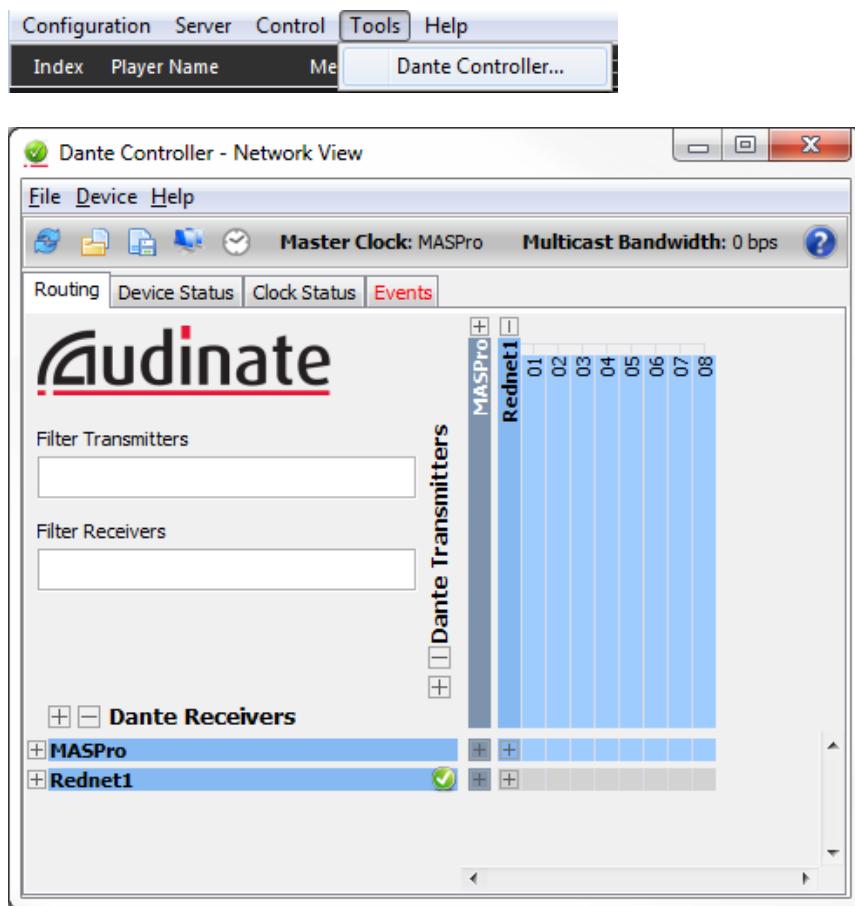
using multicast can reduce overall network use, especially on the transmitter, because only one copy of each audio channel needs to be sent, rather than many.

Dante receivers will automatically prefer multicast to unicast if it is available. This means that if a new multicast flow is created containing the channels that a receiver is currently receiving as unicast, the receiver will switch over to receiving audio from the multicast flow and the unicast flow will be removed.

8.2.2 Dante Configuration

Medialon Audio Server PRO is made with 1 Dante Port or Device. Its Dante configuration is done by using Dante Controller utility which can be downloaded from [Audinate website](#).

This utility is also installed on MAS PRO Dante and it can be opened from the Tools menu.



Dante Controller is a software application provided by Audinate which allows users to configure and route audio around Dante networks.

It is available for PCs running Windows 7 and Windows 8, and Apple Macs running OS X 10.6.8, 10.7.5 and 10.8.

Once you install Dante Controller on your PC or Mac and connect it to a Dante network, you can use Dante Controller to:

- View all Dante-enabled audio devices and their channels on the network
- View Dante, enabled device clock and network settings
- Route audio on these devices, and view the state of existing audio routes
- Change the labels of audio channels from numbers to names that suit you
- Customize the receive latency (latency before play out)
- Save audio routing presets
- Apply previously saved presets
- View and set per device configuration options including:
 - Changing the device name
 - Changing sample rate and clock settings
 - Viewing detailed network information
 - Access the device web page to upgrade firmware and license information (where supported)
 - Identify a device for example by flashing LEDs (where supported)

Audio Routing

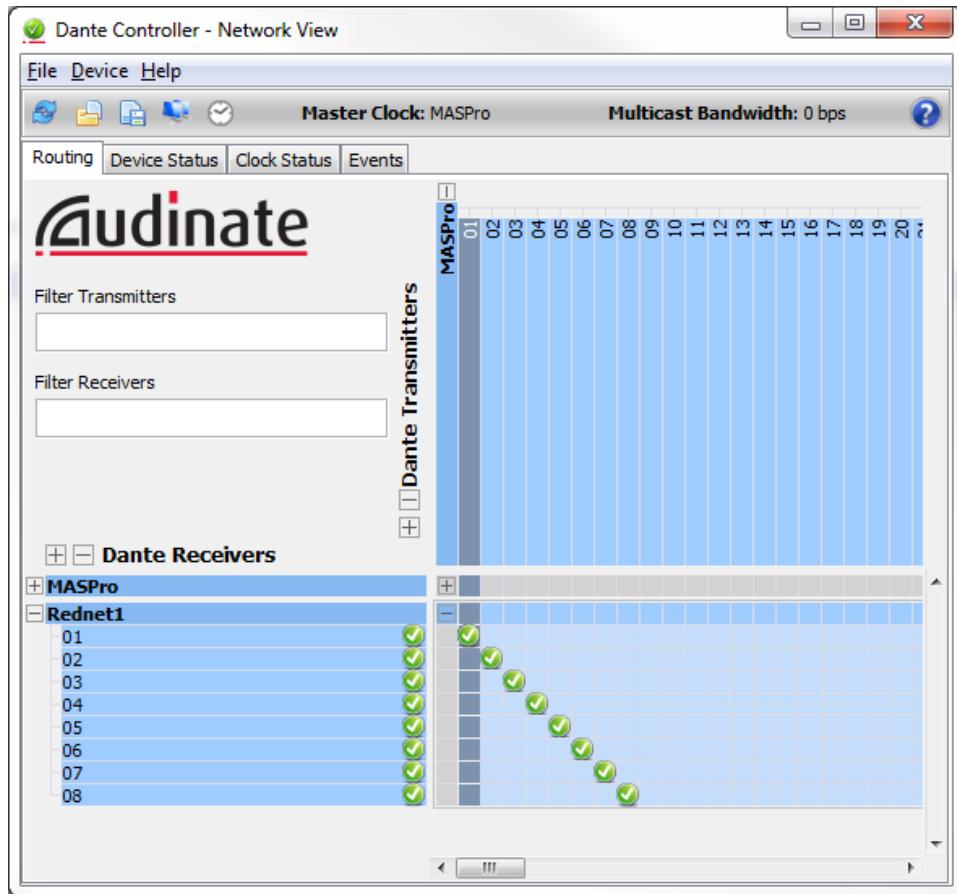
When Dante Controller is started, it always displays the Routing Tab within the Network View. In this view the network is shown in the form of a grid. Devices with Tx channels are displayed along the top row of the grid, and those with Rx channels are displayed along the left-hand column of the grid. Initially a collapsed view is presented; individual channels cannot be seen.



Note: If a device name is shown in red, it means Dante Controller has automatically detected an error condition. Double-click the device name to see more information.



Note: If a device has Tx and Rx channels, it is shown both along the top row of the grid and also along the left-hand edge.



Even if MAS Pro is detected as a receiver/transmitter in Dante controller, only the transmitter part is really available. MAS Pro Dante inputs should not be routed.

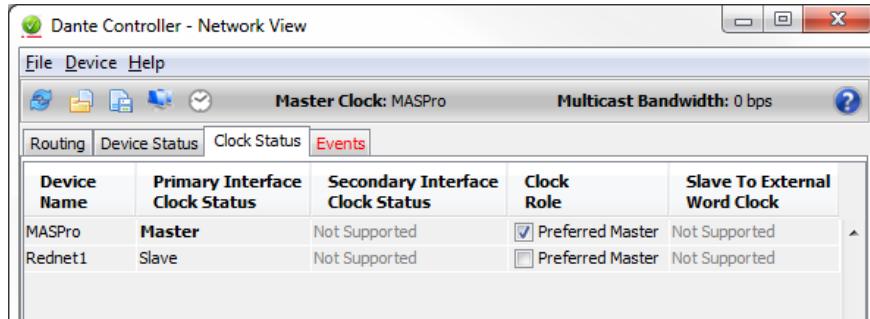
Clock Source Configuration

All Dante-enabled devices use the IEEE 1588 Precision Time Protocol (PTP) across the network to synchronize their local clocks to a master clock, providing sample-accurate time alignment throughout the network.

One Dante device will be elected as the PTP Master Clock for the network; all other Dante devices act as a PTP Slave Clocks to the elected master clock. Although many Dante devices may be capable of becoming PTP Master Clock, only one device will win the election. Devices with clock inputs (e.g. word clock or AES3) will be preferred in the election process. A gigabit connected device is preferred over a device connected via 100Mbps. A tie-breaker rule of the lowest MAC address is used if several equivalent candidate master clocks are available. The election process may be overridden by manually setting 'PTP Preferred' master on a device.

The MAS Pro Dante provides a high-quality on-board word clock, that means that the MAS Pro can be configurated as preferred Master Clock on the Dante Network if needed.

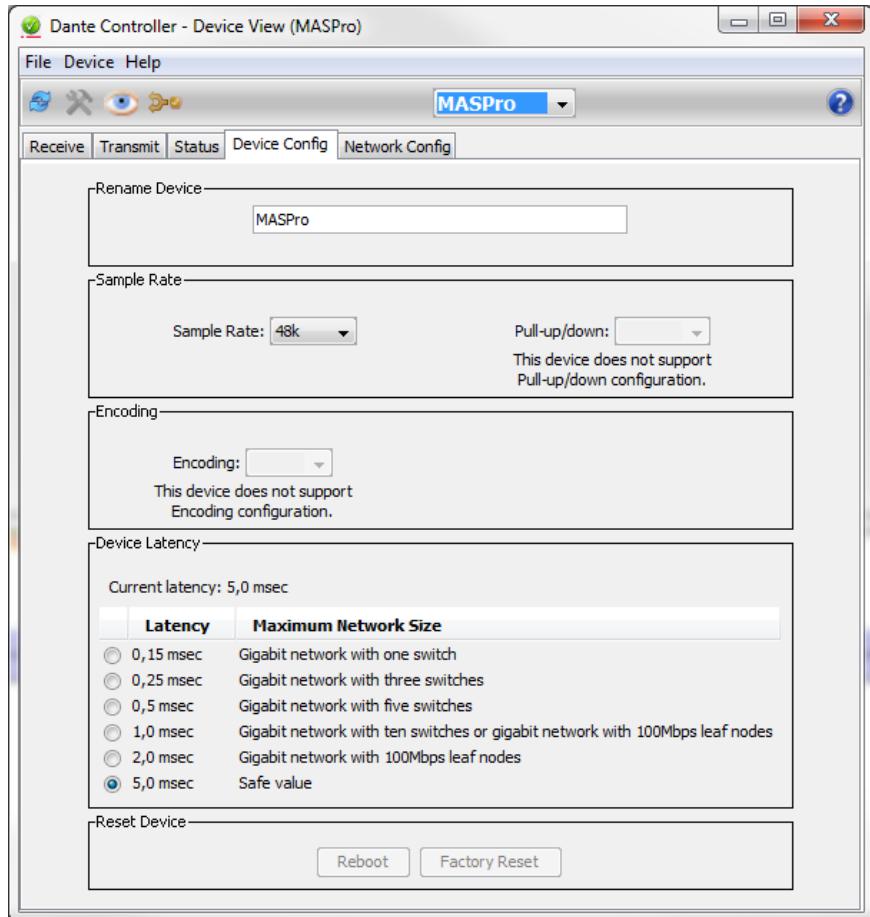
References



Latency

In Dante, variation in latency in the network is compensated for at the receiver. Each receiver has an Rx latency setting. This setting defines the latency between the timestamps on the incoming audio samples and when those samples are played out.

The typical default latency for a Dante device is 1ms. This is sufficient for a very large network, consisting of a Gigabit network core (with up to 10 hops between edge switches) and 100 Mb links to Dante devices. Smaller, Gigabit-only networks can use lower values of latency (down to below 0.2 ms). We recommend setting the latency at 5 ms, which is safer.





Note: The minimum latency available for a device connected to a 100 Mbps network port is 1 ms.

8.3 RS232 Protocol

8.3.1 Overview

The Medialon Audio Server ASCII control protocol is a client/server protocol. Requests are always initiated by the client and the server must reply to the client requests. There's no concept of 'event' messages which would be sent by the server without a request.

The underlying transport protocol is ASCII over a serial link (RS232) although the protocol itself is independent of the physical transport protocol.

RS232 Communication parameters

Parameter	Data
Baud rate	38400 to 115200 baud
Databits	8
Parity	No
Stopbits	1
Flow control	None

General message format

Syntax

A command is made of:

- A verb
- Zero, one or more parameters separated by commas and enclosed by brackets.

Example: "PLAY(2)"

A single command message is made of a command followed by a carriage return (0x13) or a line feed (0x0A).



Note: the verb is not case sensitive: that is "OpenMedia" is the same as "OPENMedia". Space characters (SPACE or TAB) are allowed:

References

- between verb and left brackets
- between parameters and separators (brackets and comma).

Example: “OPENMEDIA (2, testmedia.wav)\n”.

However, reply messages returned from the server are guaranteed not to contain any spaces between verb, left brackets, parameters and right brackets.

A message can be made of one or more commands. Commands must be separated by one or more space character(s). The end of the message is delimited by a carriage return (0x13) or a line feed (0x0A).

Example: “PLAY(2) STOP(4)\r”

Messages returned by the server always contain only one reply for each command.

Time values sent by the client are expressed either:

- as timecode string in hundredth of seconds format.

Example: “00:01:00/52” means one minute and 52 hundredth

- as time in milliseconds

Example: “60520” means one minute and 52 hundredth.

Each verb has shortcut in order to optimize communication throughput and/or ease typing the command on a terminal. See detail command description.

Example: “PLAY(2)” or “PL(2)” commands are equivalent.

Server Response

When Medialon Audio Server PRO receives a “command only” message. It sends back the command message, If the command is correctly formatted.

Example: Send a play command to the channel #2:

- Client sends: PLAY(2)
- The server replies: PLAY(2).

When Medialon Audio Server PRO receives a “get information” message, the server sends back the requested information preceded by the same verb as the request message.

Example: In order to get the status of the channel #4:

- Client sends: GETSTATUS(4)
- Server replies: GETSTATUS(4,3,00:05:23/45)

Error management:

If the command syntax is incorrect, the server sends back an error message followed by the incoming command.

Example: send a play command to the channel #212 (which doesn't exist):

- Client sends: PLAY(212)
- The server sends back: Error(Invalid Channel) PLAY(212)

Note that no error is notified if the command syntax is correct, but the required action couldn't be performed depending upon the current state of the server.



The only exception is the OpenMedia() command which returns a "File Not Found" error if the specified media is not in the media directory.

It is allowed to send a command to the server before receiving the reply of the server for the previous command.

Group of Channels

To ensure the synchronous execution of a command for a group of channels, several commands like Play, Pause, Stop, support multiple channels.

Example: PLAY(1,4,9,10) can be used to start playing channels 1, 4, 9 and 10 in sync.

8.3.2 Commands



Command shortcuts are shown within brackets.

Transport

PLAY

Send a Play to the specified channel(s).

Client sends:

Field	Value
Command	PLAY [PL]
PlayerIndex	1 to N

Server replies with the same message:

Example: PLAY(2)

This command also supports multiple channels using the following syntax: PLAY(,,,...)

Example: PLAY(1,4,9,10) can be used to start playing channels 1, 4, 9 and 10 in sync.

PAUSE

Send a Pause to the specified channel(s).

Client sends:

Field	Value
Command	PAUSE [PA]
PlayerIndex	1 to N

Server replies with the same message:

Example: PAUSE(2) This command also supports multiple channels using the following syntax: PAUSE(,,,...)

Example: PAUSE(1,4,9,10) can be used to pause channels 1, 4, 9 and 10 in sync.

STOP

Send a Stop to the specified channel(s).

Client sends:

Field	Value
Command	STOP [ST]
PlayerIndex	1 to N

Server replies with the same message:

Example: STOP(2)

References

This command also supports multiple channels using the following syntax: STOP(,,...,)

Example: STOP(1,4,9,10) can be used to stop channels 1, 4, 9 and 10 in sync.

LOCATE

Locate the specified channel to the specified position.

Client sends:

Field	Value
Command	LOCATE [LC]
PlayerIndex	1 to N
Position	position to locate to (either in timecode or milliseconds format)

Server replies with the same message:

Example: LOCATE(2,00:03:25/45)

This command also supports multiple channels using the following syntax: LOCATE(,,...,Position)

Example: LOCATE(1,4,9,10,00:01:00/00) can be used to locate channels 1, 4, 9 and 10 at the specified position.

OPENMEDIA

Open and load a media on the specified channel.

Client sends:

Field	Value
Command	OPENMEDIA [OP]
PlayerIndex	1 to N
MediaName	Media Name

Server replies with the same message:

Example: OPENMEDIA(4,testfile.wav)

If successful, this command increments the channel OpenFileCounter (See [GETSTATUS](#) command).

CLOSEMEDIA

Close the currently loaded media on the specified channel.

Client sends:

Field	Value
Command	CLOSEMEDIA [CL]
PlayerIndex	1 to N

Server replies with the same message:

Example: CLOSEMEDIA(4)

SETVOLUME

Set the volume for the specified channel.

Client sends:

Field	Value
Command	SETVOLUME [VO]
PlayerIndex	1 to N
Volume	Volume gain in hundredth of dB (from 0dB to -100dB)

Server replies with the same message:

Example: SETVOLUME (4,-1000).

SETBALANCE

Set the balance for the specified channel.

Client sends:

Field	Value
Command	SETBALANCE [BA]
PlayerIndex	1 to N
Balance	Balance in hundredth of dB. Positive values for right channel, negative values for left channel.

Server replies with the same message:

Example: SETBALANCE (4,1000).

SETLOOP

Sets the number of times the current media should be looped on the specified channel.

Client sends:

Field	Value
Command	SETLOOP [LP]
PlayerIndex	1 to N
PlayCount	Number of times the media must loop after this command has been received. 0 means infinite loop.

Server replies with the same message:

Example: SETLOOP(12,3).

Send SETLOOP(#,1) to stop the loop, where # is the ChannelIndex.

FADE

Performs a volume fade on the specified channel.

Client sends:

Field	Value
Command	FADE [FA]
PlayerIndex	1 to N
PlayerVolume	Final Volume gain in hundredth of dB (from 0dB to -100dB)
FadeTime	fade time (either timecode or millisecond format)
FadeCurve	1 to 3 (selects from fade curves): 1: Standard Logarithmic Audio Curve 2: Crossfade Curve 3: Linear Curve

Server replies with the same message:

Example: FADE(4,-1000,3000,1)

SETMONO

Set the Mono/Stereo configuration of the specified channel.

Client sends:

Field	Value
Command	SETMONO [MO]
PlayerIndex	1 to N
MonoMode	1 for mono 0 for stereo

Server replies with the same message:

Example: SETMONO(8,1).

Request Commands

GETSTATUS

Get the short status for the specified channel.

Client sends:

Field	Value
Command	GETSTATUS [GS]
PlayerIndex	1 to N

Server replies with the same message:

Field	Value
Command	GETSTATUS [GS]
PlayerIndex	1 to N
Status	Status of the channel as an integer: 0: Idle 1: Open 2: Close 3: Playing 4: Paused 5: Stopped 8: Locating 9: NotOnline
Position	Position in timecode (hundredth of seconds format)

Example:

- Client sends: GETSTATUS(4)
- Server replies: GETSTATUS(4,3,00:05:23/45)

GETFULLSTATUS

Get the status for the specified channel.

Client sends:

Field	Value
Command	GETFULLSTATUS [GF]
PlayerIndex	1 to N

Server replies with the same message:

Field	Value
Command	GETFULLSTATUS [GF]
PlayerIndex	1 to N
Status	Status of the channel as an integer: 0: Idle 1: Open 2: Close 3: Playing 4: Paused 5: Stopped 8: Locating 9: NotOnline
MediaName	Name of the currently loaded media (empty if no media)
Position	Position in timecode (hundredth of seconds format)
Duration	Duration of the currently loaded media in timecode (hundredth of seconds format)
Volume	Level attenuation in hundredth of dB (from 0dB to -100dB)
Balance	Current balance
OpenFileCounter	Open File counter. The value is incremented each time a new file is opened on the specified channel.
PlayCount	Count of programmed loops (0 means infinite loop)

Example:

- Client sends: GETFULLSTATUS(4)
- Server replies: GETFULLSTATUS(4,playing,testfile.wav,00:05:23/45,00:10:00/00,0,0,55,1)

GETPOSITION

Get the position of the current media for the specified channel.

Client sends:

Field	Value
Command	GETPOSITION [GP]
PlayerIndex	1 to N

Server replies with the same message:

Field	Value
Command	GETPOSITION [GP]
PlayerIndex	1 to N
Position	Current position in timecode (hundredth of seconds format)

Example:

- Client sends: GETPOSITION (4)
- Server replies: GETPOSITION (4,00:05:23/45)

GETDURATION

Get the duration of the current media for the specified channel.

Client sends:

Field	Value
Command	GETDURATION [DU]
PlayerIndex	1 to N

Server replies with the same message:

Field	Value
Command	GETDURATION [DU]
PlayerIndex	1 to N
Duration	Duration of current media in timecode (hundredth of seconds format)

Example:

- Client sends: GETDURATION(4)
- Server replies: GETDURATION(4,00:05:23/45)

GETVOLUME

Get the current volume gain of the specified channel.

Client sends:

Field	Value
Command	GETVOLUME [GV]
PlayerIndex	1 to N

Server replies with the same message:

Field	Value
Command	GETVOLUME [GV]
PlayerIndex	1 to N
Volume	Level attenuation in hundredth of dB (from 0dB to -100dB)

Example:

- Client sends: GETVOLUME(4)
- Server replies: GETVOLUME(4,-1000)

GETBALANCE

Get the current balance of the specified channel.

Client sends:

Field	Value
Command	GETBALANCE [GB]
PlayerIndex	1 to N

Server replies with the same message:

Field	Value
Command	GETBALANCE [GB]
PlayerIndex	1 to N
Balance	Balance in hundredth of dB. Positive values for right channel, negative values for left channel.

Example:

- Client sends: GETBALANCE(4)
- Server replies: GETBALANCE(4,1000)

GETCURRENTMEDIA

Get the name of the current media for the specified channel.

Client sends:

Field	Value
Command	GETCURRENTMEDIA [GM]
PlayerIndex	1 to N

Server replies with the same message:

Field	Value
Command	GETCURRENTMEDIA [GM]
PlayerIndex	1 to N
MediaName	Name of the currently loaded media (empty if no media)

Example:

- Client sends: GETCURRENTMEDIA (4)
- Server replies: GETCURRENTMEDIA (4,testfile.wav)

GETMEDIADIRECTORY

Get the media directory of the whole audio server.

Client sends:

Field	Value
Command	GETMEDIADIRECTORY [GD]

Server replies with the same message:

Field	Value
Command	GETMEDIADIRECTORY [GD]
MediaDirectory	Path of the current media directory

Example:

- Client sends: GETMEDIADIRECTORY()
- Server replies: GETMEDIADIRECTORY(d:\sounds)

GETFILELIST

Get the list of the files located in the media directory of the audio server.

Client sends:

Field	Value
Command	GETFILELIST [LI]

Server replies with the same message:

Field	Value
Command	GETFILELIST [LI]
FileList	File list with filenames separated by CR/LF pairs (0x13,0x0D)

Example:

- Client sends: GETFILELIST()
- Server replies: GETFILELIST(testfile.wav\r\nring.wav\r\nhello.wav)



The following characters are not allowed in the filenames:

References

- ',' comma
- ')' right bracket
- '(' left bracket

GETVERSION

Get the version of Medialon Audio Server software and the version of the ASCII protocol.

Client sends:

Field	Value
Command	GETVERSION [VE]

Server replies with the same message:

Field	Value
Command	GETVERSION [VE]
SoftwareVersion	Current version Audio Server Software
ProtocolVersion	Current version of ASCII protocol

Example:

- Client sends: GETVERSION()
- Server replies: GETVERSION(1.0.7.0,1.0)
 - Software version is "1.0.7.0".
 - ASCII Protocol Version is "1.0".

8.3.3 Response Message

Error List

Possible values for error codes:

- *Syntax Error:* input is malformed
- *Unknown Command:* the command verb is not recognized
- *Invalid Channel:* the specified channel index is incorrect
- *Parameter Count:* the count of parameters of the command is incorrect
- *File Not Found:* the specified media name was not found in the media directory

- **Invalid Time:** the time parameter of the command is invalid

Channel Status

The status field of the reply message to the GetStatus command can have one of the following values:

- **Idle:** initial state after power up
- **Open:** a media has been successfully opened and loaded
- **Close:** last OPENMEDIA() command failed
- **Playing:** the media is currently playing
- **Paused:** the media is currently paused
- **Stopped:** the media is currently stopped
- **Locating:** the media is reaching its target position
- **NotOnline:** the channel is not online

8.4 Keyboard Shortcuts

8.4.1 File menu

Item	Shortcut	Action
Quit	Ctrl+Q	Quit the application



Note that this menu is not available locally on the MAS Pro user interface.

8.4.2 Configuration menu

Item	Shortcut	Action
New Configuration	Ctrl+N	Create a new empty configuration
Open Configuration	Ctrl+O	Open and load an existing configuration file
Save Configuration	Ctrl+S	Save the current configuration to disk
Edit Configuration	Ctrl+E	Edit the current configuration

8.4.3 Server menu

Item	Shortcut	Action
Connect	Ctrl+Alt+K	Launch Medialon Audio Server Browser
Disconnect	Shift+Ctrl+K	Close current Medialon Audio Server connection
Retrieve Configuration from Audio Server	Ctrl+R	Retrieve the configuration from Audio Server to the remote Audio Client
Transmit Configuration to Audio Server	Ctrl+T	Transmit the configuration from the remote Audio Client to the Audio Server

8.4.4 Help menu

Item	Shortcut	Action
Medialon Audio Client PRO Help	F1	Launch Medialon Audio Server User Manual

8.4.5 Configuration Editor

Item	Shortcut	Action
New Player	Ctrl+P	Create a new Player
New Track	Ctrl+T	Add a new track to the selected Player
Output Mapping	Ctrl+M	Open the Output Mapping for the selected Track

8.5 Action on click

The use of the right click is widely implemented in Medialon Audio Client PRO and can greatly accelerate your programing speed.

8.5.1 Player Index click

Opens the Player details window.

8.5.2 Player Media Name click

Opens the Media Library window.

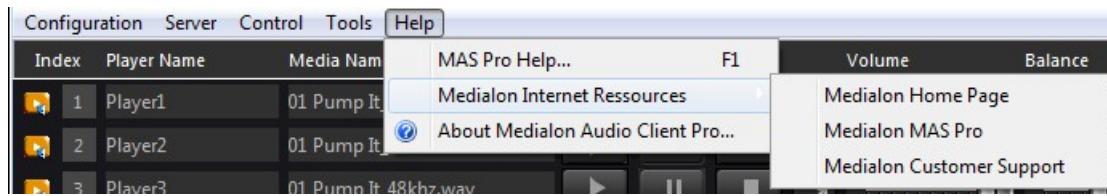
8.5.3 Ctrl + Volume click

Set all volume sliders to the same level:

References

- In the main window, it concerns all Players volumes.
- All tracks levels change in a Player Detail.
- All output volumes are set in Output Control window

8.6 Help



8.6.1 About Dialog

Clicking on the “Help/About...” menu item displays the “About...” dialog box.



The program version is shown at the bottom left of the box

9 Contact Us

Find more on our website www.medialon.com and on social media



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