Pyramix 15 User Manual

This version of the User Manual is not fully complete. Some chapters are missing, but all what is in it is already valid for Pyramix 15. When this disclaimer will disappear, the User Manual will be complete. Thank you for your understanding

All pages/links in yellow are not up to date

MERGING

Merging Technologies

User Manual Pyramix 15

Reference document for Pyramix users / version 15.0

Merging Software Team;
February 2025

We would like to dedicate Pyramix 15 to our very valuable long time user of Pyramix and friend François Musy who sadly passed away in 2024

In loving memory of François

Pyramix early bird and tireless twitter

Fly high dear friend

https://www.swissfilms.ch/en/person/francois-musy/4E75AB8A0D8B407EA34315B51395B559

https://www.imdb.com/name/nm0616042/

Document Version: Pyramix 15 User Manual-rev 0

Date: February, 2025

Table of Content

INTRODUCTION 14
Thank you! 15
Contacting Merging 15
Installation 15
About This Manual 15
Pyramix Licensing Manager – MLM 16
Scope 17
Windows 17
MAC OS (APPLE) 17
Commands Reference 18
MassCore™ 19
Important Note – User Interface 19
Pyramix Guides 19
Other Pyramix Guides 19
Assumptions 20
Conventions 20
Aneman 21
User Interface 22
Program Window 22
Application Timeline Theme Dark Gray or Light 22
Project Window 23
Status Bar 23
Project Editing Panel 24
Project Management Panel 24
Tab Windows (adjust page numbers) 24
Notes 26
Media Management (needs correct link page) 26
Global Libraries 26
ADR 26

Log 26
Metadata 26
Video 26
FX Rendering 26
Tab Windows Productivity Tips 26
Toolbars (link page) 27
Dual Monitors or Large Monitors 27
New Icons and support of 4k graphics 27
TimeCode Entry 28
Automatic Fades and Crossfades 29
Summary 29
Sample Rate Conversion (link pages) 29
MASSCORE 30
Windows Boot Choice 31
Memory 31
Core Load Indicators 31
MassCore and VS3 Monitoring Debug Windows 32
Overload Diagnosis and Cures 33
VST 33
DMA 33
Projects 34
Overview 35
Backward Compatibility 35
Project Files 35
Editing Project (correct link numbers) 35
User Templates 37
Media Management & Libraries 38
Housekeeping 39
Databases 39
Searching 39
Relocate Libraries 39
Conversion of Previous Version Libraries (v6.x or older) 39

Performance Tips!....39
Database Location....39
Media Folders....40
Search....41
Overview....41
Quick Search....41
Search Media Dialog....42
Search Media Dialog Tabs....42
Libraries Tab....45
Media Folders Tab....46
Search Results....47
Search Filters....47
Media Management....48
The Media Menu....48
Media Management and Library Tab Windows....49
Media Management and Library Tab Columns....49
The Trimmer....51
Media Management Tab Window....52
Media Browser....52
Media Management Tab Menus....53
Media Management Tab Context Menu....66
Media Manager File Format Conversions....67
Libraries and other View Windows....68
Other View Windows....69
Library Maintenance....69
Using Global Libraries....70
Global Versus Document Libraries....70
Useful Library Commands....72
Library Tab Windows....73
Library Menus....73
Library Tab Context Menu....77
Offline / Reference Libraries....78

Creating Offline/Reference Libraries 78
Using Offline/Reference Libraries 78
Media / Timeline Linkage 78
Mounting Rules 79
Tracks and Track Groups 82
Tracks 83
Track Numbering 83
Adding Tracks 83
Creating Tracks via Paste 83
Create New Tracks 84
Track Types 85
Synchronized Creation/Deletion of Tracks/Strips 86
Deleting Tracks 86
Routing Tracks to / from the Mixer 87
Track Display Height 88
Track Header Panel 88
Track Header Components 90
Track Record Modes 93
Automation Tracks 94
Bus and VCA Group Automation Tracks 96
Tracks Tab Window 97
Track Tab Column Fields 98
Track Envelope and Static Gain 99
Static Gain 99
Envelope (clip volume curve) 100
Track Groups 103
Track Group Column Fields 103
Transport and Navigation 106
Transport Control 107
Navigation 107
Timeline Structure 107
Time Scale Rulers 107

Bars & Beats Scale Ruler 110
Playhead Cursor Options 112
Cursor & Timescale Ruler Toolbars 113
Cursor Toolbar 114
Other Timescale Ruler Toolbars 115
Bars & Beats Ruler Toolbar 116
Markers 117
Project Markers 117
Track Group Markers 118
Media Markers 119
Markers Tab Window 123
Jog / Shuttle 124
Jog Wheel Settings 124
Mouse Scrubbing Settings 125
Vari Speed Audio Quality 125
Transport Controls 125
Transport Control Panel 127
Zooming and Panning 128
Time Scale Zoom and Pan 128
Track Height Zoom 128
Scroll Wheel for zoom 128
The Overview 129
Virtual Transport 2 TO BE REMOVED 129
Recording and Acquisition 130
Getting Audio into Pyramix Virtual Studio 131
Check Sync 131
File Format and Disk Limitations 131
Recording Audio into a Pyramix Virtual Studio Project 131
Record Source Before or After Effects 132
Track Record Modes 132
After Recording 132
AutoPunch Mode 133

SafetyRecord Mode 133
Background Recorders 133
Set-up and Operation 134
Edit while Recording 137
Recording Status 137
Take Logger 138
Importing Audio Files into Pyramix Virtual Studio 141
Mounting Media Folders 141
Sample Rate Conversion 141
Digitizing Sessions 143
Manual Digitizing 143
Autoconforming 144
EDITING 145
Editing in the Timeline 146
Clips and Compositions 146
Clips in a Composition 146
Sample Rate Mismatch (convert during playback) 146
Anatomy of a Clip 147
Locking Clips 148
Grouping Clips 148
Clip and Selection Editing 148
Clip Properties 148
Selection Properties TAB 149
Renaming Clips 151
Selections and Region Selections 152
Working with Selections and Regions 152
Dragging Clips into a Composition 153
Copy and Paste 153
Auto-Crossfade By Default 155
Clip Fade Commands 155
Editing Modes 155
Splitting Clips and Regions 156

Editing Context Menu 158
Editing Context Sub-menus 158
Jog-Wheel Editing 160
Edit Command highlights: 161
Automatic Silence Removal 164
EDL Tab Window 168
Source - Destination Editing 169
Concept 169
Setting up a Source - Destination Environment 169
2,3 and 4 Point Edits 171
Fade Editor 172
Fade Editor Tab Window 173
Toolbar 173
The Graphical Display 174
The Faders & Control Section 175
Parameters & Options Section 176
Save X Fade 177
Save Fade In / Fade Out 178
Mixer 179
Overview 180
Basic Mixer 183
Mixer Aux and Bus signal flow 184
Mixer Rows 184
Mixer Rows 186
Mixer Components 193
Input Strips 193
Basic Strip 194
M&S Stereo Strips 196
Multi Channel Strips 197
Channel Direct Outputs 197
Direct Monitoring Input Strips 197
Input Strips Fed From Internal Return Buses 198

Global Indicators / Buttons 199
Buses 200
General Mix Buses 200
Object Bus Send 204
Bus Master Strips 205
Panning Control Group Buses 206
Internal Return Buses 207
Groups / VCA 208
Multi mono busses 208
For routing purposes and/or mastering with internal busses it can be useful to have a matrice to ..... route the same signal to several instances. For this one case use a custom bus, and in this example it will be a 16 channel custom bus. (see page 198 on how to create a bus) 208
Merging Devices Preamp Remote Controls 210
Effects and Plug-ins 213
Highlighting 218
Multiple Strip Selection and Operations 220
Mixer Configuration 221
Rearranging Strips and Busses 222
Effect Management 222
Route Page 223
I/O Bus Capacity 224
Internal Return Buses 224
Mixer main menu 225
Save and recall a mixer 225
3D Panning Control Bus Window 227
GP Bus Channel Configuration or '3D Room' types 230
Sized Room Model 231
Mixer Delay Compensation 234
Creating and Configuring Mixers 238
Configuring a Blank or Existing Mixer 240
Dithering Options 242

Mixer Presets 243
Peak Logger 244
Mixer Sharing – toggling instantly projects 245
Multiple Projects sharing a single mixer 246
Rewire 246
Legacy Mixer 246
Ambisonics 248
Monitor 255
Monitor ! Window 256
Monitor UI (User Interface) 257
Speaker Sets 258
Configure page 259
Media Manager and Library Monitoring 263
External Inputs 263

INTRODUCTION

Thank you!

Congratulations on your purchase of **Pyramix Virtual Studio**. More than just a product, this is a gateway to the future of sound recording, editing, mixing and mastering. You have joined a worldwide community of users who have already discovered the Pyramix advantage.

Note: IMPORTANT! - The first thing you need to do is register your software and to be included in our user support list.
https://my.merging.com/auth/register

You can also register to receive our monthly newsletter informing you about new versions and products.

Contacting Merging

Merging Technologies S.A.
Le Verney 4
CH-1070 Puidoux
Switzerland
Phone: +41 21 946 0444

For all documentation inquiries or suggestions for improvement: www.merging.com

Installation

Please see the Pyramix Installation Guide and the Installation Guides for any software you have purchased.

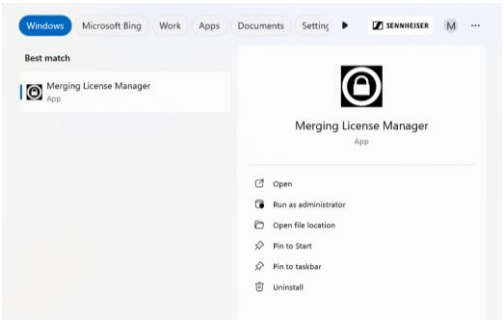
About This Manual

Not installed with Pyramix and available under the **Help** menu link or **[F1]** if online, this manual is intended to be a comprehensive reference source for all the standard features and functions in Pyramix 15.x.
Navigation In electronic form, all the **Contents** and **Index** entries and **Cross-references** are hyperlinks. I.e. clicking on them will jump to the relevant item.
PLEASE DO NOT PRINT THIS DOCUMENT UNLESS ABSOLUTELY NECESSARY
SAVE TREES AND INK BY USING THE HYPERLINKS
VERY IMPORTANT!
We strongly recommend you consult the other Pyramix guides for a more complete understanding of all the features and functions of Pyramix.

An online resources is also available on our knowledge base under
https://merging.atlassian.net/wiki/spaces/PUBLICDOC/pages/4820974/Pyramix

Pyramix Licensing Manager – MLM

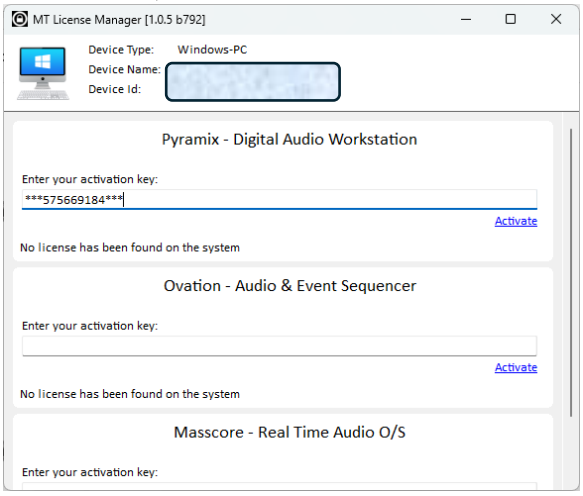
For this process it is mandatory to be online.
With Pyramix 15, the licensing method and system has changed. The new licensing system is called MLM.
Once Pyramix/Ovation installed run the Merging Licenser Manager App



MLM APP win 11

The License Manager will list the possible application that one can activated

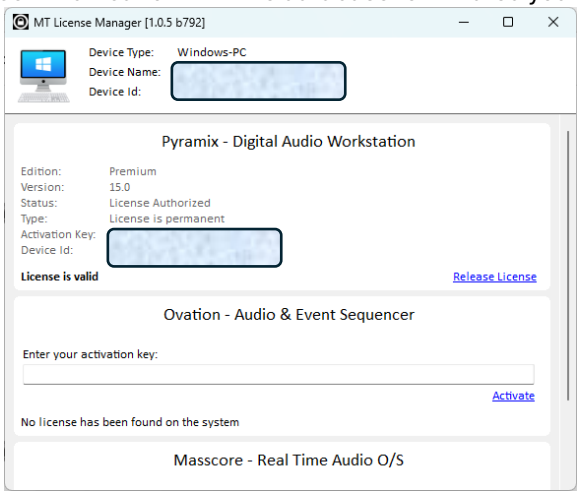
Note : if an application is shown, it doesn't mean that it is installed on your system.



MLM APP activate license

Paste (or enter manually) the numeric code received via e-mail within the designated field of the application, in this case Pyramix.

Once the code pasted and communication with the database terminated your system will be activated.



MLM APP license active

To release a license e.g. to move it onto another computer, click Release License. This operation will only function with an online system. Once the license released, it can be used on another system.

Under our knowledge base you'll find more information about licensing with MLM

https://merging.atlassian.net/wiki/spaces/PUBLICDOC/pages/855572481/Merging+License+Manager+MLM+for+Pyramix-Ovation?src=search

Scope

This manual is principally concerned with Pyramix software installed on workstations with used together with **Hapi Mk III, Anubis, MT-48** audio interfaces via **RAVENNA** (including discontinued products such as Horus, Hapi Mk I and Mk II).

Although many of the features and functions described also apply to **Pyramix or Ovation Native** there *are* differences in between our Native software and our Masscore software.

Pyramix 15 Compatibility

Pyramix 15.x is compatible with Windows 10 and Windows 11 Professional (64 bit) MassCore RAVENNA, Native/RAVENNA and Native.

Windows

Windows 10 is supported by Pyramix v14 Native & MassCore. (based on the **RTX64 -3.x** version).
Windows 11 is supported by Pyramix v14 Native & MassCore. (based on the **RTX64 -3.x** version).
Windows 7 is no longer supported since Pyramix 14.

For details on the supported **Windows** versions please refer to the **Pyramix 15 Installation Guide**.

Defer Updates

Merging recommends that you defer Windows updates, in this way you retain control of what is installed on your Windows system.
Details about the recommended Windows 10 Defer Update setting can be found here:
https://merging.atlassian.net/wiki/spaces/PUBLICDOC/pages/4818174/Windows+10+Defer+Updates
Details about the recommended Windows 11 Defer Update setting can be found here:
https://merging.atlassian.net/wiki/spaces/PUBLICDOC/pages/4818467/Windows+11+Defer+Updates.

Windows 10 Configuration

Merging Technologies recommended Windows 10 configuration details can be found here:
https://merging.atlassian.net/wiki/spaces/PUBLICDOC/pages/4818297/Windows+10+Configuration

Windows 11 Configuration

Merging Technologies recommended Windows 10 configuration details can be found here:
https://merging.atlassian.net/wiki/spaces/PUBLICDOC/pages/4820313/Windows+11+Configuration

MAC OS (APPLE)

In the past, Pyramix Native was functioning well with the Boot Camp solution, running a Win 10/11 on a Mac. Unfortunately, since the launch of M1 (and its successors) Boot Camp doesn't work anymore.

Pyramix 15 Native is potentially functional on Mac with Parallels (https://www.parallels.com/) including our MAD driver for AES67/RAVENNA in the solution. We are evaluating it regularly and have good results for the moment. A separate document is available on that topic, but we cannot guarantee that it is a future proof solution as Apple may change its architecture without notice.

Commands Reference

Available under the **documentation section on our website**, this document lists all the commands available in Pyramix together with the default Keyboard Shortcuts.

MassCore™

MassCore is an extremely powerful Pyramix option. A truly deterministic real-time engine that does not rely on the Windows operating system. This avoids the inherent restrictions and latencies introduced by the operating system and allows the channel/track-count to be increased to an unprecedented level. **MassCore** is scalable from 16 to 384 Live I/O (768 simultaneous) channels with a massive 512 channel bus structure (At 1FS).

MassCore enables a number of features:

- Larger Mixer configurations
- Extra 2.66ms and Ultra 1.33ms latency options
- Full Delay Compensation (VS3 and VST)
- VST 2/3 inserts on Buses and Auxes
- VST 2/3 Multi-channel support
- VS3 32 channel plugins
- External Inserts (physical effects)
- External Monitor Inputs and Talkback
- Virtual ASIO I/O
- Lawo Home support

Where features are **MassCore** specific you will see the **MassCore** logo:

Important Note – User Interface

Pyramix is not only a very powerful workstation, but also a highly configurable one, the user interface especially so. Screenshots in this manual are shown mainly with the default interface on a Windows System with the graphite scheme.
If you cannot find something in a Pyramix menu or toolbar that is discussed or shown in the manual, or something appears differently, please go to:
Settings > All Settings > Application Layout and examine the relevant tab window.

Within the same application layout page and since Pyramix 15, we introduced the possibility to choose your Theme, that means you can change the background general tone of the user interface. The choices **are Dark, Grey or Light**.

For a reason of simplification, all the user manual has been made using the **Dark Theme**.

Pyramix Guides

QuickStart Guide
Automatically installed with Pyramix and available under the **Help** menu, this document is intended to enable new users to achieve good results quickly.

Other Pyramix Guides

The other guides listed here are installed along with the Pyramix software and / or may be freely downloaded from the Merging Technologies website.

https://www.merging.com/products/pyramix/downloads

Installation Guide
Full details to enable a successful installation.

MassCore RAVENNA Network Guide
Detailed information about setting up Pyramix with RAVENNA and RAVENNA.

Pyramix Troubleshooting Guides
These guides aim to be a useful resource for Pyramix users. They address specific topics such as how to connect to a remote control or explaining the process on how to deliver a SACD.

Guides for Pyramix Optional Features
Documentation for optional features is provided in PDF format. Some are automatically installed with the Pyramix software. Others may be downloaded freely from:
http://www.merging.com

Assumptions

This **User Manual** and the other Pyramix guides assume you are thoroughly familiar with PCs and Windows terms and concepts. If the PC is new, please ensure the machine is working correctly before attempting to install Pyramix Virtual Studio.

Conventions

Conventions used in this manual:
Names found on Pyramix screens and menus are shown in bold. E.g. **Information & Settings**
Menu and sub-menu selections are shown like this:
View > Tracks > Show all Tracks
Which means:
Go to the **View** pull-down menu, mouse down to the **Tracks** sub-menu and choose **Show all Tracks**.
All Pyramix settings have been gathered in a hierarchical structure. Selecting **Settings > All Settings** opens the **Pyramix Settings** window with a folder and file tree in the left hand pane.
Where a dialog box has several Pages, Tabs are used to 'turn' the pages. Tab page selection is shown thus:
Settings > Keyboard Shortcut Editor : Clips
Which means:
Go to the **Settings** pull down menu, choose **Keyboard Shortcut Editor** then click on the **Clips** Tab.
Keyboard Shortcuts are shown thus: **[Shift + Alt + R]** means hold down the Shift and Alt keys then press R

Important Information
Important information is shown thus:
Note: When producing a CD image the mixer output **MUST** be stereo, not two monos.

Pyramix Virtual Studio Overview
Pyramix Virtual Studio is a powerful and flexible Digital Audio Workstation (DAW) integrating hard disk recording and editing, digital audio mixing, effects processing, machine control, video, and mastering.

Pyramix runs on the **PC** hardware platform

MassCore is scalable from 16 to 384 Live I/O (768 simultaneous) with a massive bus structure.
The Pyramix workstation is capable of up to 384 channels of 24-bit digital audio I/O. External access to these inputs and outputs is determined by your choice of **Anubis and Hapi (Horus)** options.

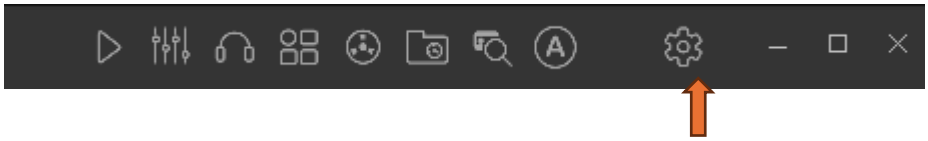
Pyramix v15 with MassCore Key:
384 @1FS / 192 @2FS / 96 @4FS / 64* @8FS & DSD

Please refer to the Merging Technologies website for details on the software packs.
https://www.merging.com/products/pyramix/software-packs

Aneman

If you have a Merging Technologies Network Audio Interface, e.g. a **Anubis, Hapi (Horus)** these devices use AES/67 or RAVENNA audio over IP to connect to the Pyramix workstation.
ANEMAN is an application developed by Merging Technologies and will enable you to connect, monitor, and manage your networked audio devices. It can be launched from its desktop shortcut:

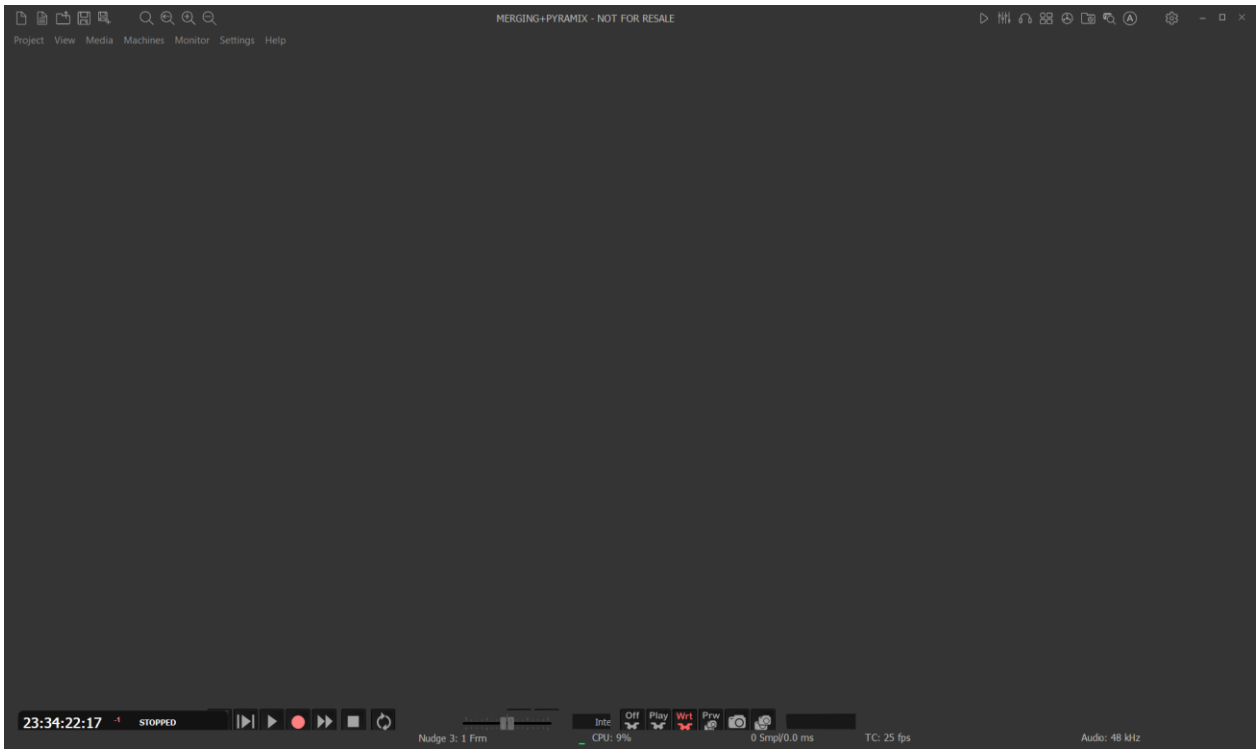
Or from its toolbar icon in the Pyramix Program Window:



Aneman Icon in Pyramix Program Window Toolbar

User Interface

Program Window

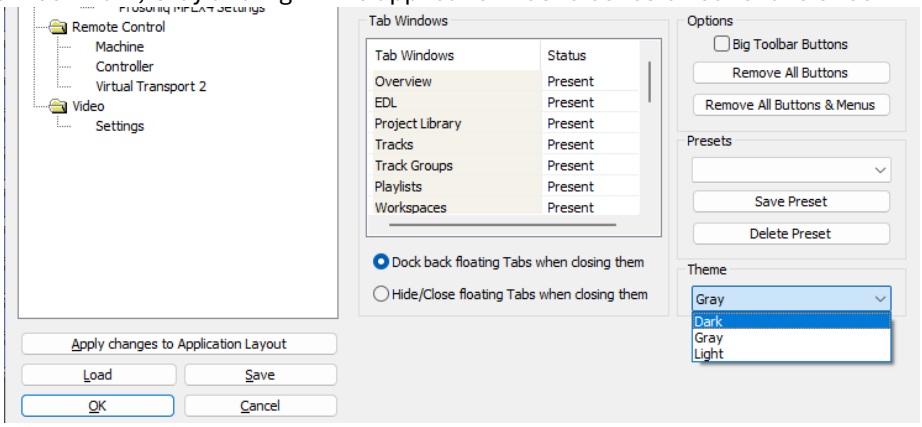


Pyramix Program Window

The main **Pyramix Virtual Studio by Merging Technologies** program window appears when the program is launched. It has dockable Toolbars across the top with a Transport bar and status information at the bottom. This main window can be resized, moved, minimized or maximized with the conventional Windows control boxes.

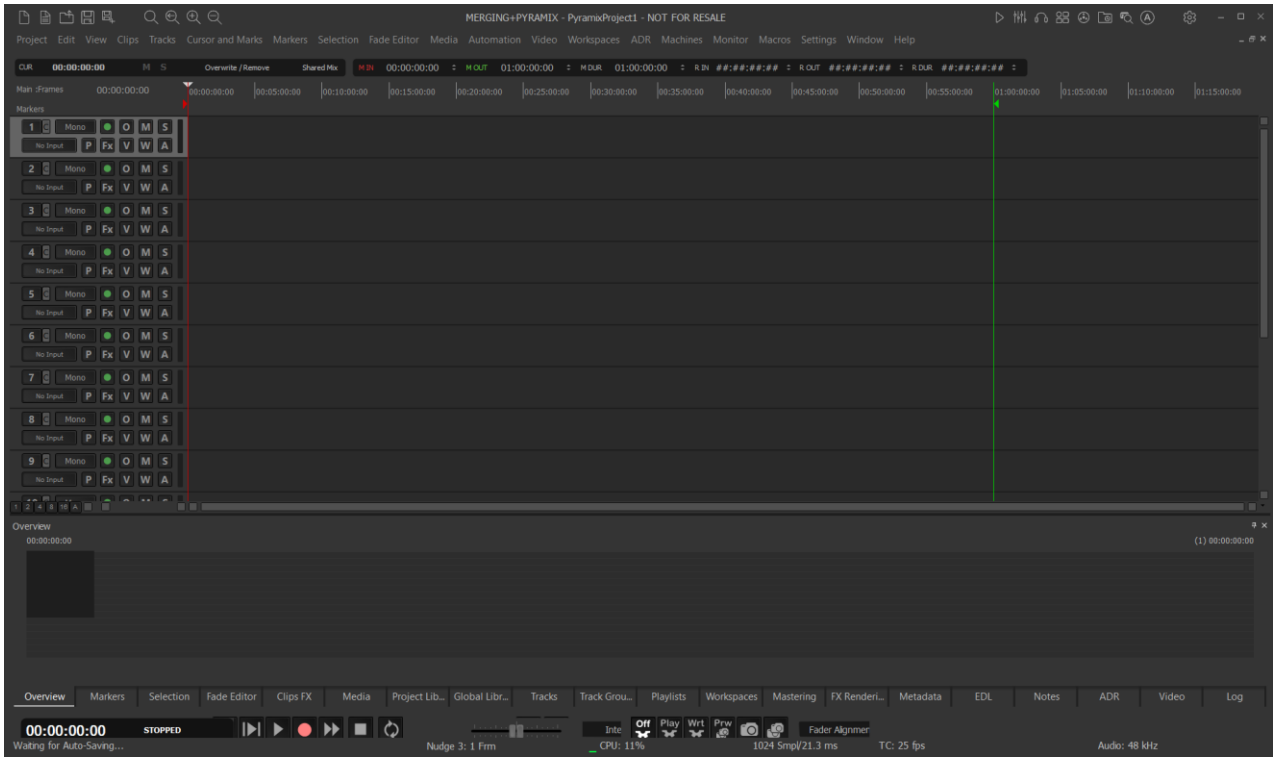
Application Timeline Theme Dark Gray or Light

The main theme can be chosen under **Settings> All Settings > Application Layout > Theme** and one can choose in between Dark, Gray and Light. The application has to be restarted to take effect.



Choose the Timeline Theme – Dark – Gray - Light

Project Window



The **Pyramix Project** window is always completely enclosed by the main window. A **Project** window only exists if a **Project** is open and appears automatically when a new **Project** is started. A **Project** window can be resized,
moved, minimized or maximized within the main window. If the **Project** window is made large enough, two separate panels are visible: the **Project Editing Panel** at the top, contains the **Timeline** which shows a graphic representation of the **Composition**. The lower section of the screen is the **Project Management Panel**. The dividing line between these panels may be grabbed with the mouse and moved up or down, thereby varying the space allocated to each panel. The **Project Editing Panel** can be maximized to fill the Project window by clicking on the arrow at bottom right where the scroll bars meet. A second click restores the previous window arrangement.

Status Bar

At the very bottom of the Pyramix Window the **Status bar** shows:
Message Area
Messages from Pyramix are shown here.
Nudge
Currently selected nudge setting

Playback Buffer Meter
Graphic representation of the current state of the Playback buffers together with the buffer **Level** selected currently.

When the transport is not running or there are no audio Clips under the playhead cursor this will have no segments lit. In normal playback all the segments are lit. If the number of Tracks approaches the disk bandwidth or buffer capabilities less segments will be lit.

Core (MassCore Systems)

CPU Load (Native Systems)
Latency
Input to Output Latency in Samples and Milliseconds
TimeCode
Current Frame Rate and Reference Source.

- If the selected Reference Source is available the LED lights in Green
- If the selected Reference Source is not available then the LED flashes in Red.

Audio
Current Sample Rate and Sync Source.

- If the selected Sync Source is available and locked on the LED lights in Green
- If the selected Sync Source is not available and the system defaulted to Internal then the LED lights in Red
- If the selected Sync Source is available but with a different Sample Rate then the LED flashes in Red.

Pyramix Busy Warning
When Pyramix is engaged on a very demanding task, such as a opening a huge project or a long and complex render the user interface may appear to *freeze* with the window changed to white and the interface not responding.
A status window opens at the bottom right of the main Pyramix window to inform the user that Pyramix is still operational. One of the following messages may be displayed:

- Pyramix Virtual Studio busy (during tasks like: opening project, mount, renders, libraries,...)
- AAF Parser busy (during AAF import task)
- Merging Technologies VS3 busy (during Mixer tasks)
- Merging Technologies Convert busy (during Convert task)

Note: The small progress bar within the Pyramix status window (white) will progress at different speeds. Please be aware that the progress bar does not necessarily indicate the remaining busy time.

Project Editing Panel

By default the **Project Editing Panel** has a number of dockable toolbars at the top, a row or rows of Time Scale Ruler tool bars and below this the Timescale Ruler(s), Markers Tray and the main Timeline Tracks display. This is where much of the audio editing is accomplished. Audio **Tracks** may be created, added or deleted, and audio **Clips** can be edited, moved, copied or pasted. Note that the **Project Editing Panel** automatically starts with the same number of audio **Tracks** as the number of **Input Channels** configured in the **Mixer** of a new **Project**.

Project Management Panel

The **Project Management Panel** has a number of tools for managing, navigating and modifying a **Project**. A single click on one of the tool **Tabs** at the bottom of this Panel, opens its window in the Panel. Double-clicking a **Tab** opens it as a floating window. Double-clicking the Tab of a floating window or its Caption Bar returns the window to the panel.
Note: By default, clicking the red **X** close box of a floating Tab Window removes it from the screen. It can be reinstated as a Tab from **View > Editor Tabs**

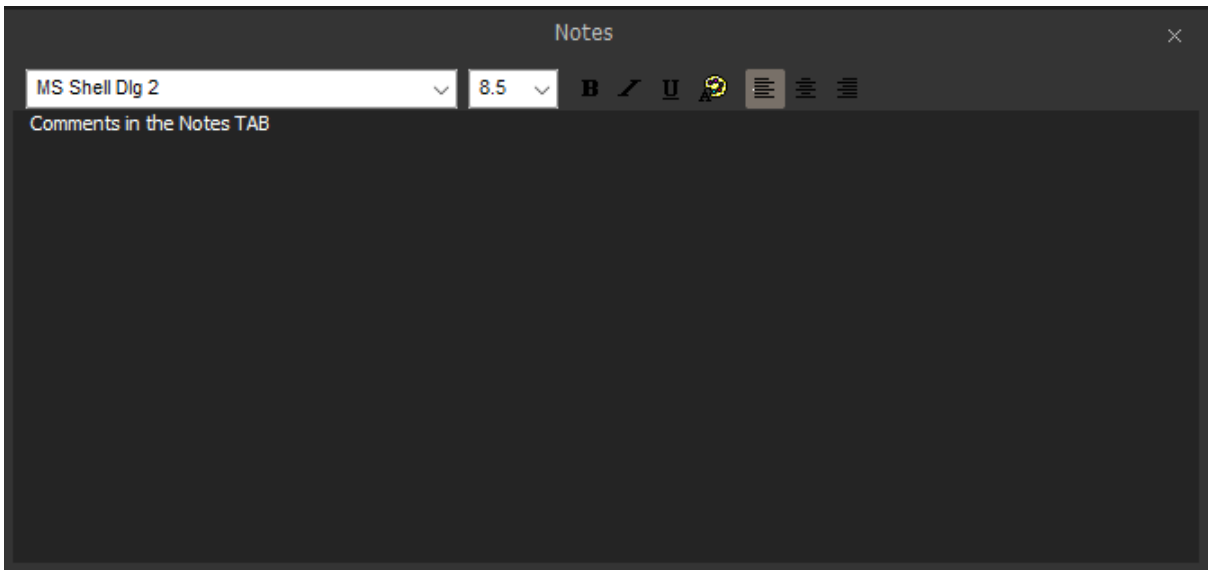
Tab Windows (adjust page numbers)

Many Tab window functions can also be accessed from pull-down menus.

Any or all of the Tab windows can be shown or hidden for a Project, and moved independently and outside of the main Program window. Double-clicking a Tab opens it as a floating Window. Double-clicking the header of a floating Tab Docks it back where it came from.

Tab Window List
Overview
Please see: The Overview on page ???
Markers
Please see: Markers Tab Window on page
Selection
Please see: Selection Tab Window on page
Fade Editor
Please see: Fade Editor Tab Window on page
Clips FX
Please see: Clips FX Tab Window on page
Media (formerly Media Manager)
Please see: Media on page
Project Libraries (formerly Document Library)
Please see: Project Libraries on page
Global Libraries
Please see: Global Libraries on page
Tracks
Please see: Tracks Tab Window on page
Track Groups
Please see: Track Groups Tab Window on page
Playlists
Please see: Playlists on page
Workspaces
Please see: Workspaces on page
Mastering (formerly CD/SACD)
Please see: Mastering Tab Window on page
FX Rendering
Please see: FX Rendering Tab on page
Metadata
Please see: Archiving Metadata on page
EDL
Please see: EDL Tab Window on page
Notes
Please see: Notes on page
ADR
Please see: ADR Tab on page 26
Video
Please see: Video Tab on page
Log
Please see: Log Tab on page

Notes



The Notes Tab provides a simple word processor for adding notes to the Project. Anything written here will be kept with the Project when it is saved.

Media Management (needs correct link page)

Please see: Media Management Tab Window on **page** Media Management & Libraries**38**

Global Libraries

Please see: Document and Global Libraries on **page 68**

ADR

Please see the ADR User Guide for more information. It is only functioning in conjunction with VCube. VCube a discontinued product. Though the VCube owners can still use it, if VCube is installed on a separate computer than Pyramix 15 and interconnect it via Virtual Transport 2.

Log

Check this Tab Window if you are experiencing problems.
Most of the Tab Windows are fully described in the sections of this document they relate to as in the cross-references above.

Metadata

Please see: Metadata Tab Window on page 458

Video

Please see: page xxxx

FX Rendering

Please see: page xxx

Tab Windows Productivity Tips

For more detail on Tab Window functionality, Please see Tab Windows on **page 697**

Toolbars (link page)

The Pyramix main window has a number of Toolbars ranged across the top or on the title bar. All the Toolbars can be torn away and rearranged. Hovering over a Toolbar button pops up a tool-tip with its function.
Toolbars can be Shown/Hidden using the **View > Scales / Toolbars >** menu.
Individual Toolbars can be configured in Settings > All Settings > Application Layout
Please see: Application Layout on page ???

Dual Monitors or Large Monitors

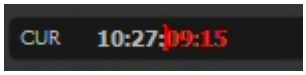
By default, when running Pyramix for the first time, the screen is horizontally divided with the Tab Windows below the Timeline.
When using Dual or Large Monitor setups, you may wish to divide the main project window vertically. With the Timeline displayed on the left screen and the Tab Windows on the right, more Tracks can be viewed simultaneously. This can be achieved by checking the **Display Timeline on the Left of Tab Windows** radio button in the **Settings > All Settings > Application > Timeline Layout** page. This change will take effect the next time a Project is opened.

New Icons and support of 4k graphics

With Pyramix 15 we have supported the 4k graphic and redesigned all Icons so that they adapt to these higher resolutions

TimeCode Entry

TimeCode values in Pyramix can be changed by using the up arrow, Increment or down arrow, Decrement buttons, by using the on screen numeric keys or by direct entry from the numeric keypad. An **OK** button or the **ENTER (numpad)** key finalizes the entry. In Pyramix numbers are entered in time code fields from right to left, a block at a time, progressively overwriting existing numbers.
This makes the most common TimeCode changes easy, I.e frames or seconds, without having to re-enter the minutes or hours.
Clicking in a register inserts a red I-beam cursor. Entries must be made in Hours : Minutes : Seconds : Frames order.
So, to enter 10 Hours and 9 seconds and 15 frames, key: **1 0 0 0 0 9 1 5**. **BUT** if you want to change the seconds then you only have to enter the seconds and frames E.g. to enter 9 seconds and 15 frames, key: **9 1 5** followed by **ENTER**. However, to change 10:27:10:15 frames to 10:27:09:15 you would need to key, **0 9 1 5** followed by **ENTER (numpad)**.
In practice most operators always enter the leading zero even when it is not required, to avoid errors.



TimeCode Register

Arithmetic TimeCode Entry
An existing TimeCode value can have time added to or subtracted from it. I.e. a relative entry. Type the number to be added or subtracted then, instead of pressing the Numeric Key Pad **Enter**, press **-** (Minus) or **+** (Plus) on the main keyboard or **Ctrl** + Minus or **Ctrl** + Plus on the Numeric Key Pad.

Increment / Decrement UP & DOWN Arrow Buttons
The **+** (plus) and **-** (minus) buttons to the right of the TimeCode registers increment or decrement by one unit per click of the smallest unit in the current register. E.g. Frames, Samples etc.

Modifiers	
Click	Frames
Alt + Click	Subframes
Ctrl + Click	Seconds
Shift + Click	Minutes
Ctrl + Shift + Click	Hours
Ctrl + Alt	Current Nudge Value

Automatic Fades and Crossfades

Summary

Auto Deglitching:

When enabled (Ramp length is user definable), Auto Deglitching allows on-the-fly Deglitching in playback when
no fades or crossfades have been created.
This is set globally in Settings > All Settings > Application > Playback/Record
To set Auto Deglitching for individual Clips use: **Clips > Properties**. Clicking in the **Auto Deglitching** field opens a drop-down list with the option to **Follow General Settings** or to set a value for the Clip between **1.0 [ms]** to **5**
[ms] in 0.5 [ms] steps.
(The Auto Deglitch action is not visible on Clips, since it only occurs in the playback engine)

Auto Crossfade:

Recording
Set in Settings > All Settings > Project > Record : Post Processing: Auto Cross-Fade.
When enabled (Fade Type and duration is user definable, creates a Fade/Crossfade on Clips being recorded.
Playback
Set in Settings > All Settings > Application > Editing : Drag & Drop: Auto-Crossfade by default - Control key for Drag & Drop.
Off by default. When checked, a fade will be created on Clips that overlap when they are dragged on top of each other during editing.
The default X-fade can be modified in the **Fade Editor**. Simply edit a Crossfade to taste, then “overwrite” the
default X fade. (Click on **X Presets : Save Preset** and choose **Default**.

Sample Rate Conversion (link pages)

Pyramix can convert Clips to the current Project sampling rate, automatically and on-the-fly. It can also convert in non real-time using the very high quality Merging Technologies **HeptaCon** Sample Rate Converter.
Please see: Real-time Sampling Rate Conversion on page xx
Convert - Quick Convert sub-menu on page 7x
and Sample Rate Conversion on page xxx

MASSCORE

Windows Boot Choice

You will see a new screen after the **P.O.S.T**(Power On Self Test) screen before Windows starts to boot.
This screen offers the choice between:
Windows 10/11
and
Windows 10/11 MassCore
Please choose **Merging Technologies MassCore**. Boot will then proceed as normal.
If you do not make a choice then the machine will boot into Masscore mode after 30 seconds automatically. Please ignore all other options on this screen unless asked to use them by Merging Technologies technical support staff.

Memory

MassCore memory allocation is 256MB for all Operating Systems.
The total amount of memory available in a MassCore machine affects the number of VST channels which will be available.
With 8GB or more of system memory, 384 VST channels are available, but we recommend running Masscore with 32GB or 64GB of RAM for normal operation with Video playback and immersive workflows.

Core Load Indicators

In **Native** systems a single **CPU**: load indicator is present in the Title Bar:

The CPU load displayed in the Pyramix bottom bar is not the CPU usage as computed in Windows task manager. CPU load in Native is computed in this way: (time to process audio frame) / (duration of one frame) * 100.
Thus, it is the percentage of time used to process in one audio frame duration; this indicator is more useful than CPU Usage because it takes in account CPU stall during processing time.

In **MassCore** based systems the **CPU:** load indicator is supplemented by a **VST:** core load indicator in the Title Bar:

MassCore Load
(Green bar, orange when heavily loaded, red when overloaded): Indicates the MassCore Load.
VST Core load
(Blue bar, orange when heavily loaded, red when overloaded): Indicates VST core load for VST processing.
In both screenshots the left-hand bargraph display shows disk buffering.
MassCore & CPU load indicator range

- Green from 0% to 74% = Safe mode*
- Orange from 75% to 84% = Moderate Risk*
- Red from 85%->100% = High Risk

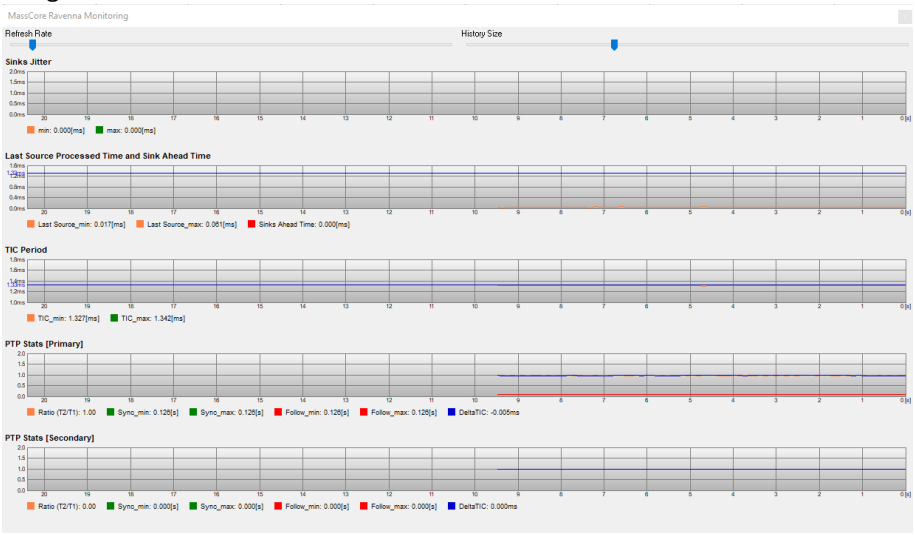
*MassCore users: Will have enhanced Core stability when using recommended dedicated Graphic Cards.

*Native users: Owners of recent laptops owners often experience performance problems when the CPU load reaches somewhere around the middle point of load, then random CPU jumps causing sudden glitches are possible.

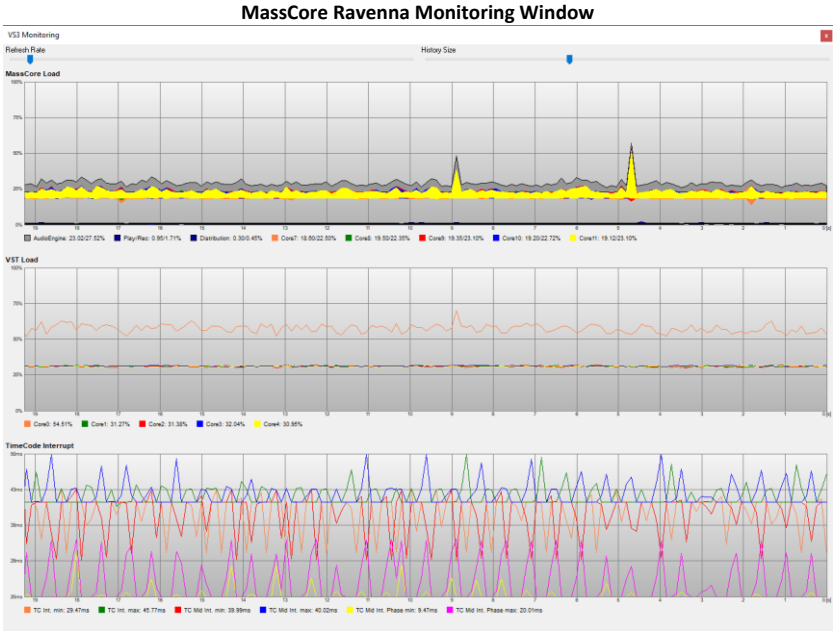
This has also been seen when benchmarking with Non-Merging Applications on recent laptops.

MassCore and VS3 Monitoring Debug Windows

To see more detailed information about both Core Load Indicators, **[Shift + Click]** on them to open the two **Monitoring** debug Windows:



MassCore Ravenna Monitoring Window



VS3 Monitoring Window

In order to support some VST plug-ins which need a big buffer to be efficient (e.g. Algorithmix,...) we recommend that you increase the VST Plug-ins engine Latency size up to 8192 smpl (samples) using the VST Plug-ins Engine Latencies slider in the All Settings > Hardware > MassCore page.
Note: this value can only be adjusted when no project is open.
Important! If a **Drop** (glitch) occurs, the **Core indicator** will blink. Click on it to reset it.
Note: This indication may be useful if, for example, you do a Realtime Mixdown or Recording

and leave the Studio for a minute to get a coffee. If, on your return, you see the **Core** blinking this would mean that you have experienced a drop, so that you probably have a glitch in you final mix or recording.

Overload Diagnosis and Cures

First determine whether the CORE indicator or the VST indicator is turning red during a glitch.
If the MassCore (CORE) indicator becomes red during playback or recording you have exceeded the capacity of the workstation. You should reduce the size of your project mixer and/or the amount of active plug-ins you are using, or try increasing the **Max Mixer Delay Compensation** slider value in the Mixer Settings page (**Settings > All Settings > Project > Mixer > Mixer Settings**). You may also try changing the buffered read and write settings of your .pmf files from within the **Project > Record** page under **Format/(PMF)/Settings** for projects with large numbers of audio tracks (approaching machine capacity for current sample rate).

VST

If the VST indicator becomes red you might want to increase the MassCore **VST Plug-ins Engine : Buffer Size**
slider value in the **All Settings > Settings > MassCore** page. The VST buffer size can be increased in order to support VST plug-ins that need larger buffers in order for them to work efficiently. So, if you are experiencing VST Core Loads or Peaks (100%) we recommend that you set the **VST Plug-ins Engine : Buffer Size** value higher, it can go up to 4096 samples to help support certain VST plug-ins. Note that you can also monitor the VST Core load by **Shift Click**ing on the **CORE %** indicator, this will open the VST core load debug window. (See above) If you see spikes (red) during playback or an idle indicator then it may be advisable to increase the **VST Plug-ins engine**
Latency (Settings > All Settings > MassCore : VST Plug-ins Engine Buffer Size), this value can only be adjusted
if all projects are closed within Pyramix.

DMA

If a DMA Bus (Direct Memory Access) load (peak) occurs, the Text will blink with red DMA text. For the user this means that something inappropriate occurred during, for example, the Recording and that the recorded file could contain abnormalities. We recommend that users verify their System configuration/calibration if such indications occur regularly.

Note: These bars should be ignored when loading a project, making changes in the graphical layout of Pyramix when stopped (opening pages, moving the mixer, etc.), or doing offline processes (renders, non real-time mix-downs, etc.). If the indicators become red during these phases of your work, simply click on the indicator bar to reset it.
Pyramix Latency Modes for MassCore
Low, **Extra** and **Ultra** modes are supported.

Projects

Overview

Projects are the top level of Pyramix organization. There are four types of Project. For most applications the one most commonly used is the **Editing Project**. The second type is **Digitizing Session**. As the name implies this a special type of project optimized for media acquisition.
Two further Project types, **DXD Mixing Project** and **DSD Project** are solely concerned with high-definition audio and the production of SACD masters.
There is also the option to **Load a Template**. Templates are the quickest way to configure Pyramix for a specific purpose. A wide variety of Templates are supplied with Pyramix and can also provide a basis for refining your own 'User Templates'.
You can find more information about Digitizing Sessions here: Digitizing Sessions on page 165

Backward Compatibility

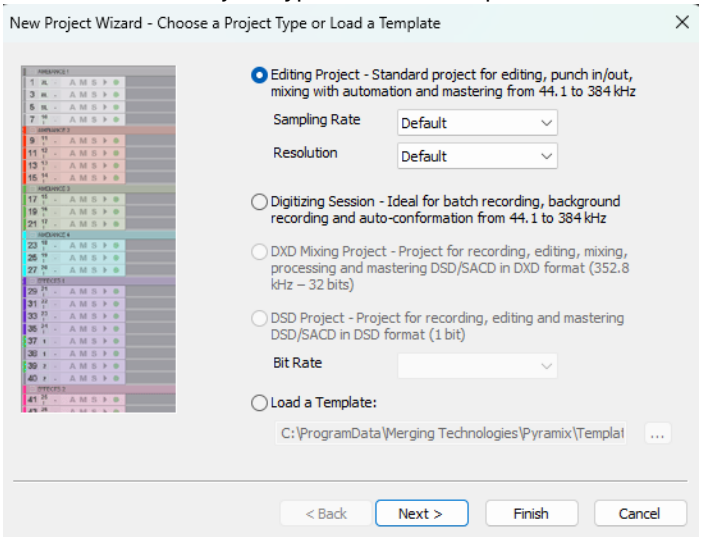
Even the latest version of Pyramix is capable of saving in project formats back to V4.3. Some current features are obviously not supported in previous versions but the **Project > Save Special** option offers the ability to save in all relevant previous versions back to V4.3.
Important! The v10 and later Aux Bus structure, if used, does not allow for **Save Special**. Only v10 and later Projects with Legacy Aux Buses can use **Save Special** to versions earlier than v10.
Note: Pyramix v14 Projects are not compatible with Pyramix 25thAnniversary and earlier.
Please use **Save Special** if you need backward compatibility.

Project Files

Saving a Project saves a number of files in a single compressed file. Including **.pmx**, **.pml**, **.Playlist.pml**, **.Default- Library.pml** and **.Composition.pml**.
On opening a Project these files are decompressed.
These files will only be all visible in Windows Explorer when the project is open in Pyramix.
When the Project is saved these files are re-zipped into a single.pmx file and, when the Project is closed the decompressed temporary files are deleted.

Editing Project (correct link numbers)

New Project
1. Launch Pyramix Virtual Studio
2. Choose Project > New.
3. The New Project Wizard - Choose a Project Type window will open.

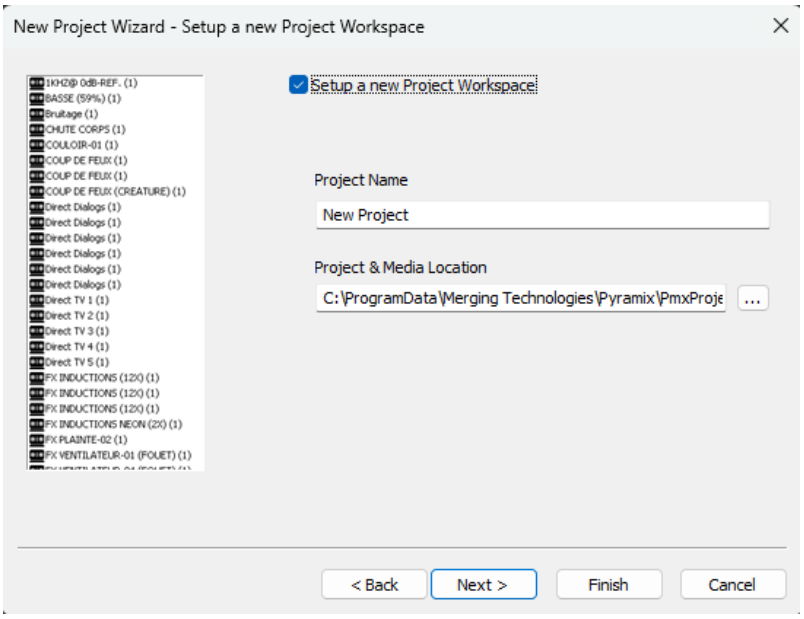


New Project Wizard - Choose a Project Type dialog

4. The default is **Editing Project** which is the type we will use.
5. Choose a suitable sampling rate from the **Sampling Rate** drop-down list. (Use 48kHz if in doubt and using an analogue input)

6. Choose a suitable bit-depth from the **Resolution** drop-down list. (Use 24 bit if in doubt)

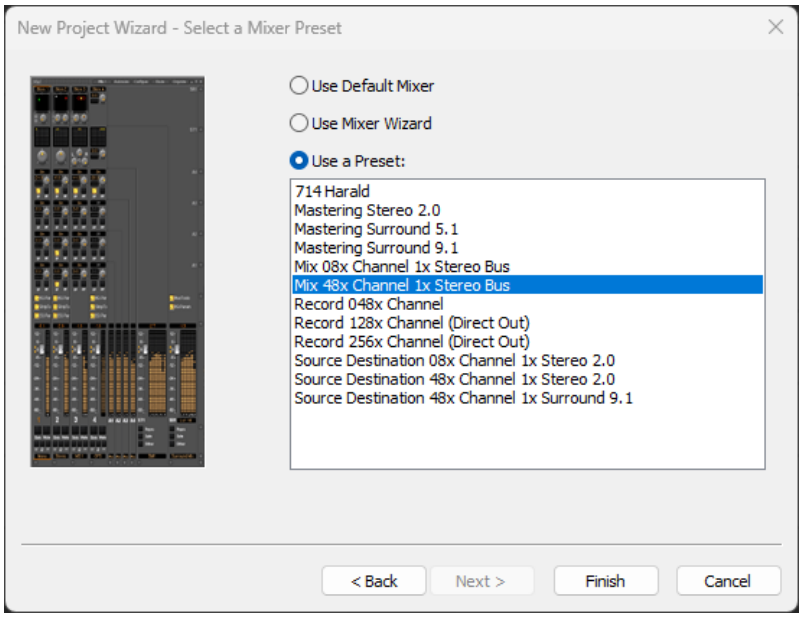
7. Click Next. The New Project WIzard - Setup a New Project Workspace dialog will open.



New Project Wizard - Setup a new Project Workspace dialog

8. Click in the **Setup a new Project Workspace** box to tick it.
9. Type a name for the Project and either type a suitable path to **the Project and Media Location** or use the ... button to open a **Browse for Folder** window. This works like a Windows Explorer window and enables you to navigate to a suitable folder.

10. Click Next. The New Project Wizard - Select a Mixer Preset dialog will open.



New Project Wizard - Select a Mixer Preset dialog

11. If this is the first time you've used Pyramix, choose the **Mix 08x Channel 1x Stereo Bus** preset in the dropdown list by clicking on the name. Note that the **Use a Preset** radio button is checked automatically if a Preset is selected.
12. Click **Finish** to activate your new Project. It will open with a **Project Window** and **Mixer Window**. There will be 8 empty Tracks in the **Project Editing Panel** corresponding with the **8 Mixer Input** channels.

Mixer Wizard
Please see: Mixer Configuration Wizard on **page 238**

Presets
A considerable number of pre-configured presets are supplied for common tasks. You can add your own custom Mixer Presets to the list. Please see: **Mixer Presets - Snapshots / Mixer Rounting and State recall and save on page 225**

User Templates

When you have a Project with a configuration which may be useful for future Projects you can save it as a Template.
I.e. the current Project minus all the Cues. Simply select:
Project > Save Template
A Browser window opens with the default Templates Folder open. Choose an existing Template folder, if appropriate, or create a new one. Name the Template and click on **Save**

Media Management & Libraries

Housekeeping

The hierarchical filing system can become confusing and cluttered very quickly when dealing with a multitude of Media Files. Complex audio projects generate thousands of more or less enigmatically named files.
Keeping track of all the files used in a Project in the Windows filing system can become a nightmare even if the user is meticulous.
Pyramix uses the concepts of Media Drives/Folders, Databases and Libraries to reduce the clutter. The Media Management Tab, the EDL Tab, Library Tabs and Views such as; Search Results, Used Media, Media Present in Project Default Folder and Media NOT Present in Project Default Folder, are all ways of viewing and manipulating the contents of the Databases. These Media Management tools help users to work in a structured and simple manner whilst keeping track of all the Project components.

Databases

All Media listings i.e. **Libraries** are held in databases. A default path to all the database files can be set in **Settings > All Settings > Application > Location : Default Database Location**. Otherwise the Database path will be **C:\Documents and Settings\<user name>\Application Data\Merging Technologies\Pyramix**.
Important! Enough free space (several GB) must be preserved on disk for these files to grow under normal usage. If necessary, the files can be relocated to a bigger or faster drive.
We strongly recommend using SSD drives for Medias

Searching

Database files can be searched using a simple SQLite based search tool which is available in Library, Media Manager, and View Toolbars. Search works with combinations of logical operators *****, **AND**, **OR**.

Relocate Libraries

To relocate the Library Databases:

Settings > All Settings > Location : Default Database Location
- Type a new location for the database files or **Browse** to one.
- Check also that the Fade Library Location is valid:

Settings > All Settings > Application > Editing : Fade Library Location
- If it isn't valid or in the location you wish it to be, proceed as for the Database Location above.
- Click on **OK**
- Restart Pyramix.
- Database Library paths will then be updated.

Conversion of Previous Version Libraries (v6.x or older)

The Version 7 library format is not backwards compatible, so conversion is required for libraries created in previous Pyramix versions:
- Pyramix does the conversion automatically the first time it opens any version 6 (or older) library.
- Conversion will take some time, especially with large libraries, but is only required once.
- A backup (.pml.6xx) is made of the original library so that it can be renamed and restored in version 6 or previous.
- The .pml file is replaced with a converted version 7 library
- Note that subsequent changes made to the new version 7 .pml library will NOT be forwarded to the backup .pml.6xx library.

Performance Tips!

Database Location

For optimum housekeeping perfomance Merging recommend strongly that the **Default Database Location**

should be set to point to the fastest drive on your system. **SSD**s are recommended and, where possible, not the **C:\OS defaultdrive** (since a drive with less activity and higher speed should perform better). Saving Project Save times will be faster if Saves are made to a high-performance Disk (e.g. an SSD). Saving to older Disks (e.g. 5400 rpm etc.) or saving to the Disk where the OS is located (this disk is often very busy with other tasks) could slow down Saves times.

Media Folders

Media Folders are Windows folders or drives which contain **Media Files**. Pyramix needs to mount these **Media Folders** specifically, in order to access the **Media Files** contained therein. Once mounted, suitable files are displayed as **Master Clips**. I.e. pointers to the underlying Media audio files. Mono and interleaved Stereo and Multichannel Media files are all displayed and manipulated as single Master Clips These can be dragged and dropped or copied and pasted directly into the **Timeline** or into a **User library** from the **Media Management** Window regardless of format, sampling rate or bit depth.

Media Folder Synchronization
Pyramix synchronizes the contents of mounted Media Folders with the underlying Windows folders automatically. When media is added to these folders by Merging Technologies or third-party applications the changes are reflected automatically. In the event of a consistency problem the Media Manager **Media Folder > Refresh Media Folder** function will remount the selected folder and rebuild indexes.

Media Target Settings
When a Project is created, either with Project > New or Project > New From Template and a Media Folder is created or selected, the Project General : Project Media Folder Media Folder, the Record : Target settings Media Folder, the Project > Render : Target Settings Media Folder and the Project > Mix Down : Target Settings Media Folder all point to the same folder. These target settings can be changed later and each can point to a different folder.

Audition Play
Master Clips in the Media Management window and all audio objects in the Library windows can be auditioned through the **Monitor** as a MONO downmix as determined by the **Monitor** settings Please see: **Media Manager and Library Monitoring on page xxx**. The toolbar Play (**Space)** and Stop (**Esc**) buttons starts and stop playback of a selected object. Double-clicking an object begins playback at the start.

Drag and Drop
Audio Media files compatible with Pyramix may be dragged and dropped into Pyramix Libraries and the Timeline.
Single or multiple files can be dragged and dropped in the conventional Windows manner from browser windows and from applications that support such operations, e.g. iTunes. As a rule of thumb, if you can drag and drop a file from a location to the Desktop, you can drag and drop to the Pyramix Timeline or libraries.
Example:
Start Pyramix, open a Project and a library view. From a Windows Browser window select one or several audio files and drag them over the library. If the selection contains compatible audio files the library will highlight. Drop the files over the library. Any compatible files will be added to the library and can be then used just like any other library file in Pyramix.
Note: The converse, dragging and dropping from a Pyramix library to the Desktop or to a browser or other application is NOT supported.
Drag and Drop and Copy to Project Default Folder
If you hold down the **Ctrl** key whilst dragging and dropping into the Timeline then the Media File(s) will also be copied to the Project Default Folder. Otherwise they are mounted from their source location directly.

Drag and Drop TO Libraries
A Timeline selection, single or multiple Clips on one or many Tracks can be copied to a Library by holding down **Alt + Shift**, dragging over the right-hand pane of a Library and dropping.

Database Views
The Media Management Tab, all Libraries, the Used Media view, Project Default Media view, Non Project **Default Media** view and the all important **Search Results** window are all ways of looking at the database files for particular purposes.
Each of these windows is a way of viewing and manipulating the contents of the underlying databases. In database terminology, a report. The **Media Management Tab** window is also the main bridge between the Windows filing system and the Pyramix Media database.
Look and feel, controls and menus are almost identical in all Libraries and Views except for Media Management.

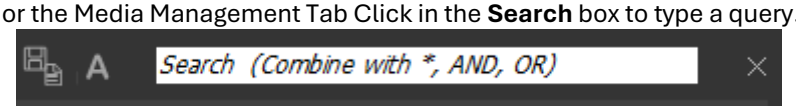
Search

Overview

Thanks to the database engine Pyramix has comprehensive search tools. All Library views and the Media Manager have a powerful Filter Search which refines the current view.
A simple search field is available in all Libraries and the Media Manager. A more comprehensive search dialog is accessed via **Media > Search Media** or via a toolbar icon. For power users the dialog can be associated with a keyboard shortcut. Search Results are added to the Global Library in a folder labelled with the date and time of the search and the search term(s). Results may be further refined using **Filters**.

Quick Search

In any Library Tab or the Media Management Tab Click in the **Search** box to type a query.



Search Box and Buttons

When you click in the ***Search*** box a list of previous search terms (if any) drops down with the option to ***Clear Search History*** at the end. This option clears the previous search terms visible at the top of this drop-down list but leaves the current term in the search box intact. The [X] deletes the current search term from the box.
Note: When **Exact Word Match** is checked in the **Search Media** dialog (See below) then only exact words in the database are searched.

The **Search Exact** button toggles **Exact Word Match** on and off. Default is **Off**

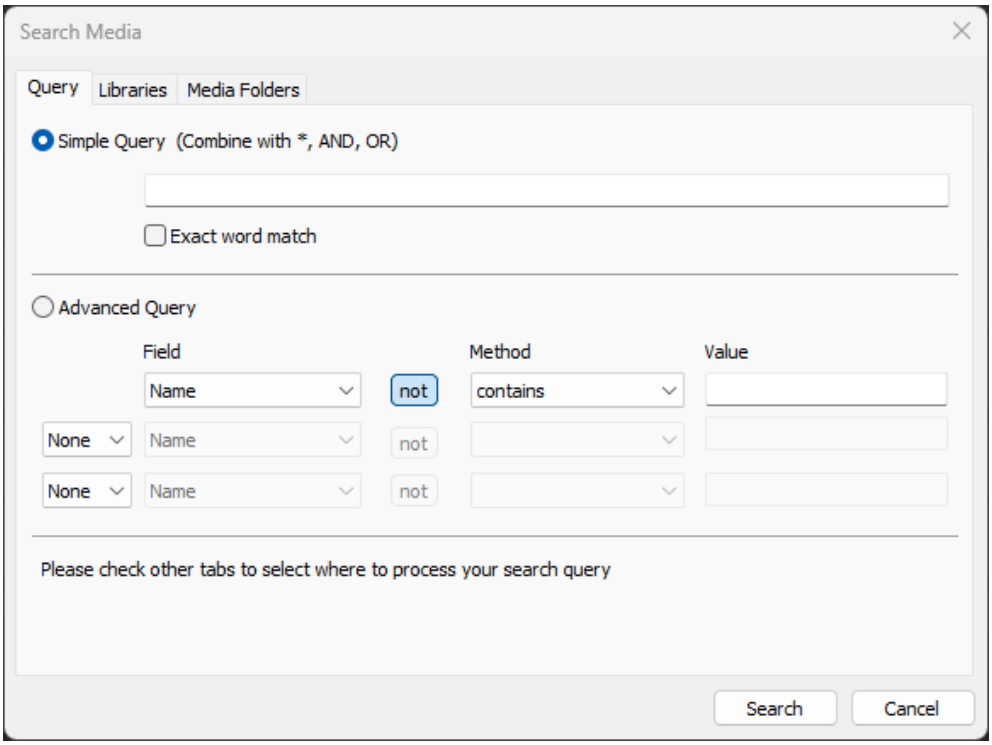
Search Exact button active.

Clicking on the **Add to Search Results** button creates a new folder in the Global Library, named with date and the search request term(s). This folder can be renamed.

Search Media Dialog

The **Search Media** dialog is accessed via **Media > Search Media** or:

Clicking on the **Search Media** Toolbar icon:



Search Media dialog - Query Tab - Simple Query

Search Media Dialog Tabs

The Search Media dialog has three Tabs:
Query Is where search terms are set
Libraries Is where Libraries to be searched are set
Media Folders Is where Media Folders to be searched are set

Query Tab
The **Search Media** dialog opens with the **Query** Tab. This Tab sets up the search terms.
The top section is for Simple Queries. For more advanced searches the bottom section offers further possibilities.

Simple Query

Simple Query This radio button toggles with **Advanced Query**.
When **Simple Query** is selected the search is restricted to the **Name** of the object(s) to be found. Search term(s) are typed in the text entry box. **AND** and **OR** can be used in between two search terms to increase the scope. Similarly, ***** can be used as a wildcard at the beginning or end of a search term.
Exact Word Match When checked the search will only identify **exact** words in the database. The wild card ***** is still valid. When unchecked the words are searched partially. E.g. **car** will return items such as **car** door opening but also **car**avan passing or even s**car**y scream.
Note: When **Exact Word Match** is checked it also applies to the quick search at top right of Library Tabs.

Simple Query Syntax

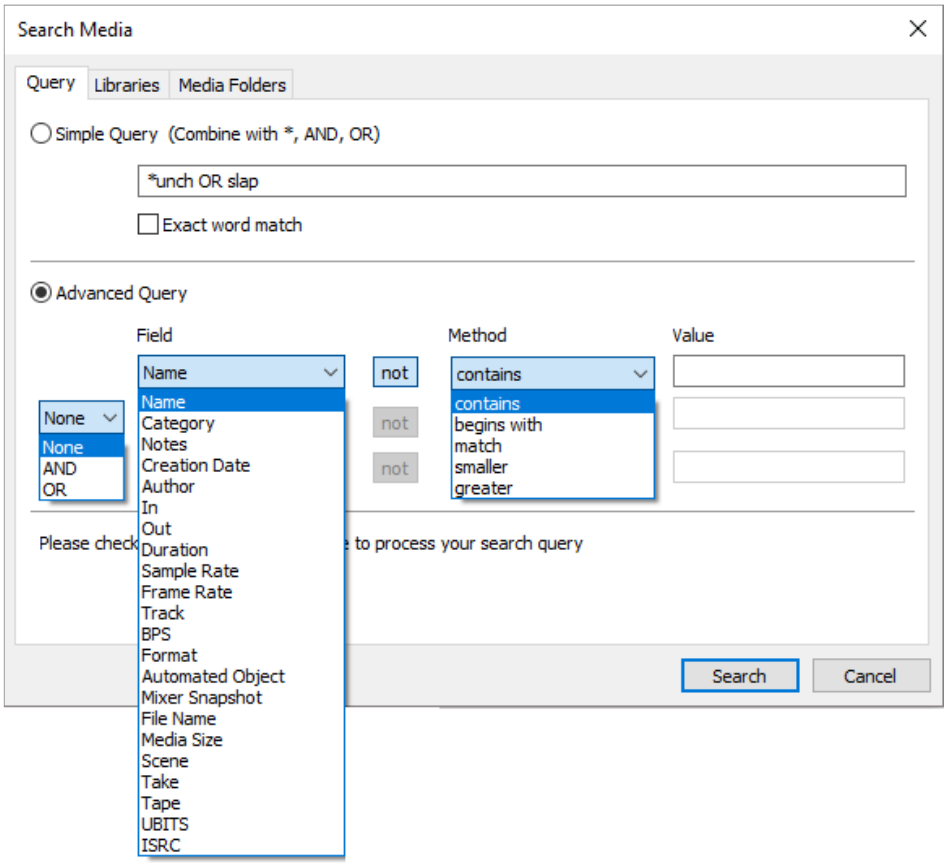
The wildcard * can also be used as a prefix or suffix so that:

***unch** will return items including:

“munch”
“punch”
and
auto* will return items including:

“automobile”
“automat”

Advanced Query



Search Media dialog - Query Tab - Advanced Query

Advanced Query This radio button toggles with **Simple Query**. When selected the following options are available:

Field **Name** drop-down list offers the choice of all file types and information ields on which a search can be conducted:
Name
Category
Notes
Creation Date
Author
In
Out
Duration
Sample Rate
Frame Rate

Track
BPS
Format
Automated Object
Mixer Snapshot
File Name
Media Size
Scene
Take
Tape
UBITS
ISRC

Not When lit (blue) inverts the search to exclude any files containing the search term in the chosen field.

Method The drop-down offers the choice of:

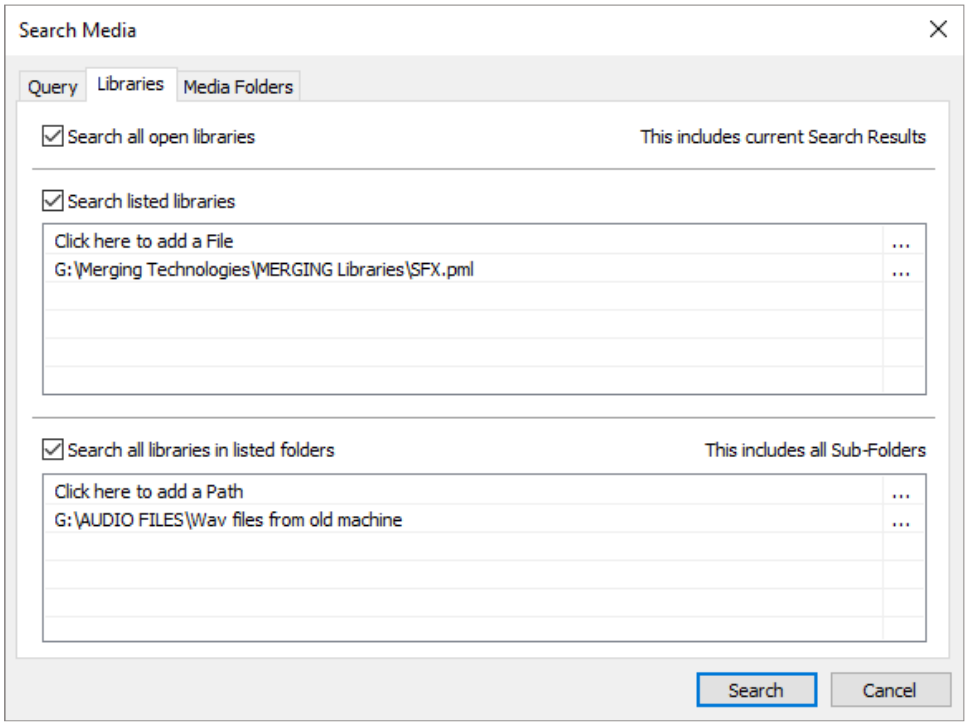
Contains
begins with
match
smaller
greater

Value Type the search term here

The next two rows are used to add further terms to the search and have the same controls as the first except for the first drop-down which offers the choice of:

None
AND
OR

Libraries Tab

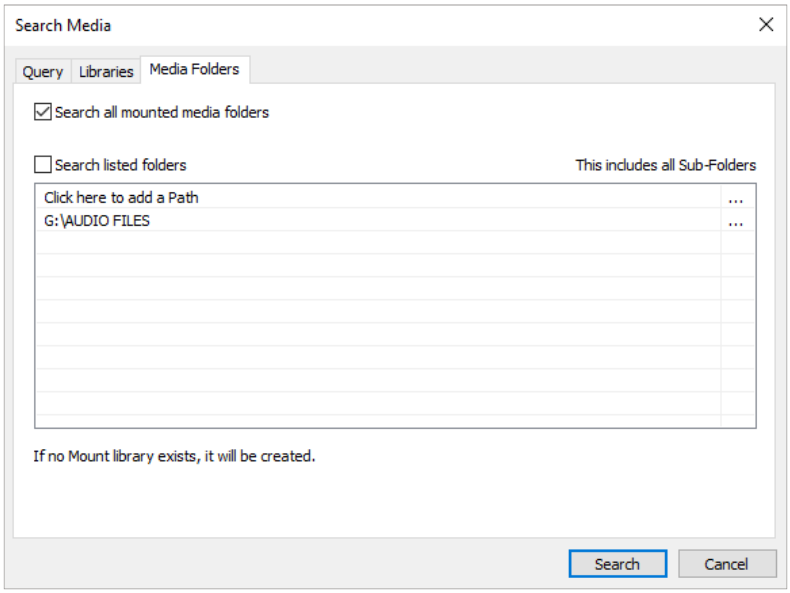


Search Media dialog - Libraries Tab

The **Libraries** Tab determines which Libraries will be searched according to the search terms set in the **Query** Tab.

Search all open libraries When ticked all open libraries will be included in the search (including the current search results)
Search listed libraries When ticked any libraries included in the list will be searched whether open or not. Clicking on the **...** button opens a browser to locate Library files to add to the list.
Search all libraries in listed folders When ticked any libraries in the folders included in the list will be searched whether open or not. (Including sub-folders.Clicking on the **...** button opens a browser to locate Folders to add to the list.

Media Folders Tab

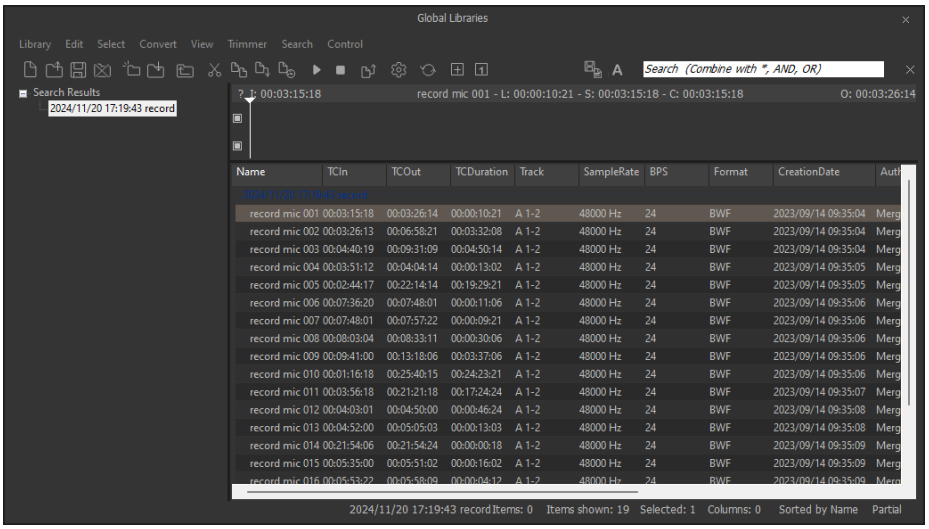


Search Media dialog - Media Folders Tab

Search all mounted media folders When ticked all mounted media folders will be included in the search.
Search listed folders When ticked any folders included in the list will be searched whether mounted or not. (This includes all Sub-Folders. Clicking on the **...** button opens a browser to locate folders to add to the list. If a folder is added which does not have a Quickmount library one will be created when the search is run.

Search Results

Search Results are added to the Global Library in a folder labelled with the date and time of the search and the search term(s). The focus is set to the latest search result.



Global Libraries Tab - Search Results

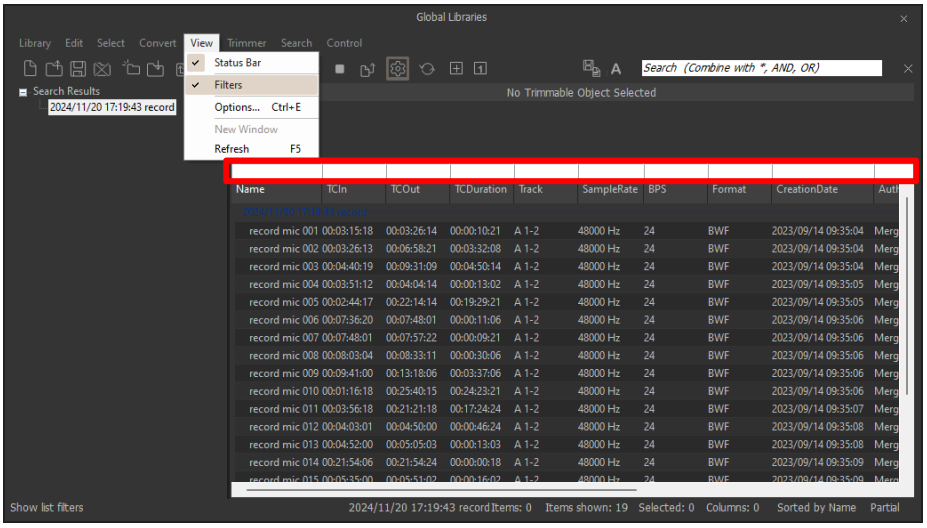
Any operation which can be performed on a library entry can be performed on a search result. E.g. **Drag and Drop.** Any item or items in a results folder can be dragged and dropped to another Library or to the Timeline.

Deleting Search Results

If the Search Results library is open the individual results are displayed in the right-hand pane and can be deleted. To delete the entire search click on the **Search Results** in the left-hand pane. All current search results libraries will appear in the right-hand pane and may be deleted.

Search Filters

All Library views and the Media Manager view have a **Filters** option. Filters are accessed via **View > Filters** in the Library or Media Manager **View** menu or by clicking on the:



Media Management Tab with Filters

In the screenshot above the Filter text entry boxes and Filters icon are highlighted in red.

- The specific Columns available for filtering are set in Options. Please see: Media Management and Library Tab Columns on page 58

- Filters are not case-sensitive.
- Filters always behave as if there is a wild card at either end of the filter term. I.e. ***text***.
- Multiple filters are allowed. So, for example, you could search on ***trains*** in the **Name** column and ***A 1-6*** in the **Track** column. This would filter the view to show only results containing *train* with six audio tracks.
- Filters are NOT recursive I.e. don't filter sub-folders.

Media Management

The Media Menu

This menu gathers together significant Media related commands for the current Project.

Search Media Opens the Search Media dialog

Mount Referenced Media Mounts all media not already mounted and used in the current Project
Auto-Mount Media When selected, whenever a reference from an Offline library is placed in the current Project, the Media will automatically be mounted.

Select Online Clips Selects all Clips in the Timeline whose Media files are currently mounted
Select Offline Clips Selects all Clips in the Timeline whose Media files are not currently mounted

Select Used Media Opens a floating Library View window listing all Media files used by the current Project.
Select Media present on Project Default Folder Opens a floating Library View window with all Media present in the Project Default folder selected (highlighted)
Select Media NOT present on Project Default Folder Opens a floating Library View window with all Media NOT present in the Project Default folder selected (highlighted)

Collect Media to current Project Default Folder Copies all media files used in the current project (as shown when the previous **Select Media not present …** is invoked to the current Project Default Folder. This function is especially useful if moving a machine or disk to another studio or where network resources may not be available.

Clean-Up Media Opens the **Choose a Media Folder to Clean-Up** window. Choose the Media Folder you wish to clean-up and click **OK**. All media not referenced by the current Project will be permanently removed from the selected folder.

Media Management and Library Tab Windows

Media Management and Library Tab Columns

The Columns displayed in Libraries and the Media management window are determined by the **Columns** dialog accessed from **View > Options**

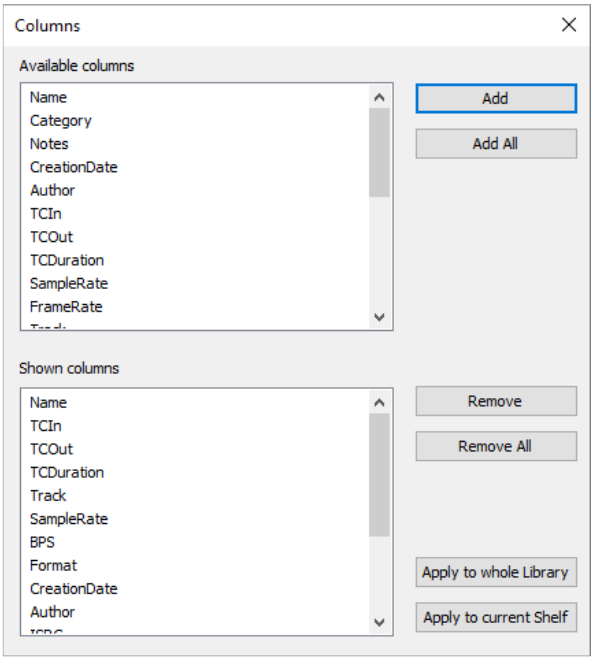
Rearranging Columns

Columns present in Library, Media Management and Search Results frames can be rearranged by simply clicking and dragging the column headers.

Reordering Columns

Clicking on a column header does two things on Columns where this is appropriate. It orders all Library entries according to the numerical or alphabetical order of that Column and it toggles that order between Ascending and Descending.

Options Opens the **Columns** dialog box:



Libraries View Menu Options - Columns pane

The dialog box shows two lists, **Available Columns** and **Shown Columns**.

Available Columns buttons:

Add **Adds** the column(s) selected to the **Shown columns** list
Add All Adds All the available columns to the Shown Columns list

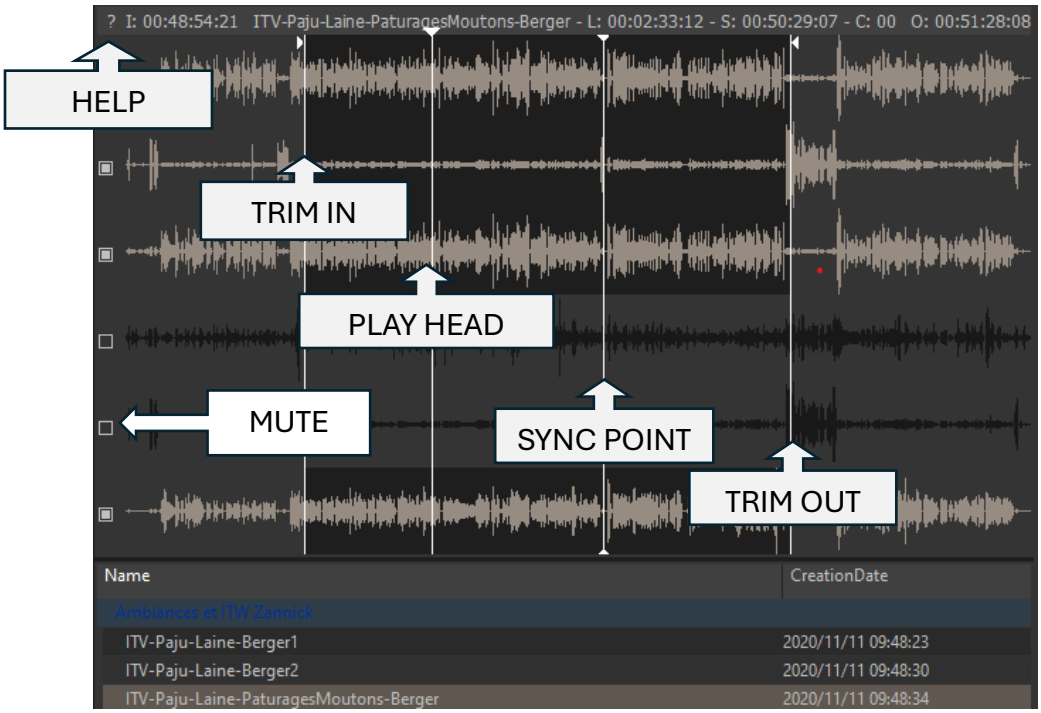
Shown Columns buttons:

Remove **Removes** the column(s) selected from the **Shown columns** list
Remove All Removes all column from the Shown columns list
Apply to whole Library **Applies** the changes made in this dialog to all Folders in the current **Library**
Apply to current Shelf **Applies** the changes made in this dialog to all Folders in the current **Shelf**
Columns
Name Clip or Media File name
Category E.g. Master Clip, Media Folder etc.
Notes Where specified

CreationDate	Date Media File (Clip) created
Author	Where specified
TCIn	Clip or Media File **In** TimeCode
TCOut	Clip or media File **Out** TimeCode
TCDuration	TimeCode Length of Clip or Media File
SampleRate	Sample rate of Clip or Media File
FrameRate (Media Only)	Where specified
Track	Shows the Tracks the Media File or Clip occupies
BPS	Beats Per Second
Format	File format e.g. **PMF**, **WAV** etc.
AutomatedObject	
MixerSnapshot	
FileName (Media Only)	Media File Name
MediaSize (Media Only)	In bytes
Scene	Where specified
Take	Where specified
Tape	Where specified
UBITS	
ISRC	

The Trimmer

All Library and Media Management Windows have a **Composition/Media Trimmer**:



The **Trimmer** can be shown/hidden with the menu item **Trimmer > Show**.
An object highlighted (selected) in the list view of the Media Manager is automatically opened in the trimmer.
Multi-channel objects may be auditioned and trimmed, by default, they are visually collapsed, by reaching the **Trimmer** menu unticking **Trimmer > Show > Don't show too large Media/Compositions** will allow you to see all the tracks.
A small square to the left of each Track displayed allows Tracks to be de-selected/selected for playback in the Trimmer. The Trimmer output is stereo for 2 channel media.
For Media with more than two channels the routing is assumed to be stereo. If the Media contains Channel Type metadata (PMF, BWF, Wave, MP3...NOT AIFF) the monitoring will automatically route the mapping to the associated monitoring patch.
Clicking on the **?** at top-left opens the **Media Trimmer Commands** list:

```
Media Trimmer Commands
Click in Tracks:
  None: Drag Selection
  Shift: Set In Point
  Ctrl:  Set Out Point
  Shift + Ctrl: Set Sync Point
  + Alt to the above to Audition from the Point

Click in Track Header:
  None: Select/Unselect Track
  Shift: Unselect All Tracks
  Ctrl:  Select All Tracks

Double Click in Tracks:
  None: Audition from clicked point
  Ctrl: Reset In/Out/Sync Points

Drag and Drop:
  Drag from the List: Whole Media
  Drag from the Trimmer: Follows In/Out Points

Shortcuts:
  SPACE: Toggle Audition/Stop
  ENTER: Audition Trimmer Selection
  ESC or Numpad 0: Stop Audition
  Ctrl + 1: Show 1 Track
  Ctrl + D: Show Track Details
```

Media, Clips or Compositions can be trimmed in the following ways:

- **Double-click**: Plays the object through the Monitoring Section from the point where you double-click.

Note: Trimmer sound output is via the **Monitor Panel**. If no sound is heard through the current **L** & **R** Monitor Outputs you may need to assign values to the **None** entry in the **Main Grid and Downmixes** section of the **Monitor** Please see: **Media Manager and Library Monitoring on** page xxx

- **Click & Drag**: Drag the object to the timeline or to an other library properly trimmed (from the In point to the Out point. Dragging it from the list view takes it untrimmed).
- **Shift + Click**: Sets the **Trim In** point. The point can be modified later by simply clicking on it.
- **Control + Click**: Sets the **Trim Out** point. The point can be modified later by simply clicking on it.
- **Control + Shift + Click**: Sets a **Sync Point**. The point can be modified later by simply clicking on it.
- **Shift + Alt + Click**: Sets the **Trim In** point and plays from it.
- **Control + Alt + Click**: Sets the **Trim Out** point and plays from it.
- Control + Shift + Alt + Click: Sets the Sync Point and plays from it.
- Control + Double-Click: Resets the Trim In and Trim Out and Sync Points.

Trim In, Trim Out and Sync Points

The **Trim In**, **Trim Out** and **Sync** Points are permanently preserved for Compositions and MasterClips stored in a Library (Project or Global), but only until the next Mount or Refresh for mounted Media in the Media Management Window.

Compatibility

Because the Media Trimmer allows Trim In, Trim Out and Sync Points to be set and saved in current libraries, menu options: **Library > Save Library as 7.0** allow Libraries to be saved in a format compatible with previous versions for maximum compatibility.

Media Management Tab Window

The **Media Management** Tab Window is very similar in appearance and operation to the **Document** and **Global** Library Tab Windows. However, the Menus and Toolbars differ a little, reflecting their different capabilities.

Media Manager History

By default the Media Manager database and its history is retained when Pyramix is shut down and relaunched.

(Settings > All Settings > Application > General : Keep Media Manager History

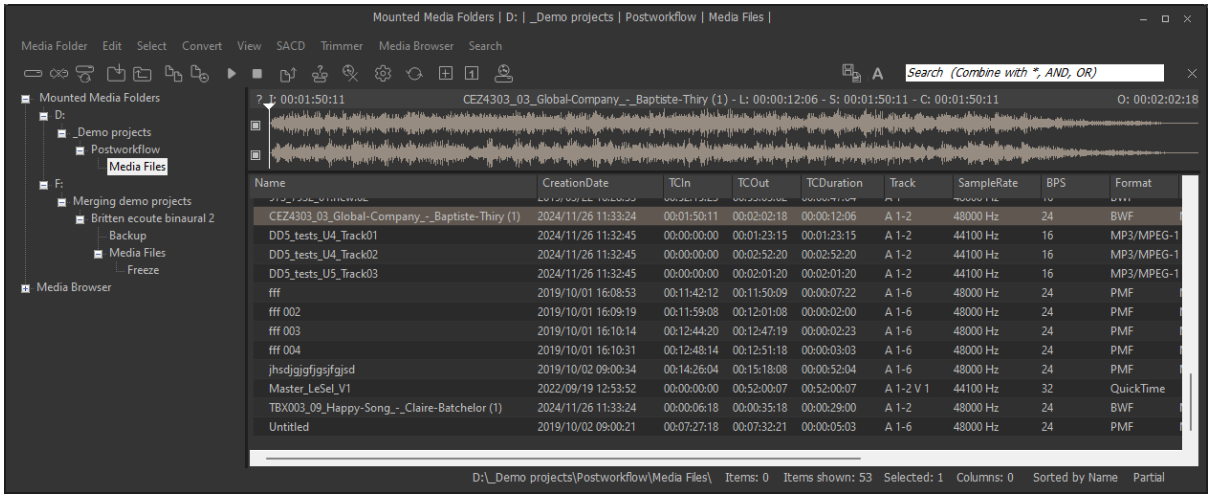
If this option is unchecked, it forces a history reset. (The Media_Library_.pml file is recreated from scratch on the next Pyramix launch.)

This option is useful when several people are working on different projects with the same database (same login). This can make the history database grow VERY fast.

Note: If disabled the Media_Library_.pml file will remain small but the mounting time will most probably be slower.

Media Browser

The **Media** window (previously Media Manager) can operate on Mounted Media Folders and act as a **Media Browser** for any local or network storage locations.



Media Management Tab floating Window

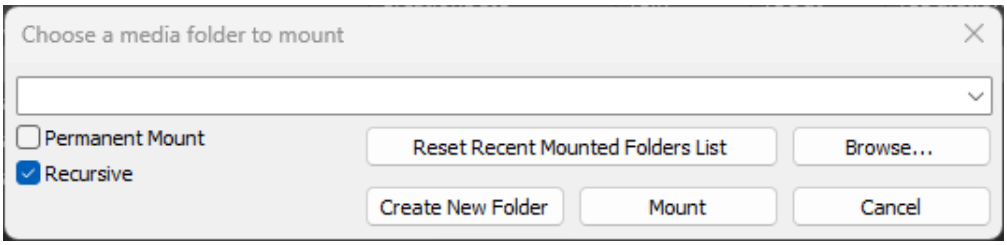
Below all **Mounted Media Folders** an "Explorer like" **Media Browser** Tree allows Media Folders to be browsed without Mounting them formally.
When displayed in the Media Browser all recognized Media are mounted temporarily and can be auditioned and placed in the Timeline.

Note : One can also directly drag and drop a media into the timeline, and the folder in which this specific Media is located will automatically become a **Mounted Media Folder**

Media Management Tab Menus

Media Folder Menu

Mount Media Folder Opens the **Choose a media folder to mount** dialog:



Choose a media folder to mount dialog

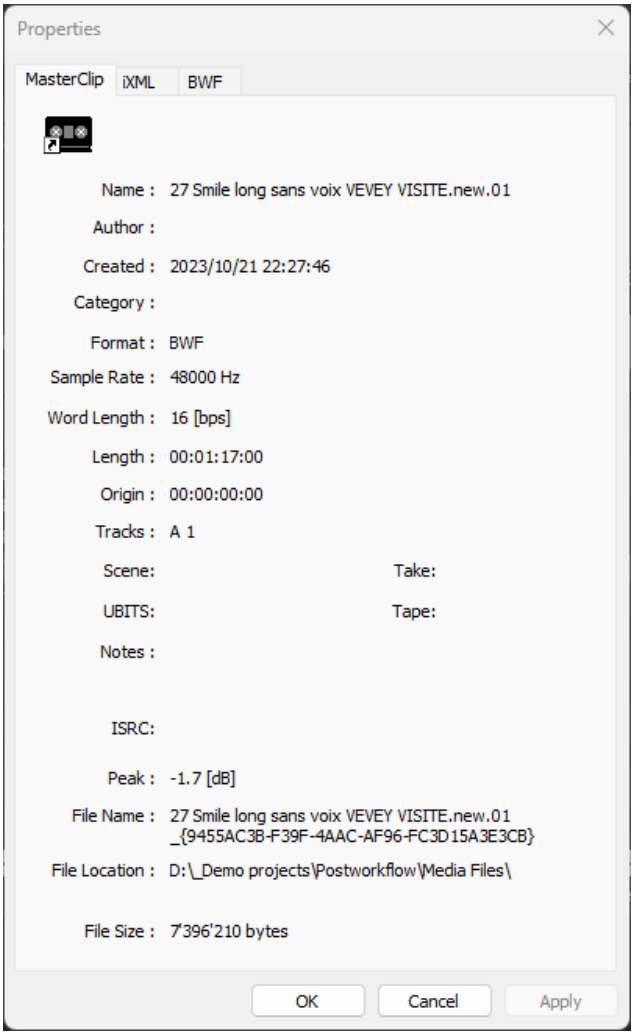
Mounting a folder makes it visible to the Pyramix media filing system.
Field with drop-down list Clicking the down arrow reveals a list of folders mounted recently. You can select a folder from the list and click on **Mount** to mount it.
Permanent Mount Any folder Mounted with this box ticked will be mounted when Pyramix is launched subsequently.
Recursive When the box is ticked all sub-folders under the folder selected will also be mounted.
Reset Recent Mounted Folders List Clicking the button resets the list of folders mounted recently. I.e. the list accessed from the drop-down. This only takes effect when the dialog is closed.
Browse... Opens a browser window to locate a folder to mount.
Create New Folder Opens a **Save As** browser window. Navigate to the location where you wish to create a new folder, type a suitable name and click on **Save** to create the new folder which then appears in the field in the **Choose a media folder to mount** dialog.
Mount Mounts the folder shown in the field and closes the dialog.
Cancel Closes the dialog without mounting a folder.

Unmounts Media Folder **Unmounts** the selected **Media folder** (an **Are you sure** dialog protects from inadvertent unmounting.) Makes the selected folder invisible to the Pyramix filing system.
Refresh Media Folder Invoking **Refresh Media Folder** initiates a complete ground up re-mount of the selected folder. This may solve inconsistency issues. **F5** will also refresh the selected folder.
Clear Media Manager History Choose this option to reduce Database size and improver performance.

Create Offline/Reference Library Please see: Using Offline/Reference Libraries on page 93
Create Quick Mount Libraries
Create Quick Mount Library Use this option to create _QuickMount.pml libraries recursively for a whole disk or folder, (typically overnight on a big new media disk) so that rapid browsing will be available the next time the disk is browsed.

Open Folder Opens the Media Management Library for the selected drive and directory. Double clicking on the name of the Media directory has the same effect
Up One Level Moves up one level in the file hierarchy

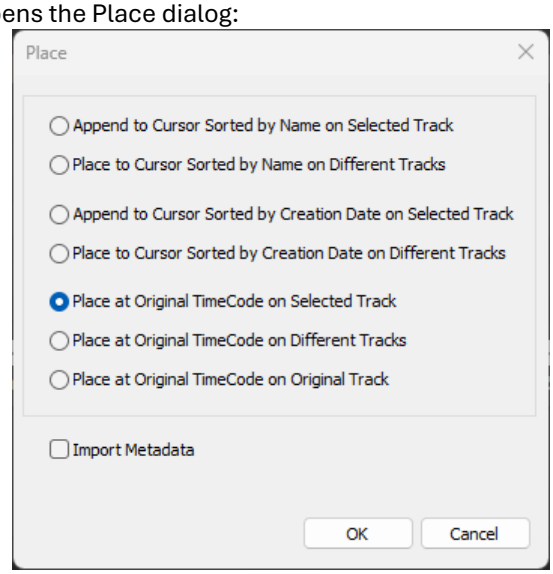
Mounting Rules Opens the **Mounting Rules** dialog only when a file or files are selected. This allows the user to apply special rules when attempting to mount files that contain the same 'unique' identifier.
Please see: Mounting Rules on page 94
Properties Opens the Properties window for the selected Media Folder or MasterClip:



Edit Menu

Copy Copy object.
Paste with Media Pastes object complete with associated Media files to wherever the target object is stored.
Rename Rename object
Lock Rename When ticked **Locks** all objects for **Renaming** (in Media Manager and Libraries). Do you really want your SFX Library entries to be renamed by anyone who can access it?

Open/Audition Opens highlighted (selected) Clip or Composition in the Trimmer and begins audition play. Opens highlighted (selected) Shelf
Audition Opens highlighted (selected) master Clip in the trimmer and begins audition play.
Stop Audition Stop audition Play and return Cursor to beginning Place (Ctrl + P)
Opens the Place dialog:



Media Management Edit menu Place dialog

The selected object(s) will be placed in the Timeline according to the rule chosen here.

The selected object will be placed in the timeline on the selected Track and Playhead Cursor position at its **Sync Point** or, if no Sync Point has been set, at its **In Point**.
Import Metadata when checked, Metadata in a BWF file will be imported into the **Metadata** Tab window when you click on **OK** as well as the chosen **Place** action.

Locate Selects the first instance of the current object in the Timeline and positions the Playhead Cursor at the start of it.
Show Usage Selects all instances of the current object in the Timeline and zooms to make them all visible.
Replace Selected Clips Replaces the Timeline selected clip(s) with the Media Manager one.
Reveal in File Explorer Opens the folder where the selected clip resides in Windows Explorer.

Delete Media **USE WITH CARE!** Deletes the selected media(s) a pop-up will ask you to confirm this function as there is **NO UNDO !**

Collect Selected Media to current Project Media Folder The Project Media Folder is set in **Settings>General Settings>Genera** Project Media Folder, once the function selected it will analyse the time line and add all the medias (without consolidation) into the specified folder that are not already available in the Media Project Folder.

Select Menu

Select All Selects all objects in the right-hand pane (**Ctrl + Click** toggles selection of individual objects)

Invert Selection Selected objects are de-selected, unselected objects are selected.

Select Media Present on current Project Media Folder Selects any Media file(s) shown in the right-hand pane that are present on the current Project Media Folder.

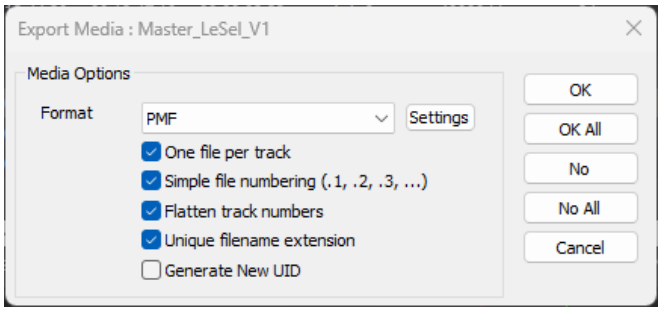
Select Media NOT present on current Project Media Folder Selects any Media file(s) shown in the right-hand pane that are not present on the current Project Media Folder.

Convert Menu

Quick Import Enables sound files in any supported format to be imported into a Pyramix Media Drive or Folder in either their original format or converted to the Pyramix native PMF format.

Note: Files in supported formats do not need to be converted to be used in Pyramix, a big timesaver.

Quick Export Enables Pyramix Master Clips to be exported in any of the supported file formats with a number of options. When **Quick Export** is chosen a File Browser window opens to enable the target folder to be chosen. When you click **OK** in the Browser the **Export Media** dialog opens with options:



Quick Export - Export Media: Dialog

One file per track When checked, multi-channel Master Clips are exported with a single file for each channel in the Clip.

Simple file numbering (.1, .2, .3, ...) When checked resultant files are numbered (.1, .2, .3, ... instead of_##001##_, _##002##_, ...)

Flatten track numbers When checked, Tracks are numbered 1, 2, 3, 4 instead of, for example 1, 2, 7, 8

Unique filename extension When checked, adds a unique filename extension.

Export Masterclips This is similar to Quick Export (above) but is also available in Libraries. It enables selected **Shelves** and **Media Folders** to be exported. Their complete/recursive folder structure is exported. Only **Masterclips**/**Media** are exported. **Compositions** or any other objects in Libraries are not exported.

Quick Convert > Enables one or more Media files to be converted in a variety of ways. (Please see: **Convert - Quick Convert sub-menu on page 70**)

Sample Rate Conversion Please see: Samplerate Conversion on page

---

Reverse Reverses the selection so it plays backwards

Export XML Description Exports Media Descriptions as an XML file Select a range of media and select **Convert >Export XML Description.**

Export to MTInterchange XML Export the select medias content as XML metadata

---

Publish to Open External Database Please see: Archiving Metadata on page 458

View Menu

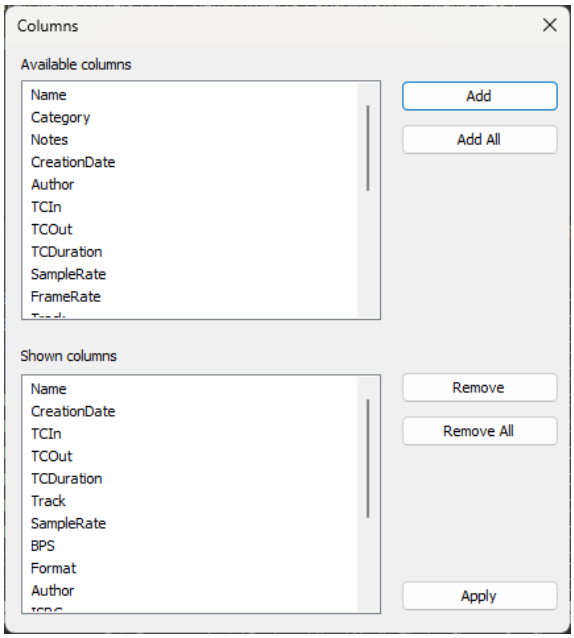
The **View** menu determines how information is displayed.

Status Bar Turns the Status bar on and off

Large	Show large Icons
Small	Show small Icons
List	Show as list
Detail	Show as list with details

Filters	Adds **Filter** term entry boxes above each column in the view

Options	Opens **the Columns** dialog box:



Libraries View Menu Options - Columns pane

The dialog box shows two lists, **Available Columns** and **Shown Columns.**

Available Columns buttons:

Add **Adds** the column(s) selected to the **Shown columns** list

Add All **Adds All** the available columns to the **Shown Columns** list

Shown Columns buttons:

Remove **Removes** the column(s) selected from the **Shown columns** list

Remove All Removes all column from the Shown columns list

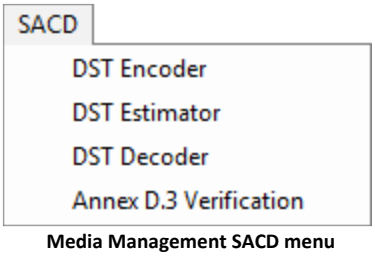
Apply to Folder **Applies** the changes made in this dialog to the current **Folder**

Apply to library **Applies** the changes made in this dialog to all Folders in the current **Library**

Set as Default **Sets** the changes made in this dialog as the default column content for all Folders in all Libraries.

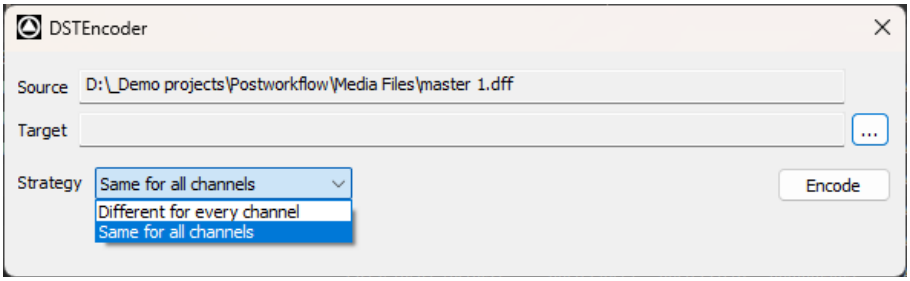
New Window	Opens another instance of the Media Management Tab Window
Refresh	Forces a refresh

SACD Menu



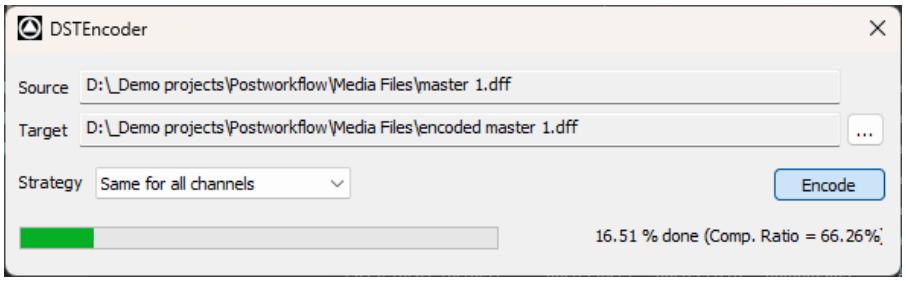
Media Management SACD menu

DST Encoder	Encode an Edited Master in DST



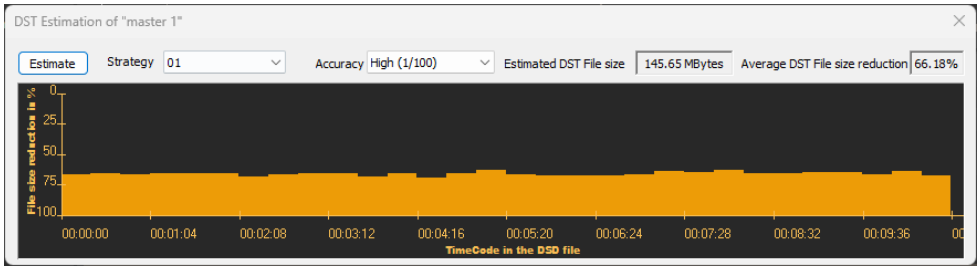
DST Encoder dialog

Source Shows the full path of the selected file.
Target The ... button opens a browser window to set the destination file path and enter a name for the file.
Strategy The drop-down offers the choice of Different for every channel or Same for all channels.
Encode Initiates the encoding.



DST Encoder in operation

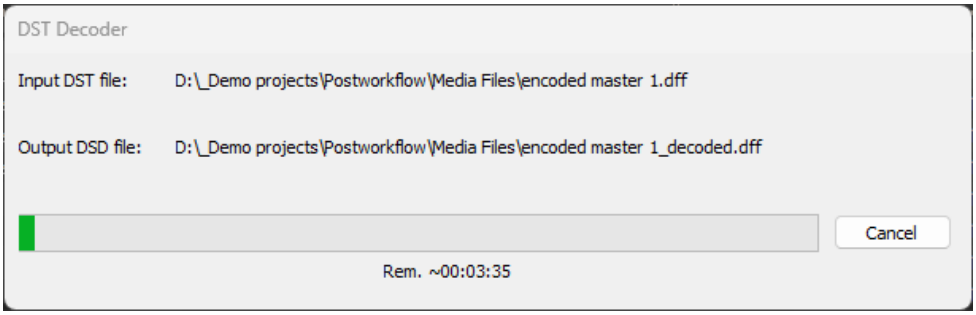
DST Estimator Estimate the DST encoding of an Edited Master with a graph to show the file reduction rate as a function of the audio material.



DST Estimator

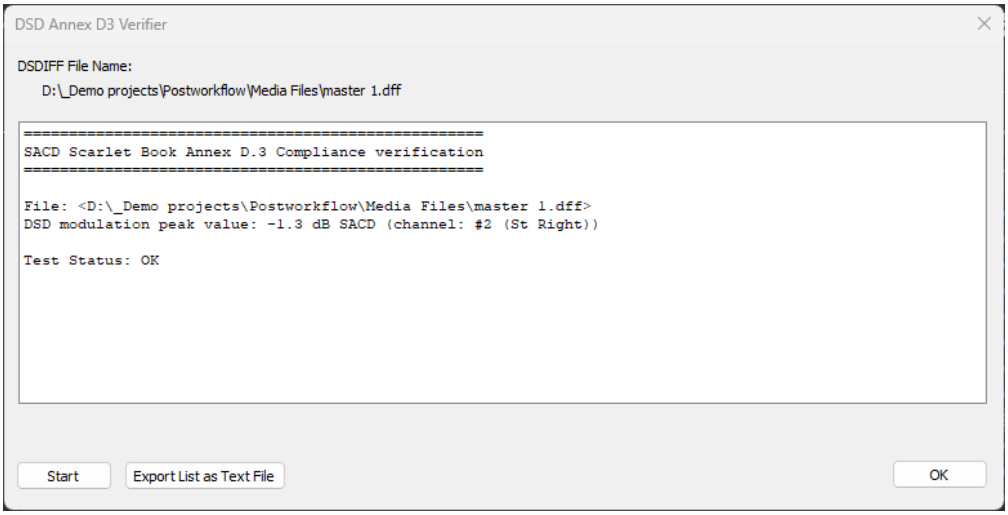
Estimate Initiates the estimation process on the selected file.
Strategy The drop-down offers the choice of **00** or **01**.
Accuracy The drop-down offers the choice of **High (1/5)** or **Very High (1/100)**.
Estimated DST File Size Shows the estimated file size dynamically as the estimation progresses and the total when it is complete.
Average DST File size reduction Shows the average percentage reduction in file size dynamically as the encode progresses and the average when it is complete.

DST Decoder Decodes a DSDIFF file. Selecting this option opens a browser window to select the file to be decoded. Clicking on **Open**. initiates the decode. When the decode is completed the dialog closes Clicking on **Cancel** aborts the decode.



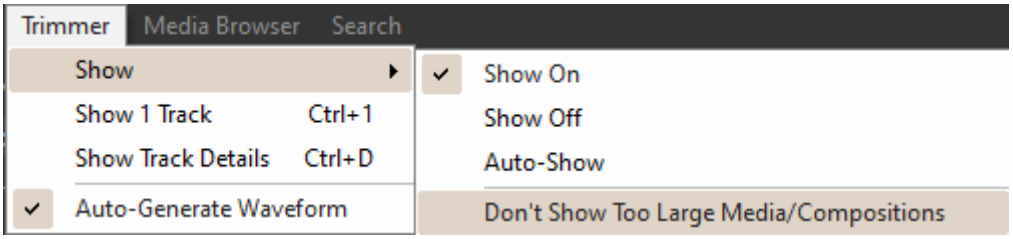
DST Decoder in operation

Annex D.3 Verification Verify the selected file.



Start Initiates the verification process.
Export List as Text File Opens a browser window where the file path is set and the file named.
OK Closes the verifier window.

Trimmer Menu



Media Manager Trimmer Menu

Show
Show On When ticked the Trimmer is visible
Show Off When ticked the Trimmer is hidden
Auto-Show When ticked the Trimmer is only shown when a Media file is selected

---

Don't Show too Large Media/Compositions When ticked Mulritrack and Large Media files and Compositions will not be opened in the Trimmer.
Note: When this option is selected Media or Compositions with more than 16 Tracks or more than 100 Clips will not be shown in the Trimmer. Selecting this option avoids the loading time associated with Compositions containing a large number of Clips.

Show 1 Track Show only the first Track of the object displayed in the **Trimmer**. When this option is selected **Up** and **down** arrows appear at the left of the Trimmer Track display which enable any Track to be displayed.

Show Track Details The following information is displayed for each Track of the selected Media file:

- Track Name
- Track Number
- Track Type (left, Right, Center etc.)
- Track File Name (If the Media is recorded in **One File Per Track** mode)

Auto-Generate Waveform Waveforms are automatically created for objects without them.

Media Browser Menu

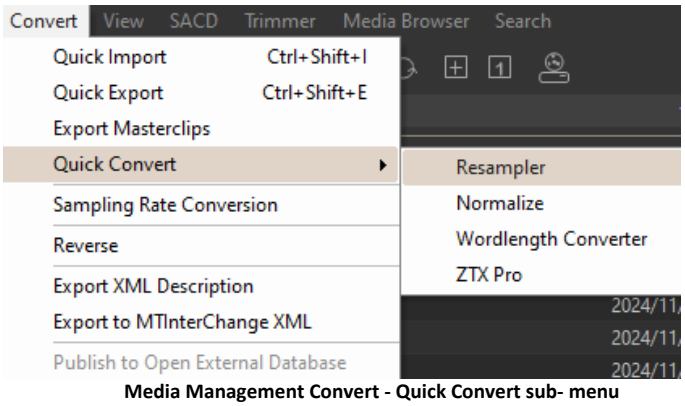
Mount Currently Displayed Media Folder allows easy mounting of the Media Folder currently displayed in the Media Browser. Typically when the correct folder is located).

Search Menu

Search All Mounted Media Folders Toggles between Global and Local search. When Active, all Mounted Folders are searched. When Inactive only the current Folder is searched.

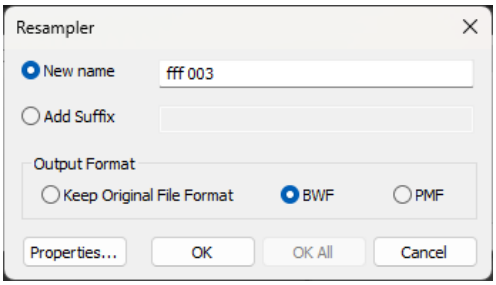
Add to Search Results Creates a new Search Results folder named by date and time and the search term(s).

Convert - Quick Convert sub-menu



Media Management Convert - Quick Convert sub- menu

Output Dialog

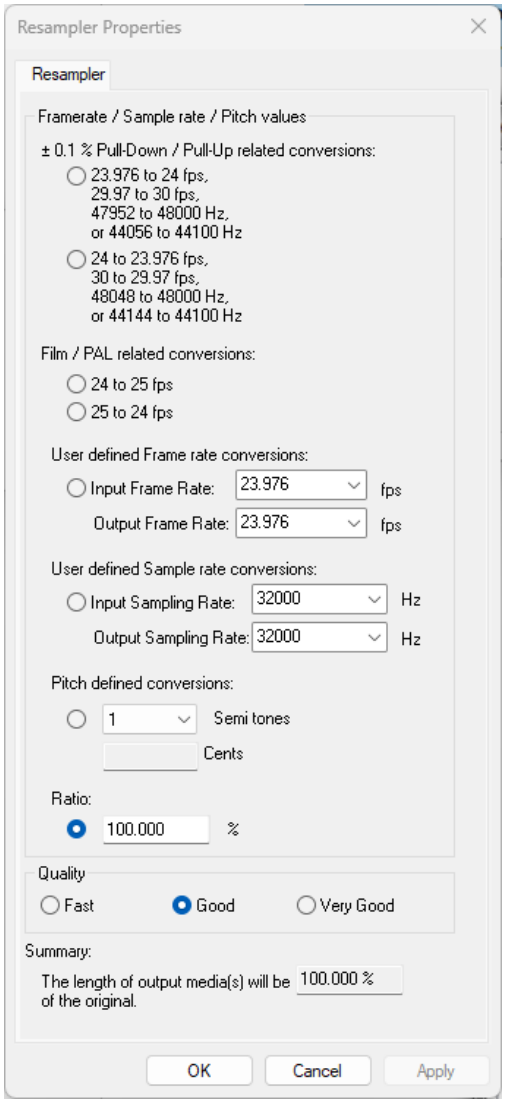


Resampler Converter dialog

All these options produce new media files on disk. Whichever conversion option is chosen, this dialog box will pop-up with a title reflecting the selected process. Either a new name may be chosen or the existing one kept with a new suffix. If you wish to process multiple files in one operation the **Add Suffix** button must be selected. When multiple files are selected and when this option is chosen the **OK All** button is available. The **Keep Original File Format** check box does what it says. The **Properties...** button opens a dialog box specific to each conversion type.
(See below)

Quick Convert - Process Properties Dialogs

Resampler Properties



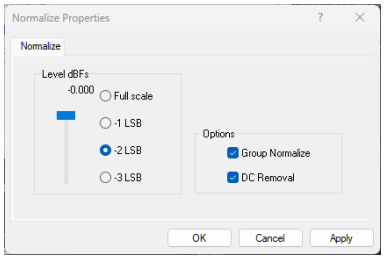
Resampler Properties dialog

This module is initially aimed at performing ±0.1 % pull-up / pull- down audio conversions, but there are several possible ways of defining the ratio between the destination length and the final length (frame rates, sample rates, pitch and ratio in percent).

The process differs from a **Time Stretch** operation since the pitch is modified. The Input and Output files have the same sampling rate but the length of the output files will be: (initial length) x (displayed ratio).

Another setting, **Quality**, has an effect on the resolution of the oversampling process of the treatment.

Normalize Properties



Normalize Properties dialog

Level dBfs

Here you can select from four preset values, or use the slider to specify the maximum level for the new file.

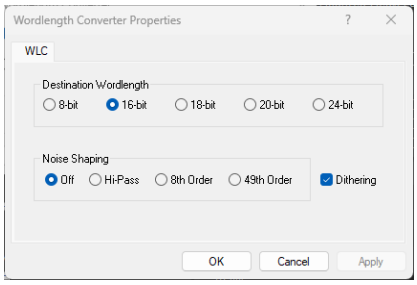
Group Normalize

When checked, the level of the highest peak in any group of Clips is raised to maximum and level of the other Clips is increase proportionally.

DC Removal

When checked, D.C. offsets will be removed.

Wordlength Converter Properties



Wordlength Converter Properties dialog

Destination Wordlength

Select the desired wordlength using the radio buttons.

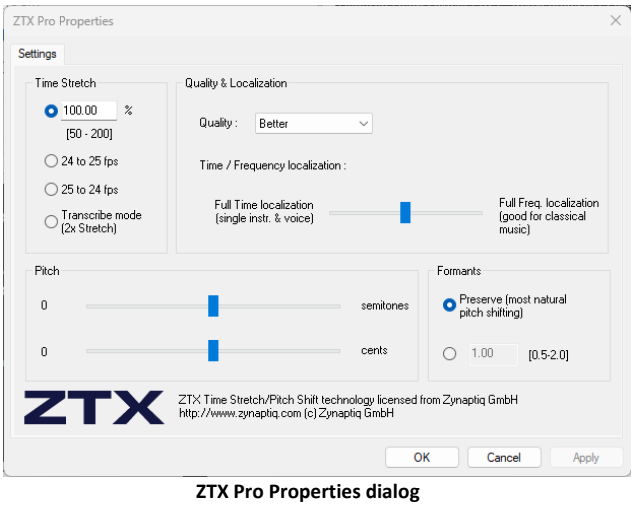
Noise Shaping

Select the required quality of Noise Shaping.

Hi-Pass	is single order shaping with
8th Order	and
49th Order	offering improved quality. A higher quality setting will produce better results, but the processing time will also increase.
Dithering	When checked, If dithering is required, dithering will be applied.

ZTX Pro

Optional high quality pitch-shift and time-stretch renderer from Zynaptiq.



ZTX Pro Properties dialog

ZTX Pro Dialog

New Name	Toggles with **Add Suffix**. The field is populated with the existing name of the file selected in Media Manager. The name may be changed by typing in the field.
Add Suffix	Type in the field to add a suffix.
Output Fomat	Three options - **Keep Original File Format, BWF or PMF.**
Properties...	Opens the **ZTX Pro Properties** dialog.

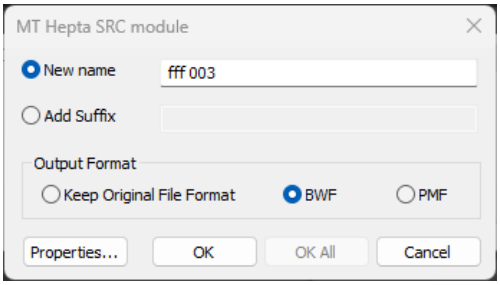
Settings
Time Stretch
Four options are available:

% (percentage)	Type in the field to enter a percentage value between 50 and 200.
24 to 25fps	As it says.
25 to 24fps	As it says.
Transcribe mode (2x Stretch)	As it says.

Quality & Localization
Three quality modes are available in the drop-down list: **Good, Better, Best.**

Time/Frequency localization:
The slider can be set to one of five positions from far left to far right:
1. Far left. Selects full time localization. Good setting for single instruments and voice.
2. Time/frequency localization with emphasis on time localization. If setting **1.** produces echoes this give better results.
3. Middle. This sets the time/frequency localization halfway between time and frequency domains. It is the best setting for all general purpose signals and should be set as default for non-preview processing.
4. Higher frequency localization and less time localization. May be a better choice for classical music than the lower Time/Freq localization settings.
5. far right. Highest frequency localization. This may not be an ideal choice if you're dealing with signals with very fast attack transients.

Pitch
The sliders enable values of **-12** to **+12** semitones and **-50** to **+50** cents to be set.
Formants
Choice of **Preserve,** which results in the most natural pitch shifting or manual with values of **0.5 - 2.0** available.
Samplerate Conversion
Where the sampling rate of a Media File is different to the current Project, Pyramix offers a simple means of converting the Media File's sample rate at very high quality. Using the Merging Technologies HeptaCon Sample Rate Converter:

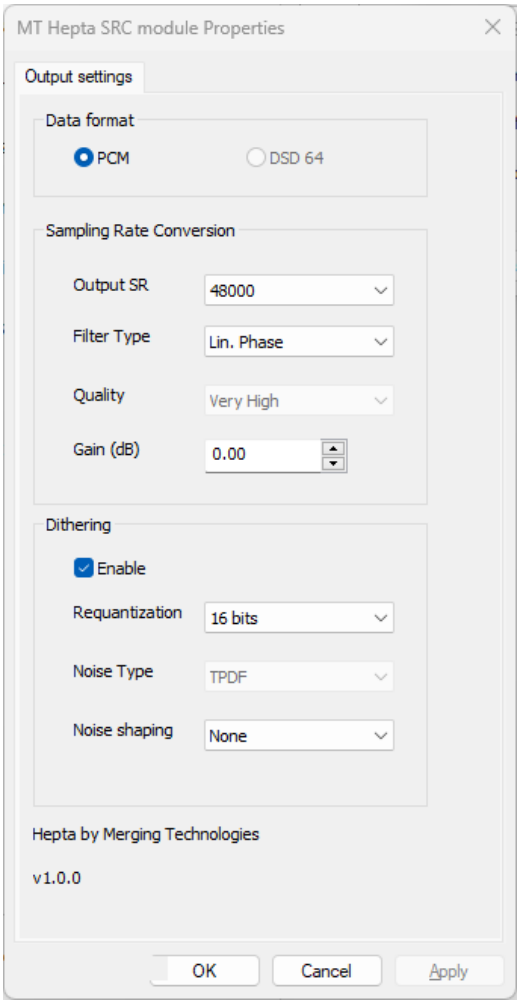


MT Hepta SRC module dialog

Radio buttons offer the choice of two text entry fields, **New name** for the file or **Add Suffix** to the existing filename. A check box selects **Keep Original File Format** otherwise the file will be converted to **PMF or BWF** format as well as sample rate converted.

Note : to converter multiple files without changing the naming, you may select **Add Suffix** and leave it blank.

Properties...
Selecting Properties... opens the HeptaCon SRC module Properties dialog:



MT Hepta SRC module Properties dialog

Data Format

The radio buttons offer the choice of **PCM** or **DSD 64**. (The latter is only available for DSD to DXD conversion.)

Sampling Rate Conversion

Output SR Select the **Output Sampling Rate** from the drop down list.

Filter Type Offers the choice of Lin. Phase, Min Phase or Apodising.

- **Linear Phase** features constant group delay, thanks to the linear phase, and has a symmetric impulse response, but also longer rings. This offers the best preservation of stereo image. There will be a minimum of phase distortion from the anti-aliasing filter.
- **Minimum Phase** features an asymmetric impulse response with minimum phase response. This gives the lowest amount of phase variation along the frequency spectrum and allows slightly better results for transient sounds.
- **Apodizing** offers the steepest response around the Nyquist point and linear phase. It offers the best of both worlds for the about the same computational effort as the 2 other designs. There is a steep transition band in the LPF filter using an almost linear phase. Arguably this is the best compromise between linear and minimum phase types.

Quality Conversion Quality defaults to Very High.

Gain (dB) Use the increment/decrement buttons or type a value for any required Gain offset. (E.g. when converting from DSD where the DSD recording has taken advantage of the 3.1dB SACD maximum level allowed by SACD Audio signal properties Annex D3 you should reduce the gain by typing a minus value (e.g. -3.10dB) to avoid clipping in the PCM output product.)

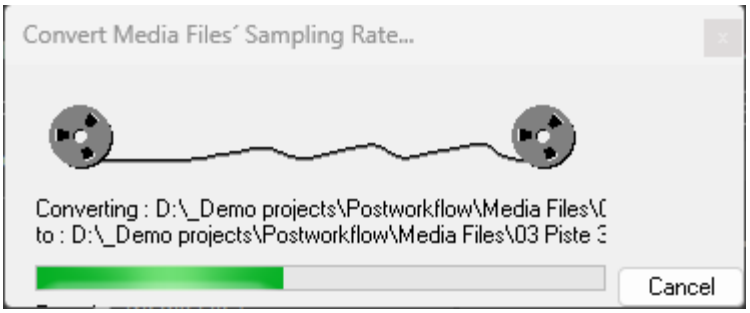
Note: In a DSD to PCM conversion the gain is applied on the filter's pre-computed lookup table (64 bit floating point domain) so avoiding any clipping if dealing with levels above 0dB (SACD).
In PCM to PCM conversions gain adjustment is applied after the SRC stage and before the dithering stage.

Dithering

Enable	When ticked **Dithering** is enabled.
Requantization	The drop-down list offers a wide choice of output bit-depths.
Noise Type	Default is TPDF
Noise Shaping	Choice of High Pass (POW-r2) or Equal Loudness (POW-r 3)

OK
Accepts the settings and closes the dialog.
Cancel
Cancels any changes made and closes the dialog.
Apply
For future developments

Choose **OK** in the **MT HeptaCon SRC module** dialog box to begin the conversion. When converting multiple files, choose **OK** to convert the files one at a time with the possibility of changing parameters on each file or, if **Add Suffix** was chosen in **step 2,** you can choose **OK All** to convert all the selected files in one operation.



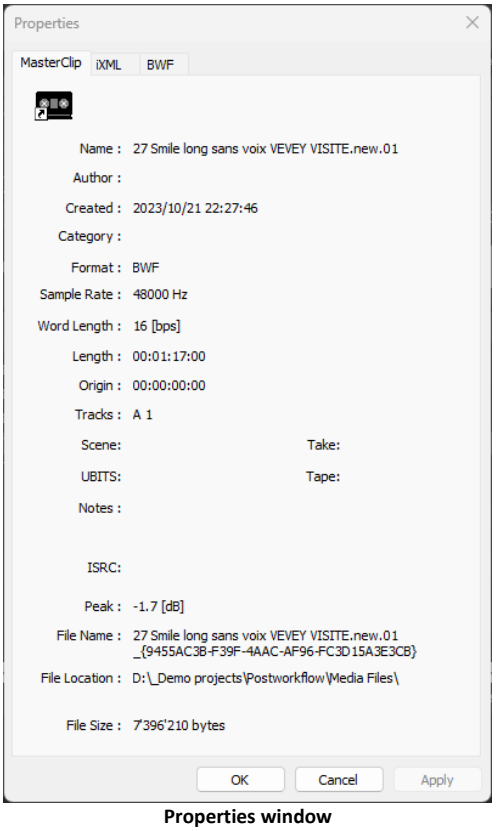
Convert Media Files Sampling Rate... dialog

Media Management Tab Context Menu

Right-clicking on an Audio File entry (or a blank area) in the file list in the Media Management Tab opens a context menu with the following entries:

Show All Drives
Copy
Paste with Media
Audition
Place
Locate
Show Usage
Replace Selected Clips
Reveal in File Explorer
Delete Media
Quick Import
Quick Export
Quick Convert >
Sampling Rate Conversion
DST Encoder
DST Estimator
Annex D.3 Verification
Publish to VCube Timeline
Properties

These functions are the same as those which can be found in the Media Management Tab Menus. **Please see: Media Management Tab Menus on page 53**



Properties window

Media Manager File Format Conversions

Input Formats	Output Formats												
	Generic lossless or lossy PCM format (BWF, PMF, MP3, MTFF-PCM ...)	DSDIFF 2.8 MHz (DSD64)	DSDIFF 5.6 MHz (DSD128)	DSDIFF 11.2 MHz (DSD256)	MTFF-DSD 2.8 MHz (DSD64)	MTFF-DSD 5.6 MHz (DSD128)	MTFF-DSD 11.2 MHz (DSD256)	WSD 2.8 MHz (DSD64)	WSD 5.6 MHz (DSD128)	WSD 11.2 MHz (DSD256)	DSF 2.4 MHz (DSD64)	DSF 5.6 MHz (DSD128)	DSF 11.2 MHz (DSD267)
Generic lossless or lossy PCM format (BWF, PMF, MP3, MTFF-PCM ...)	Yes	Yes (1)	No	No	No	No	No	No	No	No	No	No	No
DSDIFF 2.8 MHz (DSD64)	Yes (2)	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No
DSDIFF 5,6 MHz (DSD128)	Yes (2)	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No
DSDIFF 11.2 MHz (DSD256)	Yes (2)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)
MTFF-DSD 2.8 MHz (DSD64)	Yes (2)	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No
MTFF-DSD 5.6 MHz (DSD128)	Yes (2)	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No
MTFF-DSD 11.2 MHz (DSD256)	Yes (2)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)
WSD 2.8 MHz (DSD64)	Yes (2)	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No
WSD 5.6 MHz (DSD128)	Yes (2)	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No
WSD 11.2 MHz (DSD256)	Yes (2)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)
DSF 2.8 MHz (DSD64)	Yes (2)	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No
DSF 5.6 MHz (DSD128)	Yes (2)	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No
DSF 11.2 MHz (DSD256)	Yes	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)	No	No	Yes (3)

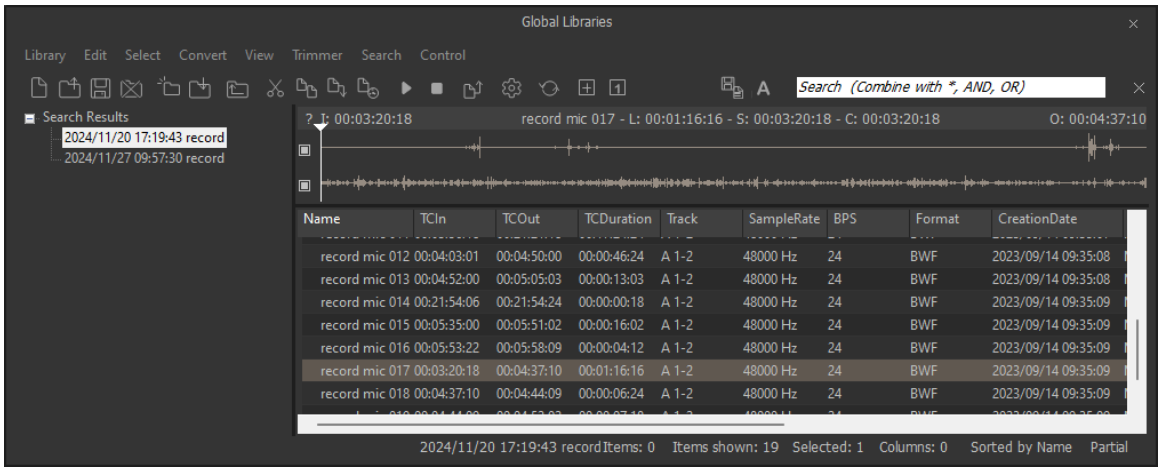
(1) Pyramix Media manager's Quick export requires the input media's sampling rate to be 352.8 kHz
(2) Pyramix Media manager's Quick export requires the output form at to support 352.8 kHz sample rate
(3) No processing filter will be applied, only audio data copy

Libraries and other View Windows

Pyramix uses Libraries to help keep Project organization tidy. **Libraries** are used to organize project material into logical groupings. However, **Libraries** are not the same as Windows directories or folders. They are only meaningful within the Pyramix environment. A **Library** is a database, containing a collection of pointers to different types of media objects with tools designed to enable you to work quickly and intuitively.

Other View windows such as **Search Results**, **Used Media**, **Project Default Media** and **Non-Project Default Media** operate in the same way as Library windows.

Shelves
A library **Shelf** is a sub-folder. You can create many **Shelves** in a Library and **Shelves** can also contain further **Shelves**.



Libraries – Shelves

Project Libraries
Composition Library

We recommend two work flows to achieve the same results as using the Composition Library:

- Toggle the Select Used Media view to list the Media by location, based on Timeline selection. You can search and drag & drop from this window back into the Timeline. You can also save the **Select Used Media** content to a User Library which can be re-opened as a Library.
- Use the **EDL view** since this has been improved and is fully functional and reliable.

Default Library
Each new Project creates an empty **User Library** named **Default Library ('project name.pmx')**. This is provided to aid housekeeping and is kept with the project.

User Project Libraries
Further Project Libraries can be created at will. From the Document Libraries Tab choose **Library > New Library**.

Global Libraries
Project Libraries are kept with the Project, **Global Libraries** are available to all projects and users of the system. Otherwise they are identical functionally. Global Libraries are useful for sound effects or where several users need access to the same source material to produce different end products.

User Libraries
Master Clips can simply be dragged from **Media Folders** to **User Libraries** for purposes of **Clip** organization, grouping, etc. just as they are dragged into **Compositions**

Clips or **Selections** can be copied and pasted into User and Global libraries. Library items can be dragged and dropped onto other Libraries, Shelves or the Timeline or you can use the familiar **Cut, Copy** and **Paste** commands.

Other View Windows

Search Results
Project Default Media
Non-Project Default Media
Used Media
All these views have the same controls and behave like Libraries.

Adding Regions and Compositions to Libraries

User Libraries are not restricted to storing individual **Clips**. Whole **Compositions** or selected **Regions** of **Compositions**, including all the **Clips** in a **Composition** in relation to each other on multiple **Tracks** may be placed in a library. To do this, select one or more **Clips** in a **Composition**, hold down the **Shift-Alt** keys and drag the selection from the **Timeline** to the **Library**, or hold down the **Shift-Alt** keys and drag the whole **Composition** from the **Overview** panel to the **User Library**.Media Folders

User Libraries can contain **Master Clips**, **Compositions**, **Mixer Snapshots, Plug-in Snapshots**, **Fade Settings**, etc.... Each **Project** can have an unlimited number of User Libraries open, each with an unlimited number and mixture of contents.

N.B. In Pyramix **User Libraries**, there is no practical distinction between a **Clip**, a section of a **Composition** (**Region**) and a complete **Composition**. Either can be added to a **User Library** or to an existing **Composition**. This is an extremely powerful feature. Any item copied to a **User Library** from the **Timeline** appears there as a **Composition** automatically labelled **Part of 'composition name'**.

Automation in Libraries
If the menu item **Edit > Automation Editing > Enable Automation Editing** is enabled then any Edit operation **(Cut/Copy/Paste** etc...) brings automation data with it according to the mode set in the same sub-menu. E.g. **Cut/Copy/Delete Displayed Automation**. When active Edit operations will only include Automation Curves visible in
the Timeline. When **Cut/Copy/Delete Whole Strip Automation** is active (Enabled By Default) **ALL** Automation, even the curves not visible currently in Timeline Track(s) will be affected when editing.
Note: Only parameters of controls present in both the source and destination Mixer strips will be copied successfully.

Library Maintenance

If media is moved or the path to it is changed (E.g. by copy, backup or moving folders etc.) Libraries referencing the 'orphaned media can have their paths updated by simply mounting all the media folders involved and selecting **Drive > Update Media Paths** in the **Global Libraries** tab window.
Libraries (apart from the **Default Library** which is embedded in the Project) can be closed from the Library menu, but not deleted. Click on the library you wish to close to highlight it and select **Library > Close Library**. This will remove the library from the Project Library list but it can still be opened, if required, by selecting **Library > Open Library** and navigating to the library you wish to open, clicking on it to highlight it, and clicking on **Open**.

A **Shelf** can be re-named by clicking on it to highlight it in the right-hand pane and selecting **Rename** from either the Library **Edit** menu or the right-click context menu.

A **Shelf** can be deleted by clicking on it to highlight it in the right-hand pane and pressing **Delete**.

Using Global Libraries

Overview
The Pyramix Global Libraries feature is one of the most unique productivity tools imaginable in any DAW and is thus one of the least understood. This section describes the Libraries (Global and Document) and their use. Examples describe workflows which rely on them to speed up an operator's working day in many different ways.

Global Versus Document Libraries

The main difference between Global and Document Libraries is this: Global Libraries are independent files, able to be opened and used without having a reference to a single Pyramix Project while Document Libraries are saved embedded within the Pyramix Project itself and are thus more commonly used with the saving of items associated with a single Timeline.

Note: Documents Libraries from other Projects can be accessed by simply opening the PMX Project containing the required Document Library in the **Global Libraries** Tab.

Global Libraries as Sound Libraries
One of the most time-consuming tasks for any integrated Media Management tool in a DAW is to parse thousands of audio files and search for the exact sound needed. Using the Global Libraries, users are able to do a scan of any media location (even an entire server!) and present this database to Pyramix users to allow for the following:

- Offline reference to an entire set of media files. (Media does not need to be present to be able to search.)
- Ultra-fast searching of terabytes of media using File Name, or any other metadata.
- Search using Boolean (And/Or) search tools.

Global Libraries as Sound Design Libraries
Most effects editors and dubbing mixers are familiar with the concept that a single sound effect is rarely used on it's own to match against a picture element. More often than not, a single sound effect is constructed from a variety of individual elements which, when played together form a composite which aids in the suspension of disbelief.

Once an editor makes such a composite on a Timeline, in order to be able to use it again, they would need to either save the Project, remembering where it exists, or bounce it to a single file for use in other Projects in the future.

The problem with the first solution is that the user would always need to remember which Project and where in the Timeline the effect exists. The problem with the second approach is that, if in the future the editor needs only part of the composite for the subsequent usage, he or she would have to build it again from scratch.

Global Libraries solves this dilemma with the ability to save selections of Clips from the Timeline with the following information, which are then usable in any Project, so long as the media still exists at the same location. These composites can be stored in the same databases as the originating Sound Library, in sub-folders of that Library, or as completely separate Library files.

Saving edits into a Global Library saves:

- Edit information: Trim/Fade/Crossfades/Fade Curves.
- Clip Gain and Clip Envelope.
- Track location (if the sound design was done on a specific set of tracks that are normally reserved for certain types of sounds (ie using a template where Dolby Atmos tracks are 25-32) then this can be recalled when bringing a saved composite back to the Timeline.
- Track-based automation.
- Clip color, naming etc.

This is perfect for use in the following workflows:

- Building a bigger and bigger sound library over time by adding in composites as they are built to be able to enhance future productions with a greater fx toolbox
- Show or production based composites (such as stings for TV programs) where parts of designed sounds need to be used a varying parts of an episode.

Use of Global Libraries for Tracklay Versioning
Understanding that Libraries can hold composite edits from the Timeline as single elements in an easy to search database also means that it is very simply to create versions of a section of the Timeline without having to create Mute Tracks or otherwise disfigure an otherwise pristine Timeline.

If you have a section of a tracklay that you could edit in a number of different ways and want to give the dubbing mixer and/or director options during the mix you can:

- Highlight the initial edit version.
- Color it with a pre-agreed color for "alternate versions available" to be recognized.
- Save it into a Global Library.
- Delete it from the Timeline and complete another fresh edit, coloring it in the same manner once completed.
- Repeat the process as many times as needed.

When it comes to the mix the dubbing mixer can see that there is an alternative version and use the **Place** function in the Library to put into place any of the other versions. The dubbing mixer can even use the **Trimmer** in the Global Libraries tab to audition the edit on its own before placing it on the Timeline.

Creating a Folder Structure Independent of Sound Library Structure

Depending on the editor's personal preferences and the working practices in facilities, sound effects may exist in numerous physical libraries and be in an order that does not make a lot of sense in an everyday workflow. Global Libraries allow for complete reordering and restructuring, with the ability to create a folder structure manually.
This allows for a sound editor to create and refine their tools as time goes by, creating more and more streamlined methods of organizing (and thus finding!) files for use in editing.

Libraries as Sharing Tools for Multiple Pyramix's Working Together

Global Libraries are multi-read files since they do not actually require saving in order to update them on the disk. Thus, it is possible for a user on one Pyramix computer to place information and edits in a Global Library, and if that same Library is open on another, network connected Pyramix, then that editor can simply grab the Library item and place it on their Timeline.

Uses of this Feature:

- A Dialogue editor can send updates to the FX editor(s) without having to save Projects and ask them to open/copy/paste.
- FX editors can make available any additional sounds they are working on for other editors to use as a reference.
- A common library folder can be used a repository for any series based sounds that anyone might need access to.

Saving Mixer Information Away from a Timeline

By using the same method as one would for saving a part of the Timeline to a library, users can also save an entire Mixer's worth of parameters, or that of any individual VS3 plug-in in the Mixer.

Some reasons for saving parameters to a library

- EQ settings for standard use. (Source music from a radio effect for example.)
- Mixer Snapshot for a scene that will be occurring again in the Timeline.
- Aux sends for reverbs.
- Basic levels of individual Tracks.
- Mic Pre amp settings for Horus Mic-Pres.

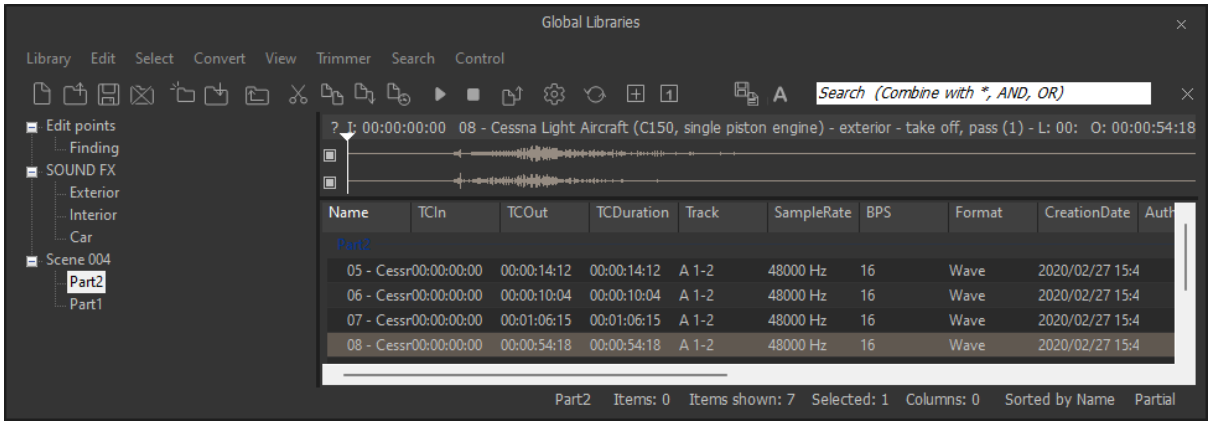
Useful Library Commands

SHIFT+ALT Click and **Drag** to drag Mixers and composite edits into a Library.
Right-click on a composite edit in a Library and choose **Place** and then select: **Original Timecode**, **Original Track** to return a composite edit to its original placing in the Timeline
New Shelf in the **Library** menu in the Global Libraries tab makes new sub folders.

Library Tab Windows

Document and Global Libraries
There is no real difference between Document libraries and Global Libraries. The distinction is an organizational one, made to help keep complex Projects manageable and to provide security features for larger facilities. Libraries designated as **Global** are available to all projects but can be opened and manipulated from the **Document Library** window. Equally, Libraries created in the **Document Libraries** window can be opened in the **Global Libraries** window.

The default Project Library created with every Project is stored with the Project. It can still be opened in the **Global Libraries** window by locating the **.PMX** project file in the Project's **Media Files** sub-folder.



Global Libraries Tab floating Window

The left hand pane shows **Libraries** and **Shelves** associated with the project. The contents of the selected **Library** or **Shelf** is shown in the right-hand pane with information about the objects in columns. Shelves are displayed at the top with individual library items below. Clicking on the **+** or **-** signs in the left-hand pane expands or collapses Libraries and Shelves.

Libraries allow Drag & Drop operations from the Library content (right side window) to the Library/Shelf tree hierarchy (left side window).

Library Menus

Library Menu

The **Library** menu allows new **Libraries** and **Shelves** to be created and existing ones to be opened and saved. When a library is opened the media used by **MasterClips/Compositions** may not be mounted, (E.g. on a removable drive). **Mount Referenced Media** automatically mounts the most recent location where these media were found

New Library	Create new user library in a mounted folder
Open Library	Open existing user library
Save Library As	Save a copy of the current library with a new name or in a new location
Save Library As 7.x compatibility	Save a copy of the current library in Pyramix 7.x format for maximum
Close Library	Close current library **Shift + Click** closes all open Libraries

Mount Referenced Media current project were found	Automatically mounts the most recent location where media in the
Update Referenced Media Paths this menu item	To update a library, mount all the media folders involved then select

Import MTInterchange XML	Opens the Import MTInterchange XML Browser Window
Export to MTIntercange XML	Opens the Export MTInterchange XML Browser Window

Import MTInterChange XML	Opens a File Browser to locate the XML file you wish to import
Export to MTInterChange XML	Opens a File Browser to select a folder for exporting an MTInterchange XML
Import OMF Library (Avid Bin)	Opens a File Browser to locate the OMF Library you wish to import
Export to Akai DD-Series	No longer available REMOVE
New Shelf	Adds a new Shelf (folder) in the current Library or Shelf
Open Shelf	Opens selected/highlighted Shelf
Up One Level	Moves right-hand pane display up one level in the hierarchy
Properties	Pops up a window showing the **Properties** of the currently selected object

Edit Menu

Cut	Cuts Object from pane. Object will be deleted unless pasted elsewhere.
Copy	Copy object
Copy Trimmer Selection	As it says
Paste	Paste object (Media is preserved at its current location)
Paste with Media	When more than one Media folder or no Media Folders are mounted this opens the **Choose a Media Folder** dialog.

MISSING SCREENSHOT CASE PASTE WITH MEDIA DOESN'T WORK

Library Edit menu Paste with Media - Choose a Media Folder dialog

Select a suitable folder and click on **OK** to complete pasting the object complete with a copy of the associated Media files to the target directory path chosen in the pop-up.
Click on **OK** to complete the Paste with Media Files

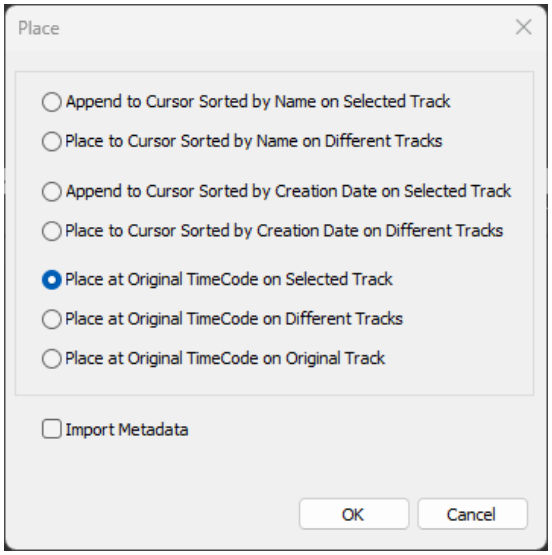
If one or more of the Media Files already exist in the chosen destination a dialog pops-up :
MISSING SCREENSHOT CASE PASTE WITH MEDIA DOESN'T WORK

Library Edit menu Paste with Media - Choose a Media Folder - Copy... dialog

Click on **Yes** to complete the Paste Click on **No** to abort the operation.

Rename Rename object
Lock Rename When ticked **Locks** all objects in the library for **Renaming** (and in the Media Manager). Do you really want your SFX Library entries to be renamed by anyone who can access it?

Open/Audition/View Opens highlighted (selected) Clip or Composition in the Trimmer and begins audition play. Opens highlighted (selected) Shelf
Audition Opens highlighted (selected) master Clip in the trimmer and begins audition play.
Stop Audition Stop audition Play and return Cursor to beginning
Place Opens the **Place** dialog:

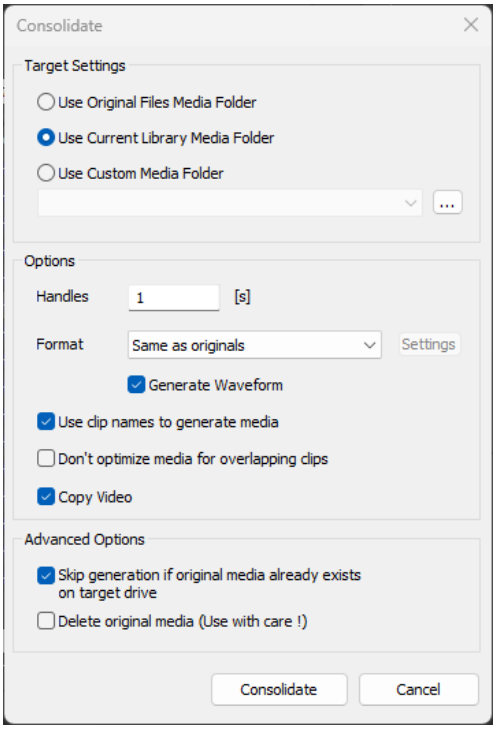


Library Edit menu Place dialog

The selected object(s) will be placed in the Timeline according to the rule chosen here.

The selected object will be placed in the timeline on the selected Track and Playhead Cursor position at its **Sync Point** or, if no Sync Point has been set, at its **In Point**

Consolidate (Libraries only) Opens the **Consolidate** dialog.



Libraries Edit menu Consolidate dialog

The **Consolidate** function makes a selective backup of the media segments in the selected object. I.e. instead of backing up the whole of every media file referenced by the Clips in a composition, **Consolidate** backs up only those parts of the media files that are referenced by the Clip segments in the **Composition**. Extra media, beyond the Clip boundaries can be added using the **Handles** option. This allows further manipulation of the Composition within the limits of the handle length.

Please see also: Consolidating Projects on page xx466

Collect Selected Media to current Project Media Folder Copies all selected media to the current Project Media Folder.

Select Menu

Select All Selects all objects in the right-hand pane (**Ctrl Click** toggles selection of individual objects)

Invert Selection Selected objects are de-selected, unselected objects are selected

---

Select Media Present on current Project Media Folder Selects any Media file(s) shown in the right-hand pane that are present on the current Project Media Folder.

Select Media NOT present on current Project Media Folder Selects any Media file(s) shown in the right-hand pane that are not present on the current Project Media Folder.

Convert Menu

Export Masterclips This is similar to **Quick Export** in the **Media Manager** but is also available in Libraries. It enables selected **Shelves** and **Media Folders** to be exported. Their complete/recursive folder structure is exported. Only **Masterclips/Media** are exported. **Compositions** or any other objects in Libraries are not exported.

View Menu

The **View** menu determines how information is displayed.

Status Bar Turns the Status bar on and off

Large Show large Icons

Small	Show small Icons
List	Show as list
Detail	Show as list with details

Filters Adds **Filter** term entry boxes above each column in the view

---

Options Opens the **Columns** dialog box:

Please see **page 57** for the details of the **Columns** dialog box

---

New Window	Opens a new Library Window empty
Refresh	Forces a refresh

Trimmer Menu

Please see page 59 for the details of the Trimmer Menu

Auto-Generate Waveform	Waveforms are automatically created for objects without them.

Search Menu

Add to Search Results	Creates a new Search Results folder named by date and time and the search term(s).
Exact Word Match	When ticked result will only show exact matches.

Control Menu

Provided mostly for use with hardware controllers.

Folders >

Up	Moves the focus up one step in the tree.
Down	Moves the focus down one step in the tree
Collapse	Collapses the current branch
Expand/Focus on List	Expands current selection/Shifts focus to list

List >

Up	Moves the focus up one step in the list
Down	Moves the focus down one step in the list
Focus on Folders	Shifts the focus to the Folders level
Focus on Trimmer	Shifts the focus to the Trimmer

Trimmer >

Focus on List	Shifts the focus to the list
Play from In	Play from **In** marker in Trimmer
Play from Start	Play from **In** marker in Trimmer
Stop	Play from **In** marker in Trimmer
Set In	Play from **In** marker in Trimmer
Set Out	Play from **In** marker in Trimmer
Set Sync	Set **Sync Point** on Clip in from **In** marker in Trimmer

Library Tab Context Menu

Right-clicking on an object (or a blank area) in the file list in a Library Tab opens a context menu with the following entries:

New Shelf
Open Shelf
Cut
Copy
Paste
Paste with Media
Rename
Open/Audition/View
Place
Consolidate
Properties
These functions are the same as those which can be found in the Library Tab Menus. **Please see: Library Menus on page 57**

Offline / Reference Libraries

As the name implies **Offline/Reference Libraries** are useful for keeping track of very large projects and material on media that may not be permanently on-line.

Creating Offline/Reference Libraries

Offline libraries are created in the **Media Management** Tab Window by selecting
Media Folder > Create Offline/Reference Library.
This will open a standard Windows browser.
Navigate to the location you wish to save the library in.
Type a name for the new Offline Library and Click on **Save**.
Note: The Folder(s) currently mounted in the Media Management frame, the Media Files it contains, its sub-folders their Media File contents will be added to the new Offline Library.

Using Offline/Reference Libraries

When used in the following manner Offline Libraries provide an extremely powerful organizational tool for managing very large project libraries and, for example, sound effects libraries.

Mount The Media
In the **Media Management** Tab Window, Mount all folders or disks containing your audio files (as ripped with LibraryLoader, mTools or any other source). We strongly suggest these files be in either PMF or BWF (Broadcast Wave Format) as they both have a long description field, a unique identifier and a timestamp.

> **Note:** There may well be Copyright implications when working with ripped files. Please ensure you comply with any restrictions on copying other people's material.

Create An Initial Library
Open a Media Folder you wish to include in the new Library and follow the above procedure to create the new Offline Library
The library can now be re-organized, Folders and Shelves created, items duplicated etc. etc.
You can make searches (queries) or apply filters to your Offline / Reference libraries) and, if **Media > Auto-mount Media** is on, each time an item is dragged onto the Timeline the appropriate audio file will automatically mount.
Or this can be done this manually by calling **Media > Mount Referenced Media**.
Updating Libraries - Orphaned Entries
If the original audio files are moved or reorganized, just mount all the folders once again, load all your libraries and call the Library menu command **Update Referenced Media Paths**.

Media / Timeline Linkage

It is important to note that the link between the Timeline and the media is made using unique ID's in the files. This means that if multiple files with the same name, with no unique ID (WAV for example) are

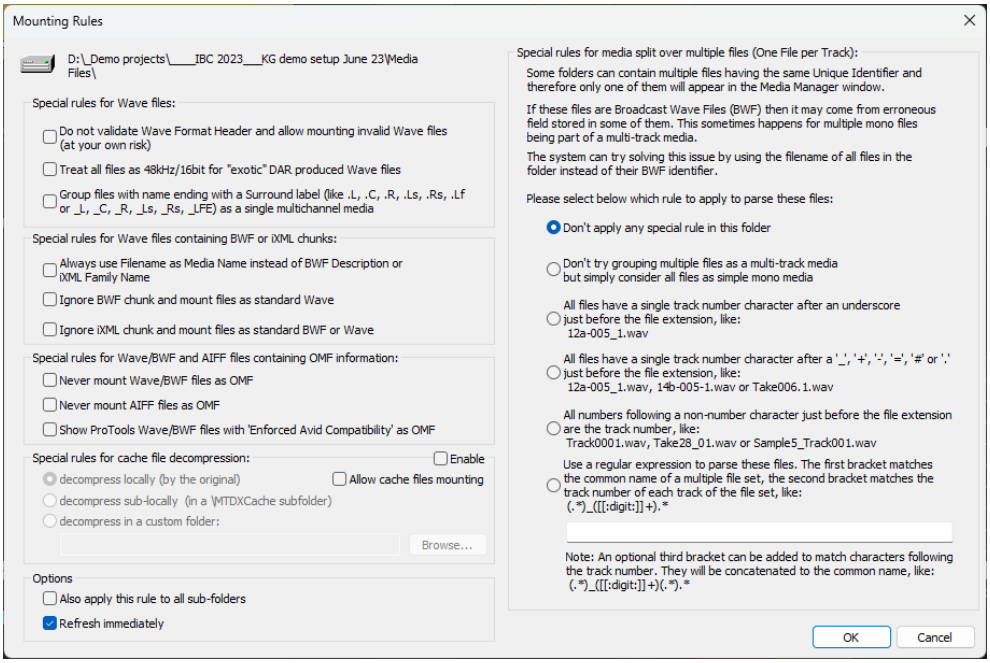
available in various locations, then Pyramix will not be able to distinguish between them when all the folders are mounted. The Timeline will attempt to reference any and all of the instances of the file, meaning that the media shown in the Timeline may well not be the desired instance.

Mounting Rules

This dialog allows various rules to be applied when parsing **BWF** or **Wave** files in a given folder. Pyramix always tries to group multiple mono files that are part of a single multi-track media when viewed in the Media Manager so the multiple mono files appear as a single item with multiple tracks numbered in the form A 1-2 or A 1-8, or A 1-2, 7-8, etc. Otherwise, you would see a separate entry for each mono file whether or not it is part of a multi-track 'set'. In order to achieve this in the case of **BWF** files Pyramix looks at the **BWF** header and uses the **Originator Reference** field as a **Unique Identifier** with some rules as defined by the EBU organization and some conventions adopted between various manufacturers.

It may happen that some files do not follow these rules and therefore sometimes the Pyramix Media Manager fails to properly mount these files. Sometimes some files are missing, or some tracks within a multi-track media are missing. The Pyramix Media Manager detects these conflicts at the time the folder is mounted and informs the user of such a problem, prompting him to go to the **Media Manager > Drive > Mounting Rules** menu item. The **Mounting Rules** dialog allows a variety of different rules to be applied for this or these Media Folders so all files are properly mounted.

Folders where a conflict has been detected appear in Red.
Folders where a special Mounting Rule has been applied appear in Dark Green.
The Mounting Rules dialog can be found in the Media Management Tab window in the Media Folder menu : Media Folder > Mounting Rules



Mounting Rules dialog

Most of the dialog is self-explanatory. The description of the Rules that can be applied appears in the Mounting Rules dialog as above but for convenience, we have also listed the options on the left of the dialog below.
Special rules for Wave files
Do not validate Wave format Header and allow mounting invalid Wave files (at your own risk)
This can enable files to be mounted that do not follow the Wave specification strictly.

Treat all files as 48kHz/16bit for 'exotic' DAR originated Wave files
As it says. Please see DAR WAV file Import just below
Group files with name ending with a surround label (like .L,. C, .R, .Ls, .Rs, .Lf or _L, _C, _R, _Ls, _Rs, _LFE) as a single multichannel media
As it says. Useful when working with files generated by certain other DAWs.

Special rules for Wave files containing BWF or iXML chunks:
Always use Filename as Media Name instead of BWF Description or iXML Family Name
This will allow files recorded in Steinberg's Nuendo to be mounted and can also help with (re)conforming files
from Aaton Cantar or other location recorders where the filename matches information in the EDL.
Ignore BWF chunk and mount files as standard Wave
This effectively treats Broadcast Wave files as ordinary Wave files and can help with (re)conforming as above.
Ignore iXML chunk and mount files as standard BWF or Wave
This treats iXML files as pure Wave or BWF with the same aims as above.
Special rules for Wave/BWF and AIFF files containing OMF information:
Never mount Wave/BWF files as OMF
Never mount AIFF files as OMF
Show ProTools Wave/BWF files with 'Enforced Avid Compatibility' as OMF

Special rules for cache file decompression
When compressed audio files are mounted Pyramix creates an uncompressed WAV version of the file(s) in a cache. The location of these cache files is determined by this dialog.

Locally (by the original) File(s) will be created in the same location as the original file.
Sub-locally (by the original, in a \MTDXCache sub folder). File(s) will be created in a sub folder created by Pyramix in the same location as the original file.

Custom (files are generated to the specified location). File(s) will be created in a user specified location. When this option is selected the Browse... button is available to open a file browser window to set the user defined path.

Enable enables the rule.

Allow cache files mounting when ticked, cache files can be mounted directly, otherwise they remain invisible, i.e. filtered out of Media Manager views.

Options
Also apply this rule to all sub-folders
Refresh immediately

DAR WAV file Import (for those who still have access to such material)
It seems that DAR systems were strange in that they always played audio at 48khz. Even if 44.1khz audio was imported into a DAR, it would be converted to 48khz. The sample rate and bit-depth information in the WAV files was ignored as everything was assumed to be 16-bit/48khz. We've seen WAV files from DAR systems where the WAV files were identified as containing 128-bit audio or having a 10hz sample rate. So it would seem there must have been a bug in the DAR software that caused incorrect data to be stored in the WAV header. There is already code in the Pyramix WAV handler to try to catch these completely invalid parameters but, unfortunately, the WAV files from DAR don't include any manufacturer identifier so it isn't simply a case of identifying that they are from a DAR and automatically forcing them to 48khz in Pyramix.

Tracks and Track Groups

Tracks

Each **Project** has a user defined number of audio **Tracks** on which audio **Clips** can be placed, or audio inputs can be recorded. Blocks representing placed or recorded **Clips** will appear on the **Track** as soon as a **Clip** has been placed or recorded onto it. The **Track** itself extends horizontally beneath the **Time Scale** bar, and multiple **Tracks** are stacked vertically.

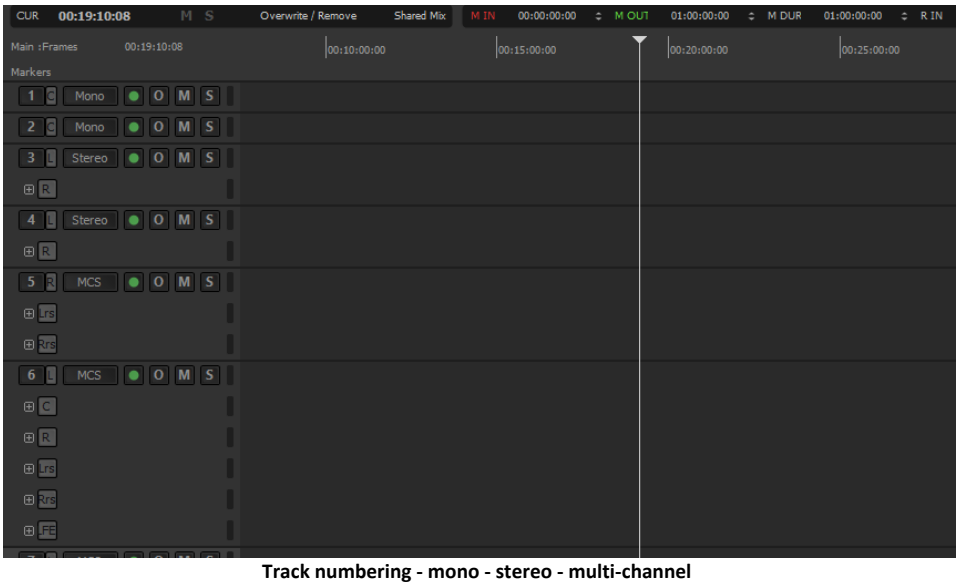
Where appropriate a Video Track or Tracks can also be added. Please see: Video Tracks on page 542.

On the left side of each **Track** is a **Header** panel with various controls and information displays. **Please see: Track Header Panel on page 102**

Some operations only apply to a selected Track. A **Track** can be selected by left-clicking anywhere on the **Header** which will then appear in a darker shade of gray. You can also select a Track by clicking on a blank **Track** area. However, when selecting a Track, be careful **NOT** to inadvertently click on any of the Track buttons, thereby changing a Track function: the **Track Name** or a blank area are good places to click in order to select.
Note: Tracks>Synchronize Tracks and Strips is a key functionality to link edit tracks and mixer strips for many functions such as naming, moving etc

Track Numbering

Tracks are numbered according to the Mixer Strip they are connected to. So, in a project using Mono Mixer Strips exclusively, if there are 10 Tracks they will be numbered 1-10.
Where there are Stereo Mixer Strips or Multi-channel Mixer Strips then, whilst each channel is on a separate Track, both Tracks of a stereo pair are numbered the same, together with a suffix to indicate each channel type. The same applies to multi-channel. As shown here:



Track numbering - mono - stereo - multi-channel

Adding Tracks

By default, a new **Project** opens with the same number of **Tracks** as there are **Input Channels** defined in the **Mixer** for the **Project.** However, **Tracks** can easily be added or deleted.

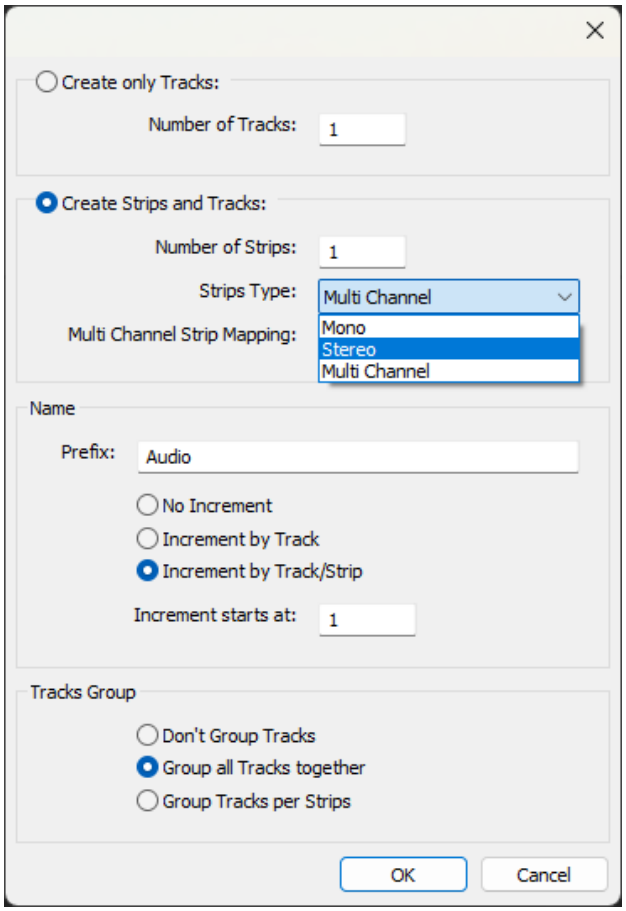
Creating Tracks via Paste

If a Clip or Composition is dragged and dropped or copied and pasted from Media Management or a Library onto a blank area of the TimeLine where no Tracks exist, sufficient Tracks will be created below

the last existing Track to accommodate the number of Channels in the Clip or Composition. But the mixer will remain untouched, meaning that one has to eventually add some mixer strips.

Create New Tracks

New Tracks are inserted below the currently selected Track or, if no Track is selected, at the bottom after the last existing Track. To add **Tracks** to the **Timeline**, select **Tracks > Add Audio Track** (or right-click in a blank area of the Track header and choose **Add Audio Track** from the context menu). It will create the new tracks (and strips) above (before) the selected track.



Create New Tracks dialog

Create only Tracks: / Create Strips and Tracks:
To simply create Mono Tracks only, check the **Create only Tracks** radio button, enter the number of Tracks required into the **Number of Tracks** data entry box and click **OK**. The Track(s) will be created with the default
name **Audio** numbered in ascending order from **1**.

If you wish to create Mixer strips at the same time, check the **Create Strips and Tracks** radio button. Enter the
number of Strips required into the **Number of Strips** data entry box. Pyramix currently supports four categories of Strip. The default is **Mono**, with **Stereo, MS** and **Multi Channel** also available.
The appropriate number of Tracks will be created to suit the chosen Strip type. If **Multi Channel** is selected you
must then choose the desired format from the **Multi Channel Strip Mapping** drop-down list. The following table lists the formats available:

Mono	Dolby 3.0	3rd Order Ambisonic (16 ch)

Stereo	Dolby 5.0	4th Order Ambisonic (25 ch)
2.1	Dolby 5.1	5th Order Ambisonic (36 ch)
Stereo Surround	Dolby 7.0	6th Order Ambisonic (49 ch)
3.0 / LCR	Dolby 7.1	7th Order Ambisonic (64 ch)
3.1 / LCR	Dolby Atmos 5.1.2 Front	
3.0 Surround	Dolby Atmos 5.1.2 Side	
3.1 Surround	Dolby Atmos 5.1.4	
4.0 Quadro	Dolby Atmos 7.0.2 Front	
4.1 Quadro	Dolby Atmos 7.0.2 Side	
4.0 Surround	Dolby Atmos 7.1.2 Front	
4.1 surround	Dolby Atmos 7.1.2 Side	
5.0 / LCR	Dolby Atmos 7.1.4	
5.1 / LCR	Dolby Atmos 7.1.6	
5.0 / ITU-B (0+5+0)	Dolby Atmos 9.1.2 Front	
5.1/ ITU-B (0+5+0)	Dolby Atmos 9.1.2 Side	
6.0 / LCR	Dolby Atmos 9.1.4	
6.1 / LCR	Dolby Atmos 9.1.6	
6.0 / LRC	10.2 TMH	
6.1 / LRC	10.2 TMH	
7.0 / LCR	10.2 TMH	
7.1 / LCR	Auro 9.1	
7.0 / ITU-I (0+7+0)	Auro 10.1	
7.1 / ITU-I (0+7+0)	Auro 7.4 / ITU-J (4+7+0)	
7.0 SDDS	Auro 11.1	
7.1 SDDS	Auro 13.1	
7.0 / ITU-C (2+5+0)	KBS 10.2 / ITU-F (3+7+0)	
7.1 / ITU-C (2+5+0)	NHK 22.2 / ITU-H (9+10+3)	
8.0 / LCR	Cube	
8.1 / LCR	Cube + Mid Layer	
9.0 / LCR	Cube (Corners + Faces)	
9.1 / LCR	Cube (Co + Fa + Edges)	
9.1 / ITU-D (4+5+0)	30.2 La Totale	
9.1 / ITU-E (4+5+1)	4 x Stereo	
11.0	1st Order Ambisonic (4 ch)	
11.1	2nd Order Ambisonic (9 ch)	

Track Types

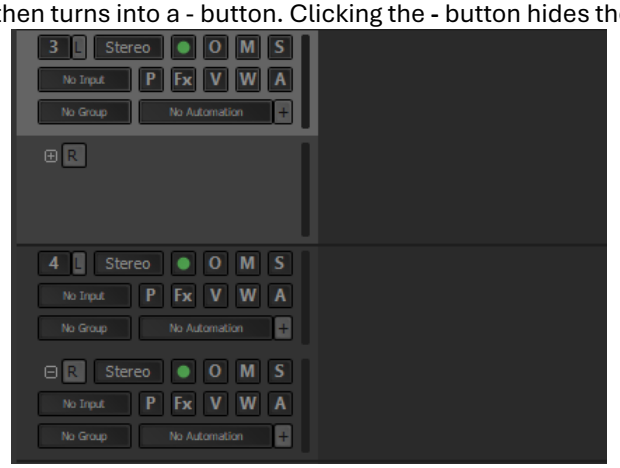
Overview

In Pyramix there are two basic types of Track. **Audio Tracks** which can be single or multi-channel and **Automation Sub-Tracks** which are a vehicle for displaying extra automation data relating to Audio Tracks. A third possibility exists, which is to use an **Audio Track** to display **Bus Automation**.

Audio Tracks

When Multi-channel Tracks are created with a Strip Channels Type format, certain functions are automatically linked, namely: Automation, Solo, Mute, Monitor mode, Record mode, Waveform display. By default and to reduce on-screen clutter Stereo or Multichannel Tracks only display the full complement of buttons on the first channel. For example, the right-hand Track of a stereo pair will only

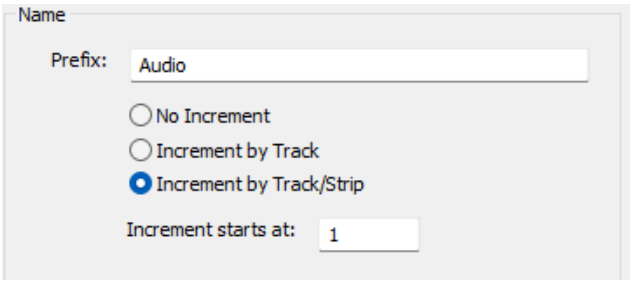
show a pale gray **+** button next to the **R** button. Clicking on the **+** button reveals the rest of the buttons in the header. The **+** button then turns into a - button. Clicking the **-** button hides the buttons again:



Track Headers – Stereo

Naming and Numbering

There are three options:



Create New Tracks dialog - Grouping

Don't Group Tracks leaves the new Tracks ungrouped.
Group all Tracks together groups all the new Tracks in a single group.
Group Tracks per Strips groups the Tracks as they are assigned to strips. E.g. 12 Tracks assigned to two 5.1 strips would be grouped as two six-Tracks.

Synchronized Creation/Deletion of Tracks/Strips

Note: When Creating, Deleting or Moving Strips in the Mixer Configuration page (or with the right mouse button context menus) the connected Tracks are also Created/Destroyed or moved accordingly.

- This behaviour will apply when the **Tracks > Synchronize Tracks & Strips** is checked.
- When Strips are Created or Moved the Tracks are Created or Moved seamlessly.
- On Deleting a Strip or Strips, only empty Tracks are destroyed. Tracks containing Clips are preserved, disconnected and set to minimum size.

Deleting Tracks

Single Track
To delete a **Track**, first select the **Track** to delete. Then choose **Tracks** > **Delete** from the Project window pulldown menu. The **Track** and all **Clips** placed on it will be deleted. Note that only the **Clip** or pointer will be deleted, not the original **Media File**.

Multiple Tracks
You can also delete all Tracks from the selected Track to the last (highest number) by selecting **Delete to Last** instead of **Delete**.

You can also right-click in the **Track Header** to add or delete **Tracks**.

Routing Tracks to / from the Mixer

When you create a **Mixer**, Pyramix will automatically create the same number of **Tracks** as **Mixer Input Strips** (channels).

If **Connect automatically as many inputs and outputs as possible** is checked, Pyramix will attempt to automatically route the output of each **Track** Channel to a corresponding **Mixer** input Channel, so that with mono Tracks **Track** 1 outputs route to **Mixer** Strip 1 input, **Track** 2 to **Mixer** Strip 2, etc.

Similarly, Pyramix will attempt to automatically route each **Mixer** Strip Channel output to a corresponding **Track** input, so that **Mixer** channel 1 output routes to **Track** 1 input, **Mixer** channel 2 to **Track** 2, etc.

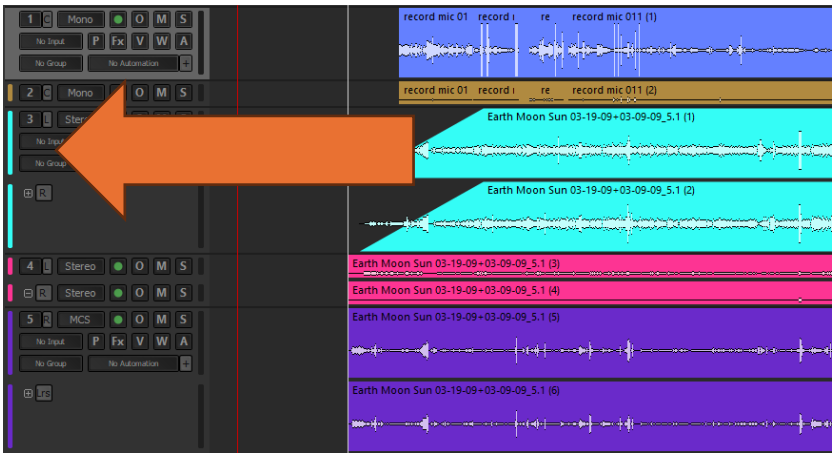
With **Stereo Tracks** Track 1L and Track 1R Channels will be routed to Mixer Strip 1 by default, Mixer Strip 1's outputs will be routed to Track 1L and Track 1R and so on.

So a 5.1 Multi-channel Track connected to a 5.1 Mixer Strip will be connected to the six channels according to the **Strips Channels Type** scheme selected in the Mixer creation wizard or in the **Add Tracks** dialog.

These default **Track I/O** assignments can easily be changed by the user by right-clicking on the Main Mixer Strip Number in a Mono Track or the **L** and **R** buttons in a stereo Track or the **LCRLsRsLfe** buttons in a 5.1 Multi-Channel Track. Please see also: **Adding Strips on page 281**

Track Display Height

Individual Presets
Double-Clicking in the blank area of the Track header to the left of the Strip number (where the arrow points) cycles through four preset Track heights. **Mini**, **Medium**, **Large** and **Extra large** :



Preset Track Heights

Global Track Display Height

Track Height Controls

1, **2**, **4**, **8**, **16**, and **A** buttons at the bottom left of the **Project Editing Panel** automatically scale the vertical Track size so that 1, 2, 4, 8, 16 or All (as many as possible given the vertical space) **Tracks** fit in the vertical space allocated to the **Project Editing Panel**.

The horizontal Scrollbar adjacent to these buttons enables continuous adjustment of the Track height.

Shift + Mouse Scroll Wheel also adjusts Track height.

Track Header Panel

The Track Header Panel contains a number of buttons and information fields.

Track Header

In the top row of a Mono **Track Header** or, by default, in the first Track of a multi-channel Track object, the first button at top left indicates the mixer strip the Track is connected to. Clicking on this pops up a list: None / Input Strips / Outputs Busses. You then can choose the Strip or Bus for which you wish to connect it to. Clicking on any Mixer Strip Channel in the list connects the Track's output to it. It also displays the default routing, C = centre for a mono strip or L or R for a stereo strip and so on.

When **Track** inputs and outputs are not assigned, the corresponding boxes for that **Track** will show **no input** and **Off** instead of numbers and there will be no audio send to the mixer.

The next button is the Track Name. Click on it to type in a new name. (if Synchronise tracks and strips is activated it will also update the related strip) TAB for next track name

The box with the number in the second row shows the input currently connected (in this case MAD Input 1). Click on this to pop up a list of all possible inputs. Click on an input in the list to connect it.

Multiple Tracks can be assigned to the same **Mixer** channel. They are therefore sub-mixed (summed) before entering the **Mixer**. This allows more Tracks to be played than the number of **Mixer** channels. Many Tracks can be fed from the same physical input.

Track Control Grouping

Where the Mixer Strip is multi-channel, Tracks are grouped into Multi-Channel Track groups. By default, only the first Track in such an object shows the full complement of Track Header controls. The other Tracks just show the channel assignment, e.g. **R**, **C**, **Ls**, **Lfe** etc. and a small [+] button. Clicking this button shows the full complement of Track Header controls.

Button Grouping
Buttons in Multi Channel Track are linked by default. First by Track Group then by Mixer Strip. This behaviour can be modified as follows:

No Modifier Auto linked by Track Group then by Mixer Strip.
Ctrl Bypasses all linking
Shift Affects all Tracks
Ctrl + Shift Bypasses Track Groups but still follows the Strip. (Useful when Multi-Channel Strips/Tracks are grouped.)
Scroll Wheel Affects Track height.

Tracks Feeding Direct Monitoring Input Strips

Track returns to these strips do not have automatic delay compensation applied and are intended for monitoring only. When mixing down the Track outputs should be connected to 'normal' strips. To indicate this clearly, Tracks feeding Direct Monitoring Input Strips show a small red box with 'D' in the header:

Track Header Direct Monitoring Indicator

Track Header Components

Overview

The Track Header consists of a number of buttons and information displays spread over from one to three rows. Buttons used most frequently are arranged in the top row so that, when only one row high, they remain visible.

Track Header Components

If the Track is a member of a Track Group then a toggling **- / +** button is shown, together with the Track Group name, in the Track Group separator area above the header.

Expand Track Group

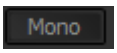
Collapse Track Group - Alternate state of **Expand Track Group**.

Components

First Row

The number on the top-left button shows the number of the **Mixer Strip Channel** its output is assigned to. Clicking this icon pops up a list to select from all available **Mixer Strip Channels**.If the button shows a **Off**, no **Mixer Strip Channel** is selected and recording and or replay is not possible. The C – L – R – M etc identifier is also shown. All Tracks are numbered in this way in ascending mixer **Strip** order.

Note: If the small red  symbol is visible to the left of the Strip number then the **Track is feeding a Direct Monitoring Input Strip** - Therefore automatic delay compensation will not be applied. Patch Track to a 'normal' Input Strip for mix down etc. The symbol is also displayed when the **Track is feeding an Input Strip with an Internal Bus Return Input**. A Strip fed from an **Internal Return Bus** will **NOT** be fully Delay Compensated when in Auto-Monitoring mode and when in Repro mode the red '**D**' will be appear to indicate that automatic delay compensation will not be applied. On the other hand, recorded material will be Compensated correctly and in sync with the current timeline events.



The name button defaults to the Track type. Click on the button to type a new name in the field.

The Record icon has three possible states.

Record Safe and **Record Ready** are toggled by left-clicking the icon. **AutoPunch Ready** is enabled / disabled by holding down the **ALT key** while left-clicking the icon.

Record Safe - no recording possible.

Record Ready - Recording commences when the transport **Master Record** button is pressed and finishes either when the **Stop** button is pressed, or when the **Play** button is pressed.

Autopunch Ready - Recording commences when the previously set **Record In** point is reached and finishes when the previously set **Record Out** point is reached.

The Monitor icon has three possible states.
These are toggled by left clicking the icon.

Auto - monitoring switches the associated **Mixer channel** input automatically between input and repro. Behavior depends on the **Auto-monitoring** section setting in the **Settings > All Settings > Application > Playback/Record** page**. European Monitoring** (All Tracks turn to **INPUT** on stop) **OR US Monitoring** (Only Record Ready Tracks turn to **INPUT** on stop)

Repro - The associated **Mixer channel** is always fed from the Track replay.

Input - The associated Mixer channel is always fed from the Track's selected Input source.

The **Mute** icon toggles the **Track Output** between **Un-Muted**, as shown here;

and **Track Output Muted**, as shown here.

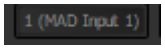
The **Solo** icon toggles the **Track Output** between **Solo off,** as shown here and;

Solo active as shown here.

Peak Meter - If the Peak Meter is visible on the far right of the Track Header, clicking on it hides it. If not visible, clicking in the space where it should be unhides it. The meter scales with the Track height. Meter parameters follow the settings made in Settings > All Settings > Mixer > Level Meter.

Automation Scale - If Automation display is switched on, a scale appropriate to the control is shown to the right of the meter.

Second Row



Input source - the first number shows the absolute number of the selected record input. The second number in brackets shows the input number within the physical or logical input block.

When this area shows a **No Input** no record input is selected. This can be also set directly in the Mixer Console window.

Playlist opens this menu:

Playlist popup menu

Please see: Playlists on page 687

Effects - Clicking this button pops up a menu:

Automation popup menu

The list shows all effects in the Mixer Strip the Track is connected to. Selecting an effect in the list opens the control window for the plug-in. Show Mixer Strip opens the mixer (if not opened) and highlights the related strip.

The **Always Visible** icon toggles between always visible or for Track Group if member of a Track group.
This function is very useful for large project as using the wheel on your mouse allows to scroll through the tracks vertically by keeping these tracks always visible

The Waveform icon has three possible states.

Display Waveform - by default shows **Clips** as orange blocks with white waveform superimposed.

Display Envelope - by default shows **Clips** as orange blocks with white waveform and adds a black line which allows the gain to be adjusted using the mouse by simply clicking and dragging.

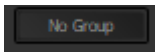
Display Text - by default shows **Clips** with **Text Labels** without waveform.

Note: Waveform display can be conventional symmetric or **Half Waveform** relative to the bottom of the Clip. **View > Waveform Display > Show Half Waveform / Origin**

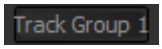
Toggles automation curve display for the Track. Inactive as shown here, or

Automation curve display for the Track Active, as shown here. If no automation has been performed yet, the GAIN line will be shown and initiated. Right-clicking the button pops up the automation display menu for the Track. **Please see: Track Automation Menu on page 426**

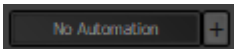
Third Row



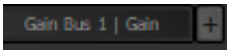
Track Group indicator and selector. Click on the button to pop-up the list of Track Groups available. Click on an entry to select. (if no existing groups= No Group)



Track Group indicator and selector indicating that the Track is a member of the Track Group **Track Group 1**

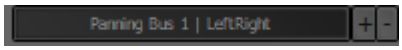


Automation Curve indicator and selector. Clicking on the button pops-up a list of automatable parameters for the Track. The selected parameter curve is superimposed on the Track and the label changes to reflect this:



Automation Curve indicator and selector. Here **Fader** has been selected.

Add Automation Sub-track this button is just to the right of the **Automation Curve** button above. Clicking on the button pops-up a list of automatable parameters for the Track. The selected parameter curve is displayed in a new **Automation Sub-track** below the current normal Track.



Automation Sub-track Header

The main button in the **Automation Sub-track** Header pops up the list of automatable parameters for the Track. Selecting **More...** opens the **Select Displayed Automation Track** dialog with access to every automatable parameter in the Project. (**Please see: Automation Sub-Tracks on page 95**)

The smaller **[+]** and **[-]** buttons on the right of the main button create a new **Automation Sub-track** and delete the current one, respectively. The icon to the right indicates the number of audio channels controlled by the automation in the **Sub-track**.

When one or more Automation Sub-tracks exist a minus [-] button is shown in the track header of the **Strip**. Clicking this button toggles all Automation Sub-Tracks associated with this Audio Track visible/hidden.

Automation Sub-track Indicator/toggle show-hide

Note: Automation is by defaults OFF, one has to enable the automation modus to Play to effectively hear the automation

Track Record Modes

Each **Track** has a tri-state **Record Ready** toggle button, located to the left of the **Track** itself in the **Track Header**.
Tip: Right-clicking on a Track arming button opens the **Settings > All Settings** window immediately on the **Project> Record** page.

Play

The **Green Dot** in the **Track Header** indicates **Record Safe** mode, the default when **Tracks** are newly created. When in this state, the **Track** cannot be recorded to.
Record Ready (Manual) **Click** on the **Green Dot** once to toggle to **Record Ready** mode. This is indicated by the dot turning into the **Red Dot**. The Track will now go into **Record** mode immediately when the **Master Record** button is pressed in the **Transport Strip** or
Transport window.

Record Punch In (Auto)
Alt-Click on the Red Dot to toggle to Record Punch In mode. This is indicated by a Red Dot flanked by 2 white vertical lines. In this mode, when the Master Record button is pressed in the Transport Strip or Transport window, the Track will stay in Play mode until the current Mark In point is reached, then the Track will go into Record mode. It will stay in Record mode until the current Mark Out point is reached.

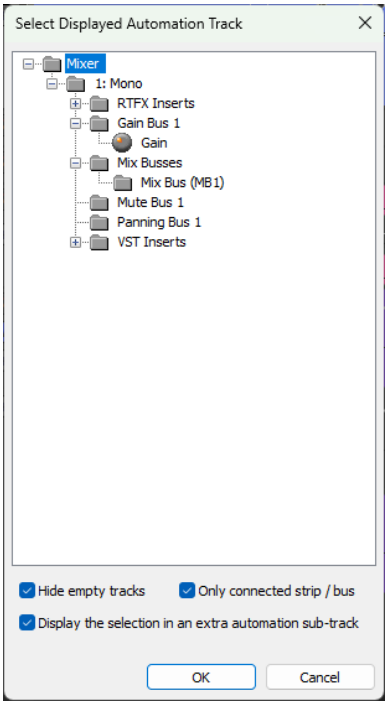
Automation Tracks

Overview
Automation curves can be overlaid on Audio Tracks. However, there is often a need to display more than one automation parameter at the same time. (Commonly Gain, Mute and Pan). In order to accommodate this Pyramix has **Automation Sub Tracks**. Similarly, there are times when it would be highly desirable to be able to display Bus automation curves in the Timeline. Pyramix uses ordinary Audio Tracks for this purpose, **Please see: Bus and VCA Group Automation Tracks on page 96**

Automation Sub-Tracks

Add Automation Sub-track this button is located just to the right of the **Automation Curve** button in the third row of Audio Track headers. Clicking on the button pops-up a list of automatable parameters for the Track.

All automatable functions can be displayed. **Fader Gain** and **Mute** can be selected directly while other functions are grouped logically into sub-menus. Clicking on **All...** at the bottom of the list opens the **Select Displayed Automation Track** dialog:

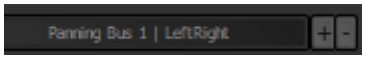


Select Displayed Automation Track dialog

All automatable parameters for the entire Project are shown in a tree.

Hide Empty Tracks	When ticked only Tracks with existing Automation Date will be present in the tree.
Only connected strip / bus	When ticked only Strips and Buses connected are shown.
	Display the selection in an extra automation sub-track When ticked a new Automation Sub-Track is created to contain the automation curve for the selected parameter when the **OK** button is clicked.
OK	Confirms selection and closes the dialog
Cancel	Cancels the selection and closes the dialog.

The selected parameter curve is displayed in a new **Automation Sub-track** below the current normal Track.



Automation Sub-track Header

The main button in the **Automation Sub-track** Header pops up the list of automatable parameters for the Track. Selecting **More...** opens the **Select Displayed Automation Track** dialog with access to every automatable parameter in the Project. The smaller **[+]** and **[-]** buttons on the right of the main button create a new **Automation Sub-track** and delete the current one, respectively. The icon to the right indicates the number of audio channels controlled by the automation in the **Sub-track**.

When one or more Automation Sub-tracks exist a small blue [A] button is shown adjacent to the **Strip** number. Clicking this button toggles all Automation Sub-Tracks associated with this Audio Track visible/hidden.

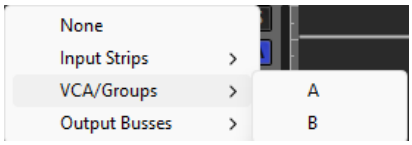
Automation Sub-track Indicator/toggle show-hide

> **Note:** Automation is by defaults OFF, one has to enable the automation modus to Play to effectively hear the automation

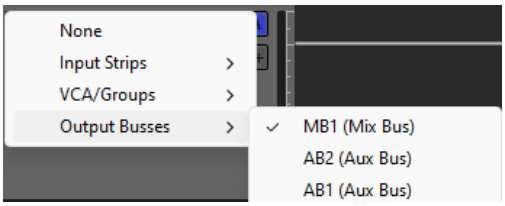
Bus and VCA Group Automation Tracks

Normal Audio Tracks are used to display and manipulate Bus and VCA Group Automation.

Clicking on the top-left button, used for assigning Tracks to Mixer Strips Now also has the option of connecting to VCA Group Strips and Bus Strips :

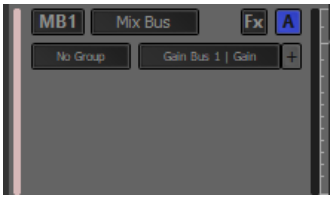


Select VCA Group Strip



Select Output Bus

A Mix Bus (Aux Bus) is connected without consideration of the number of Channels in the strip.
The Mix Bus ID (Aux Bus ID) is displayed in the connection Box (MB1, MB2, AB1, etc...)



Bus Automation Track header

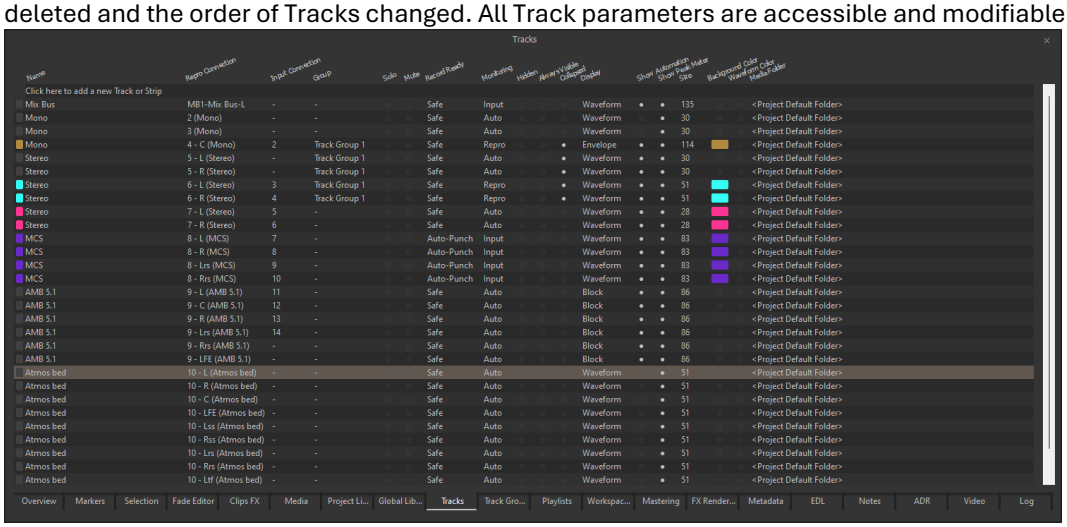
The Bus Name is displayed in the Name Box, but is not editable currently.
The Fx button remains available.
The Automation button [**A**] is available.
The Automation Name and [+] are available.
Automation Sub-Tracks [+]) are available.

Notes: When connected to a Bus the Track does **not play back any audio**. It can, however carry Clips.

When right clicking on the [A] button or left clicking on the Automation Name or [**+**] all menus enabling Automation Tracks to be selected filter available Tracks following the Bus controls as is the case for Input Strips.

Tracks Tab Window

The **Track** Tab Window shows a table where each row contains information about a single Track and each column contains information and function selection fields. New Tracks can be created or existing ones deleted and the order of Tracks changed. All Track parameters are accessible and modifiable.



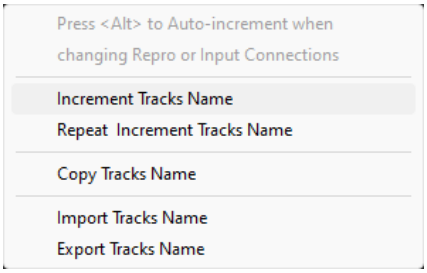
Tracks Tab floating Window

New Tracks can be added by clicking on the first line of the Tab Window and typing a suitable name then pressing **Enter**.

Tracks can be deleted by selecting them and pressing the **Delete** key.
They can be selected in multiple ways by holding **SHFT** for from/to and **+CTRL** to selected more then one
The order of the Tracks can be changed by selecting and dragging Tracks. Click on the symbol at the far left of the **Name** field and drag to the desired row.

Tracks Tab pop-up

Right-clicking on a selection of Tracks or on all Tracks (no selection) displays this context menu:



Increment Tracks Name : Adds an incremental number after each selected Tracks name, taking into account an already existing number
Repeat & Increment Tracks Name : Copies the first selected Tracks name to the rest of the selection and adds an incremental number
Copy Tracks Name : Copy the selected Tracks name or all if no selection
Paste Tracks Name : Paste the previously selected Tracks name to the currently selected Tracks
Import Tracks Name : Rename the selected Tracks or all Tracks if no selection with names coming from a text file
Export Tracks Name : Saving the selected Tracks or all if no selection to a text file
Making Settings Changes to Multiple Tracks
Changes to Tracks settings can be made on a multiple selection of Tracks. Press **Ctrl** and Click on a Track to add or subtract it or press **Shift** to select a contiguous range of Tracks.
Changing Repro or Input connections
Clicking in the column field to drops down a list of available connections. Highlight the required connection to select it.

With a range of Tracks selected, choosing a connection from the list assigns all selected Tracks to the same connection.
If **Alt** is held down while choosing the selected Tracks are connected in ascending order.

Track Tab Column Fields

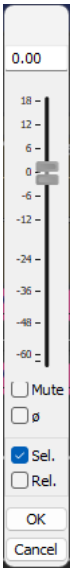
Name
The name of the **Track**. Up to 29 characters are visible in this field but longer names are accepted. Click in the field or use **F2** to enter a new name.
Repro Connection
Shows which Mixer Input Strip (and Channel if applicable) the Track is connected to. Clicking in this column field drops down a list box with all available Mixer Input strips (and Channels). Strip number on the left followed by Channel Tag with the Strip Name in brackets.
Input Connection
Shows which Input is feeding the Track. Clicking in this column field drops down a list box with all available physical inputs and Internal Return buses.
Group
Shows which **Track Group** (if any) the Track belongs to. (see below) Clicking in this column field drops down a list box with all available Track Groups.
Solo
If **YES** Track is soloed. Clicking in this column field toggles between **YES** and blank.
Mute
If **YES** Track is muted. Clicking in this column field toggles between **YES** and blank.
Record Ready
Shows the current record ready state. Clicking in this column field drops down a list box with the three possible states, **Safe**, **Record Ready** and **Auto-Punch**.
Monitoring
Shows the current monitor mode. Clicking in this column field drops down a list box with the three possible modes, **Auto**, **Input** and **Repro**
Hidden
If **YES** the Track is not visible in the Timeline but continues to operate normally. Clicking in this column field toggles between **YES** and blank.
Always Visible
If **YES** the Track will always appear on screen (if there is sufficient room) even when scrolling other Tracks.
Collapsed
If **YES** the Track is a member of a **Track Group** currently collapsed. (see below)
Display Mode
Shows the current Clip Display Mode mode. Clicking in this column field drops down a list box with the three possible modes, **Block**, **Waveform** or **Envelope**
Show Automation
If **YES** the automation envelope is displayed and initiated. Clicking in this column field toggles between **YES** and blank.
Show Peak-Meter
If **YES** a Peak Meter is displayed in the **Track Header**. Clicking in this column field toggles between **YES** and blank.
Size
Shows the current Track display **Height**. (in pixels) Clicking in this field allows a numeric value between 24 and 511 to be entered.
Background Color
Shows Clip background color. If blank, color is set to the default. Clicking in this column field pops-up a color picker. Choosing **Standard** restores to default.
Waveform Color
Shows Clip Waveform color. If blank color, color is set to the default. Clicking in this column field pops-up a color picker. Choosing **Standard** restores to default.
Recording Media Folder
Shows the **Media Folder** where new recordings will be stored. Clicking in this column field pops-up a list of all mounted Media Folders.

Track Envelope and Static Gain

Pyramix offers two Track based methods of varying Clip gain. **Static Gain** and **Envelope**.
Note: Static Gain and Envelope operate independently of the dynamic automation. And you can open and modify it during playback.

Static Gain

Gain Window



The Gain window allows the gain to be set for the current selection. The gain value can be typed into the box at the top of the strip or set by clicking and dragging the fader.

Keyboard up and down arrows adjust gain by 0.1dB per press, with **Shift** 0.5dB per press and with **Ctrl + Shift** 1.0dB per press.
Mute when checked, mutes the selection but retains the gain value
Sel. box (**Se**lection). When checked, the gain change will be applied to the whole selection (default is checked.)
Rel. box (**Rel**ative) When checked **and** a series of Clips are grouped, the gain change is relative to pre-existing level.s
When neither box is checked any gain change is only applied to the Clip which was last right-clicked (even if others are selected)
OK button executes any changes selected in the Gain window and closes it
Cancel button cancels any changes selected in the Gain window and closes it
Note: The upper end of the scale is not fixed. You can continue to raise gain until the mouse pointer hits the edge of the screen.
Gain Window

Keyboard Shortcuts

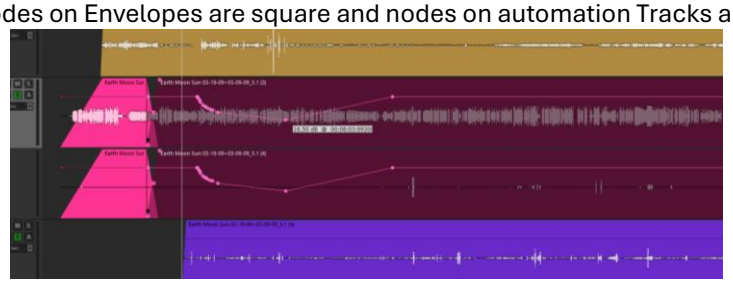
- Up Arrow = Increase gain by 0.1dB/step
- Down Arrow = Decrease gain by 0.1dB/step
- Shift + Up Arrow = Increase gain by 0.5dB/step
- Shift + Down Arrow = Decrease gain by 0.5dB/step
- Ctrl + Shift + Up Arrow = Increase gain by 1.0dB/ step
- Ctrl + Shift + Down Arrow = Decrease gain by 1.0dB/step

Envelope (clip volume curve)

Enveloping is active continuously for all Clips. However, in order to change the envelope from the default 0db unity gain **Display Envelope** must first be switched on in the Track Header by toggling the Waveform button until it displays:

Display Envelope - by default shows Clips as orange blocks (brown when selected) with white waveform and adds a thin black line (thicker and orange when the Cue is selected) which allows the gain to be adjusted using the mouse by simply clicking and dragging. Pressing the **Alt** key enables the drawing tool for envelopes. This is also applicable to **Automation curves**.

Note: Envelope level changes are rounded to 0.5dB
Note: Adjustment nodes on Envelopes are square and nodes on automation Tracks are circular.



Adjusting Envelope

As can be seen above the mouse cursor changes to a new symbol when over the Envelope line. Different cursor symbols mean that clicking (and, where appropriate, dragging) will do different things. For example, Left-clicking adds a node which can then be dragged to the desired level as shown in the box beside the cursor. Note that the
TimeCode value pop-up is elapsed time from the beginning of the Clip.
Note: Double-clicking a node restores its value to 0dB.

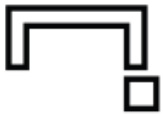
Actions and Modifiers

Left Click Anywhere on the Envelope line to make a new node.
Ctrl + Click On an existing node to adjust all nodes in the Region selected currently. New points are inserted automatically at the Region borders if necessary.
Alt + Click Anywhere on the Envelope line to draw nodes freehand.
V + Click Constrains changes to a point to **Vertical**.
H + Click Constrains changes to a point to **Horizontal**
Click - hold – Alt Create new point with same value as next point. (if one exists).
Click -hold- Ctrl Create new point with the same value as previous point (if one exists).
Ctrl + Alt + Click On an existing node to erase it.

Envelope Cursors
Note: Adjustment nodes on Automation Tracks are circular and nodes on Envelopes are square
Left Click anywhere on the Envelope line to make a new node:

Left Click on an existing node to adjust it:

Ctrl + Click on an existing node to adjust all nodes in the Region selected currently:

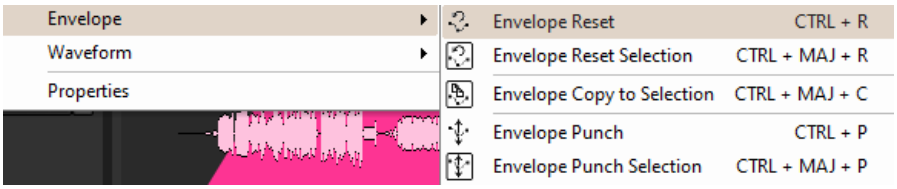


Alt + Click anywhere on the Envelope line to draw nodes freehand:

Ctrl + Alt + Click on an existing node to erase it:

Clip Envelope Menu Functions

Clips > Envelope offers a number of powerful Envelope related functions :



Clip > Envelope Sub-menu

Envelope Reset Reset the gain envelope for the whole selection by deleting all envelope nodes within the selection only on the Track under the mouse cursor when Reset is chosen.

Envelope Reset Selection Reset the gain envelope for the whole selection by deleting all envelope nodes within the selection.

Envelope Copy to Selection Copies the values of all envelope nodes within the selection from the Track under the mouse cursor when Copy to Selection is chosen to all other Tracks in the selection

---

Envelope Punch Places four new envelope nodes at the bounds of the selection on the Track under the mouse cursor when Punch is chosen and opens the Punch Envelope dialog box

Envelope Punch Selection Carries out the same operation as Punch but to all Tracks in the current Selection.

Envelope Shortcuts

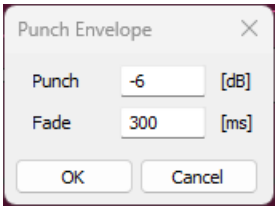
If Envelope features in your workflow it is well worthwhile learning some keyboard shortcuts:

Envelope Reset	Ctrl + R
Envelope Reset Selection	Ctrl + SHIFT + R
Envelope Copy to Selection	Ctrl + SHIFT + C
Envelope Punch	Ctrl + P
Envelope Punch Selection	Ctrl + SHIFT + P

Punch Envelope

Punch Envelope is a powerful method of adjusting gain within a Clip in many circumstances, especially when editing dialog.

When invoked from the Clips > Envelopes menu or by Ctrl + P or Ctrl + SHIFT + P the Punch Envelope dialog appears :



Punch Envelope dialog

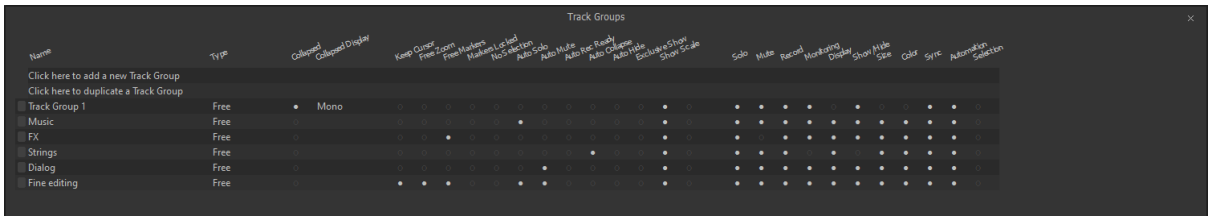
Type the gain change required in the **Punch** field. (Type a **-** minus to attenuate)
To add a fade at each end of the Punch, type the required duration in **ms** in the **Fade** field.
Click on **OK** to execute the change or **Cancel** to reject it.

Track Groups

Track Groups, as the name implies, enable a number of logical function linkages between Tracks and several other useful methods of improving efficiency. Track groups can be created and manipulated by the user. Track Groups are also created by default when Recording or Rendering operations occur on more than one Track at the same time.

Note: To add Tracks to a **Track Group** us e the drop-down list menu in the **Group** field in the **Tracks** Tab pane.

Track Groups Tab Window
Opens a table where each row contains information about a single Track group and each column contains Information and function selection fields.



Tracks Groups Tab/floating Window

The first two rows enable new Track Groups to be created and existing ones to be duplicated by clicking on the **Name** field.

To create a new Track Group, click on **Click here to add a new Track Group**. A text entry box replaces the **Name.** Enter a suitable name and press **Enter**. A new Track group will appear at the bottom of the list.

To duplicate an existing Track Group, click on the Track Group you wish to duplicate then click on **Click here to duplicate a Track Group**. A text entry box replaces the **Click here to duplicate a Track Group**. Type a suitable name and press **Enter**. The duplicate **Track Group** appears in the row below the **Track Group** you have just copied. Subsequent rows are moved down the table. The **Track Group** entries can be re-ordered by clicking on the symbol at the far left of the **Name** field and dragging to the desired row. (all related tracks in the timeline are also duplicated)

When Tracks are assigned to a **Track Group** a small Group Track is shown in the **Timeline** immediately above the first assigned Track.

Track Groups can be collapsed/expanded by clicking the little [-] or [+] on the Track Group Track header.

Track Group Column Fields

Name
The name of the **Track Group**. Up to 29 characters are visible in this field but longer names are accepted. Click in the field or **F2** to edit the name.

Type
Clicking in this column field drops down a list box with current choices of **Free**, **Source**, or **Destination**.
Free is used to create General purpose Track Groups
Source is used for grouping Tracks to be Sources in the Source/Destination model.
Destination is used for grouping Tracks to be Destinations in the Source/Destination model.

Collapsed
Track Groups can be collapsed, so only one of the Tracks of the group is displayed. When set to **Yes**, only the Track chosen and shown in the **Collapsed Display** field is displayed in the Timeline. This field has the same function as the little [-] or [+] on the Track Group header.
If the single visible Track is selected the group is expanded.

Collapsed Display
Clicking in this column field drops down a list box which contains the names of all the Tracks in the group. The selected name determines which Track will be displayed when the display is collapsed. The rest of the fields All the other column fields toggle when clicked, either displaying **Yes** or a blank. The functions described below apply when the fields are set to **Yes**.

Keep Cursor
The Group 'remembers' the position of the cursor and restores it each time one of its Tracks is selected.

Free Zoom
The group has its own zooming factor, independent of the general zoom factor.

Free Markers
Track Groups can have their own list of markers that are displayed on the Track Group Scale or on the main Time-Code Scale if the Track Group Scale is hidden (see below).

Markers Locked
Locks the Markers. For the particular **Group**. **Free Markers** must be **ON**

No Selection
Clicking on Clips placed on Tracks of the Group does not select anything, the cursor is simply placed at the position where the mouse is clicked. Clicking with the **Q** key held down allows Clips to be selected on these Tracks.

Auto Solo
If any Track of this Group is selected, the whole group is automatically Soloed.

Auto Mute
The whole Group is automatically muted unless one of its Tracks is selected.

Auto Record Ready
When a Track of this Group is selected, the whole Group goes into Record Ready mode.

Auto Collapse
When none of the Tracks of this Group is selected, the Group is automatically collapsed to display a single Track. When this Track is selected, the whole Group is expanded.

Auto Hide
When none of the Tracks of this Group is selected, all Tracks of the group are automatically hidden. When any Track of the Group is selected, the whole Group is shown.

Exclusive Show
When any Track of this Group is selected, all Tracks that are not part of this Group are hidden. This is the equivalent of a Solo for the Display.

Show Scale
Toggles show/hide an independent scale for TimeCode if the Track Group is on Free Zoom and Markers if it is in **Free Markers** mode. If **OFF** then the Scale and Markers are displayed in the main Scale of the Timeline when any of the Tracks of this Group is selected.

Selection
When set to **Yes** this option ensures that any selection made within a Track Group is extended to all Tracks in the group. **Selection** is disabled by default for backwards compatibility.
All other columns of the Tab Window (**Solo**, **Mute**, **Record**, **Monitoring**, **Display**, **Show/Hide**, **Size**, **Color**, **Sync**, **Automation Display**) define which of the parameters set in the Track Header or in the **Tracks** Tab

window are affected by the group, I.e. which of these parameters are changed in the whole group when a change is made to an individual Track of the Group.

Transport and Navigation

Transport Control

Pyramix features a wide range of Transport Control commands including, unlike many other workstations, **Reverse Play** and Play at fractions and multiples of sync play speed both forwards and backwards. These possibilities can be attached to short-cut keys in the Keyboard Shortcut editor. Please see: **Customizing Keyboard Shortcuts on page 526**
Of course, these commands are also available via remote controllers that support them.

Navigation

Pyramix Virtual Studio offers a number of ways of navigating around a Project.

Timeline Structure

Important! The Pyramix Timeline starts at **00:00:00:00** on **Day 0**. It is perfectly possible to go backwards before **00:00:00:00** say to **23:50:50:00**. In this case the cursor is in **Day -1**. If you go forwards beyond TimeCode Midnight the cursor will be in **Day +1**. When the Timeline is outside Day 0 it is shaded in red. **A Pyramix timeline contains multiple days.**
The TimeCode display in the bottom Transport Toolbar and Main Transport Window will show a red indication when the Playhead Cursor is outside Day 1. E.g. **-1** in the day before Day 0, **+1** in the day after Day 0 and so on.

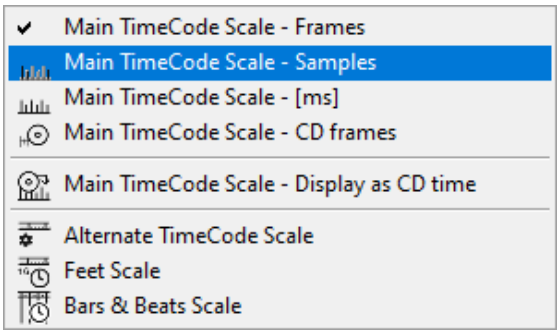
Time Scale Rulers

Pyramix is equipped with many Time Scale options. Each Time Scale has an associated **Time Scale Ruler** and **Tool Bar** which appears above the Time Scale Ruler(s).

Main TimeCode Ruler
Near the top of the **Project Editing Panel** is a horizontal gray area with time code numbers. This is the **Main Time- Code Ruler**. On the left, above the Track Headers, the Time Range, i.e. the length of the visible Timeline window is indicated.

The simplest way to move the **Playhead Cursor** within the **Project Editing Panel** is to position the mouse anywhere along the **Time Scale Ruler** and left-click. The **Playhead** will immediately move to the new position. You can also left-click the **Playhead Cursor** and drag it along the Ruler.

Context Menu
Clicking in the left hand, Header, area of a Time Scale Ruler pops up a context menu.



Main TimeCode Scale Ruler context menu

The first six entries offer a choice of display modes for the Main TimeCode Scale a tick appears next to the option selected currently:

- Main TimeCode Scale - Frames
- Main TimeCode Scale - Samples
- Main TimeCode Scale - [ms]

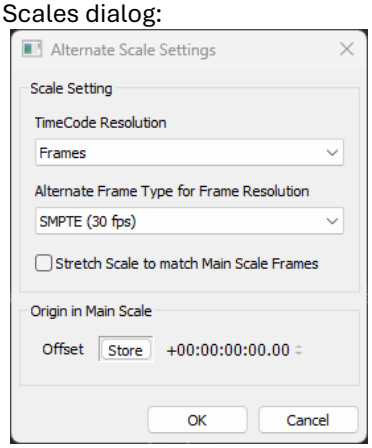
- Main TimeCode Scale - CD frames
- Main TimeCode Scale - Display as CD Time
- The remaining three entries add new Time Scale Rulers beneath the Main TimeCode Scale Ruler
- Alternate TimeCode Scale
- Feet Scale
- Bars & Beats Scale

Alternate Time Scale Ruler
To add an alternative Time Scale Ruler below the Main Ruler right-click in the Main Ruler header area and select

Alternate TimeCode Scale
You can set up the Alternate Time Scale Ruler either by right-clicking in the its Header to open the context menu or by selecting **Alternate TimeCode Scale Settings** or **View > Scales / Toolbars > Alternate TimeCode Scale**
Settings:

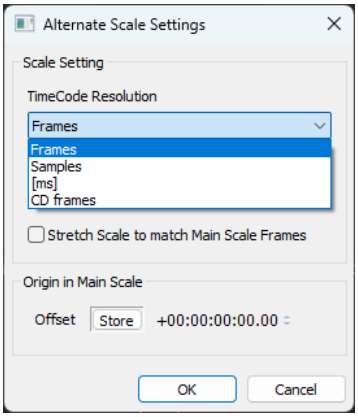
- Alternate TimeCode Scale Settings

Choosing this pops up the Alternate Scales dialog:



Alternate Scale Settings dialog

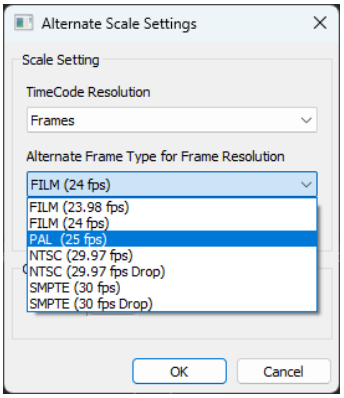
Scale Setting
The **Scale Setting** combo box offers a choice of TimeCode resolution to display:



Alternate Scale Settings TimeCode Resolution drop-down menu

Stretch Scale to match Main Scale Frames (see below)

Origin in Main Scale
An Offset can set and stored. For example when versioning. I.e. making several sound versions for the same picture.
The **Alternate Frame Type for Frame Resolution** combo box offers a choice of frame types appropriate to the chosen resolution. E.g.



Alternate Frame Type for Frame Resolution combo box

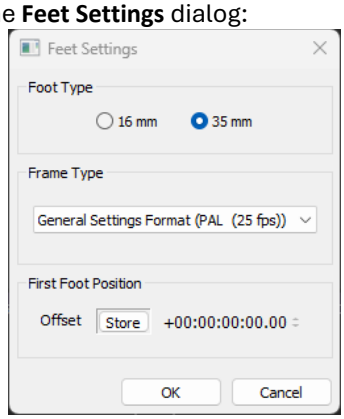
View > Scales / Toolbars > Alternate TimeCode Scale Settings also enables selection of The TimeCode Resolution for the Alternate Scale from a choice of:

- Frames
- Samples
- [ms]
- CD Frames

When the Resolution is set to **Frames**, an **Alternate Frame Rate** can be chosen.

When **Alternate Frame Rate** is chosen, the check box **Stretch Scale to match Main Scale Frames** allows the Alternate Scale to no longer display the same time flow as the Main Scale (1 Second = 1 Second). Instead it matches the length of individual Frames (1 Frame = 1 Frame). In this case the time is not the same in both scales and this allows making comparisons between, for example, 24 frames events and 25 frames events.
The **Origin in Main Scale** option allows an offset to be set between the Main Scale and the Alternate Scale.

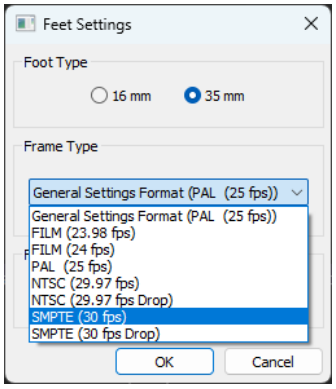
Film Feet Scale Ruler
As with the other Scale Rulers, clicking in the header area pops up a context menu with the extra option **Feet Settings** selecting this pops up the **Feet Settings** dialog:



Feet Settings dialog

Foot Type
The radio buttons offer a choice of **16mm** feet (units of 40 frames) and **35mm** feet (units of 16 frames).

Frame Type
The combo box offers a choice of frame rates:

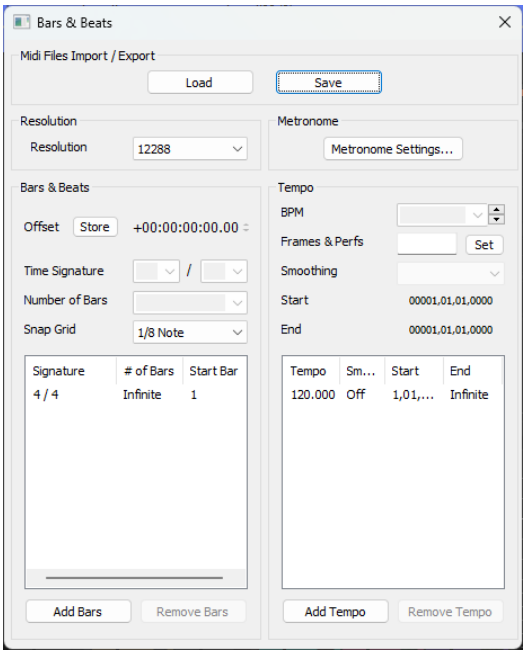


Frame Type combo box

Default is the format selected in **All Settings > Formats & Sync > Frequencies**. You may need one of the others in the context of non-linear editing workflows.

Bars & Beats Scale Ruler

As with the other Scale Rulers clicking in the header area pops up a context menu with show/hide for the Alternate, Feet and Bars & Beats Scale bars plus two extra options, **Bars & Beats Settings** and **Tempo Map**. The **Tempo Map** option shows the current Tempo Map below the **Bars & Beats Scale Bar**.



Midi Files Import / Export
Load
Save
Both buttons open a Browser Window to enable navigation to a file to load or a location to save to.
Note: Currently, when MIDI files of type 2 are imported, only the Track 1 Tempo Map and Time Signature is imported.

Resolution

Sets the clock resolution in Pulses Per Quarter Note, **PPQ**. The combo box offers a choice of values between 192 and 49152

Bars & Beats

Offset Offsets the **Bars & Beats** scale start from the main Time Scale. Value can be typed in the TimeCode register and or nudged up or down with the increment, decrement buttons.

Store Offsets the **Bars & Beats** scale start to the current Playhead Cursor position.

Note: Offsets can be negative or positive.

Time Signature and Bars

The bottom left panel displays a list of blocks of bars in the order they appear in the 'song'. The following settings apply to the currently selected entry in the list.

Time Signature Use the combo boxes to set the Time Signature

Number of Bars Type a value or choose **Infinite** from the combo box dropdown list.

Snap Grid Combo box offers a choice of **Off** or values between **Note** and **1/64 Note .**

Add Bars

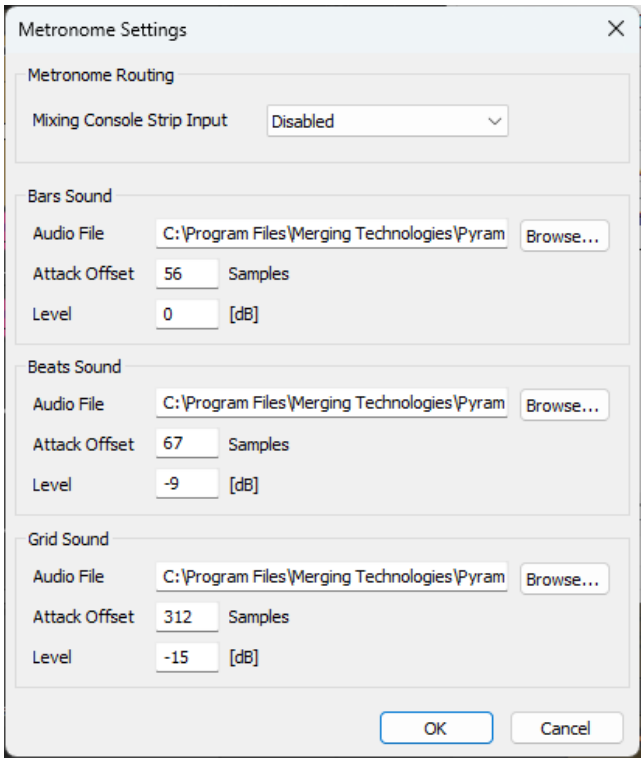
Click to add a new block of bars to the list above.

Remove Bars

Deletes the selected entry from the list above.

Metronome

Metronome Settings...



Metronome Settings dialog

Tempo

The bottom right panel displays a list of currently defined Tempos in the order they appear in the 'song'. The following

BPM, **Frames & Perfs, Smoothing**, **Start** and **End** fields reflect the values for the highlighted (selected) Tempo.

BPM Allows you to pick a tempo from the common values in the drop-down list, to increment or decrement in 1BPM steps with the up and down buttons or to directly type a value in the box.

Frames & Perfs An alternative method of defining a **Tempo** used by film composers. It is based on 24 frames per second, each frame subdivided into 8 perfs, or perforations.

	Thus a value of 24.0 results in a Tempo of 60BPM. Perfs are entered as decimals. E.g. 12.7. Illegal entries are rounded.
Smoothing	Enables values between **Note** and **1/64 .** to be chosen. (or **OFF**)
Start	The starting point for the Tempo can be entered by typing.
End	The end point for the Tempo can be entered by typing.

The Information pane shows all currently defined Tempos.

Add Tempo

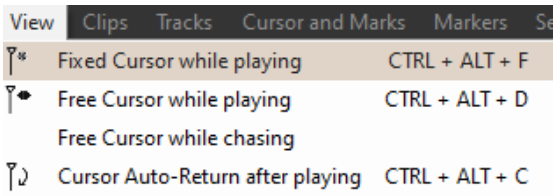
Adds a new Tempo

Remove Tempo

Removes the highlighted (selected Tempo) from the list.

Playhead Cursor Options

Four **Playhead Cursor** options will be found at the top of the **View** menu:



View menu (part)

Local Options

Fixed or Moving Playhead Cursor

The **Playhead Cursor** can be static with the **Timeline** moving (choose: **View > Fixed Cursor while playing)** or the **Playhead Cursor** can move while the **Timeline** remains static, 'Paging' when the **Playhead Cursor** hits the screen edge. (Choose: **View > Free Cursor while playing**).

Note: In **Fixed Cursor While Playing** mode, if **Play Selection** is invoked then Cursor switches to **Free Cursor** mode until **Stop** is pressed.

Chase Options

When **Free Cursor while chasing** is selected in conjunction with either of the local options the Playhead Cursor and Timeline position can be freely manipulated from the workstation whenever the TimeCode Master machine is in Stop, Rew, FF, Play, Locate, etc. as well as while chasing, but as soon as Pyramix has locked to incoming Time- Code, the cursor will "jump" to current TC. This mode is useful for Cinema mixing since it allows the Sound Editor to make good use of idle moments to perform quick edits and adjustments, anywhere in the Timeline and regardless of current TC position. This used to be the default behavior.

When **Free Cursor while chasing** is **NOT** selected, the Cursor will always be locked to TimeCode when Pyramix is set to chase, whether in Stop, Rew, FF, Play, Locate, etc. as well as while chasing. This mode is desirable for TV Post, where the Pyramix Playhead cursor and Timeline display should always reflect the current TC position.

Auto Return

Cursor Auto-Return after playing. When this is selected with either of the local options, the **Playhead Cursor** will return to the point at which **Play** began when **Stop** is selected.

Playhead Position

When **View > Fixed Cursor while playing** is selected, the Playhead position can be set in **Settings > All Settings > Application > Playback/Record** in the **Fixed Cursor Settings** section. The **Place of Cursor in Screen** combo box offers a range of choices between 1/10th and 1/2 of Screen.

Cursor & Timescale Ruler Toolbars

Above the **Timescale Ruler(s)** and below the **Project Editing Panel Toolbar(s)** are the **Timescale Toolbars** and **Cursor Toolbar**. When several Timescale Ruler Toolbars are displayed together each Toolbar will wrap into two rows as shown here:

Timescale Ruler Toolbars

Each Toolbar contains a number of Icons and TimeCode register boxes with increment / decrement **up** and **down** arrow buttons. The Cursor and Main Marker/Region Timescale Toolbars are associated with the main Timescale Ruler and Marker Tray. Other Timescale Toolbars appear by default when the Alternate Timescale, Footage or Bars & Beats rulers are visible. Any or all of these Toolbars can be Hidden/Shown using **View > Scales / Toolbars** and toggling individual Toolbars or **Hide All Toolbars**.

Increment / Decrement UP & DOWN Arrow Buttons
The **+** (plus) and **-** (minus) buttons to the right of the TimeCode registers increment or decrement by one unit per click of the smallest unit in the current register. E.g. Frames, Samples etc.

Modifiers

Click	**Frames**
Alt + Click	**Subframes**
Ctrl + Click	**Seconds**
Shift + Click	**Minutes**
Ctrl + Shift + Click	**Hours**
Ctrl + Alt	**Current Nudge Value**

Cursor Toolbar

CUR Click here to locate to the current Playhead Cursor position with the Playhead Cursor centered in the Timeline.

00:26:25:23 Current Cursor position register. Click to edit.

M Global Mute indicator. When unlit no Tracks are muted.(not related to the mixer mute)

M Global Mute indicator. When lit one or more Tracks are muted. Click on the lit indicator to cancel all active Mutes.

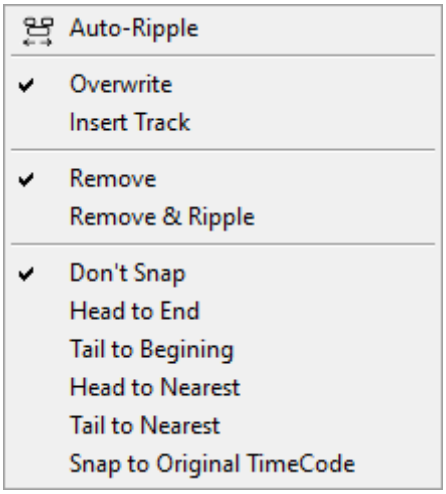
S Global Solo indicator. When unlit no Tracks are Soloed.(not related to the mixer solo)

S Global Solo indicator. When lit one or more Tracks is Soloed. Click on the lit indicator to cancel all active Solos.

Shared Mix When inactive, as here, the current Project's mixer is not shared with subsequently opened Projects.

Shared Mix When active, the current Project Mixer will be shared with Projects opened or created subsequently. **Please see: Mixer Sharing on page 294**

Overwrite / Remove This area indicates the current Edit Mode. Clicking on it pops-up a menu:



Timescale Ruler Toolbars

This shows the options selected currently with ticks. Click on menu entries to change the options.

Auto-Ripple Toggles **Auto-Ripple** On or Off

Overwrite When active Pasting a Cue(s) will overwrite any Cue(s) present on the target Track(s) for the duration of the pasted Cue(s).

Insert Track	When active Pasting a Cue(s) will split an existing Cue or Cues present at the Insert point to accommodate the Pasted Cue(s).
Remove	When active deleting a Cue or Selected Region leaves blank space. No subsequent Cues are moved.
Remove & Ripple	When active, deleting a Cue or Selected Region results in all subsequent Cues on the same Track(s) being moved forward by the same time as the time deleted.
Don't Snap	When active, moving a Selected Cue or Range simply moves it at will.
Head to End	When active, moving a Selected Cue or Range results in its beginning snapping to the end of the last Cue on the Track(s)
Tail to Beginning	When active, moving a Selected Cue or Range results in its end snapping to the beginning of the first Cue on the Track(s)
Head to Nearest	When active, moving a Selected Cue or Range results in its beginning snapping to the nearest Cue on the Track(s) or the Playhead Cursor or In/Out Marker.
Tail to Nearest	When active, moving a Selected Cue or Range results in its end snapping to the nearest Cue on the Track(s) or the Playhead Cursor or In/Out Marker.
Snap to Original TimeCode	When active, moving a Selected Cue results in it snapping to the Original Time-Code as stamped in the file.

Note: Whenever a mode is selected which can affect other Cues, e.g. **Ripple** then the label displayed in the Toolbar turns red.

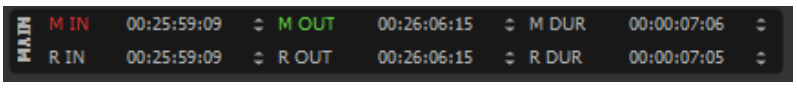
Other Timescale Ruler Toolbars

In all of the following Toolbars whilst clicking on the titles (M IN/ MOut etc):

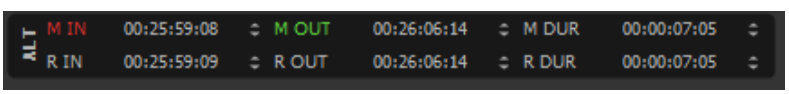
M IN	Centers the Timeline on the **In** Marker.
M OUT	Centers the Timeline on the **Out** marker.
M Dur	Zooms the Timeline to show the entire area between the **In** and **Out** Markers
R IN	Centers the Timeline on the beginning of the current Selection or **Range**.
R OUT	Centers the Timeline on the end of the current Selection or **Range**.
R Dur	Zooms the Timeline to show the entire area between the beginning and end of the current **Range** or Selection.

When values are typed into the **M Dur** or **R Dur** registers, the **In** value remains fixed while the **Out** is adjusted.

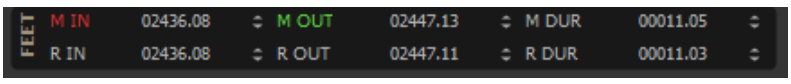
Main (Markers and Selected Range) Toolbar



Alternate TimeCode Ruler Toolbar



Film Feet Ruler Toolbar



Bars & Beats Ruler Toolbar

(clicking on the titles (M IN/ MOut etc)

M IN Centers the Timeline on the **In** Marker.
M OUT Centers the Timeline on the **Out** marker.
M Dur Zooms the Timeline to show the entire area between the **In** and **Out** Markers
R IN Centers the Timeline on the beginning of the current Selection or **Range**.
R OUT Centers the Timeline on the end of the current Selection or **Range**.
R Dur Zooms the Timeline to show the entire area between the beginning and end of the current **Range** or Selection.

When values are typed into the **M Dur** or **R Dur** registers, the **In** value remains fixed while the **Out** is adjusted.

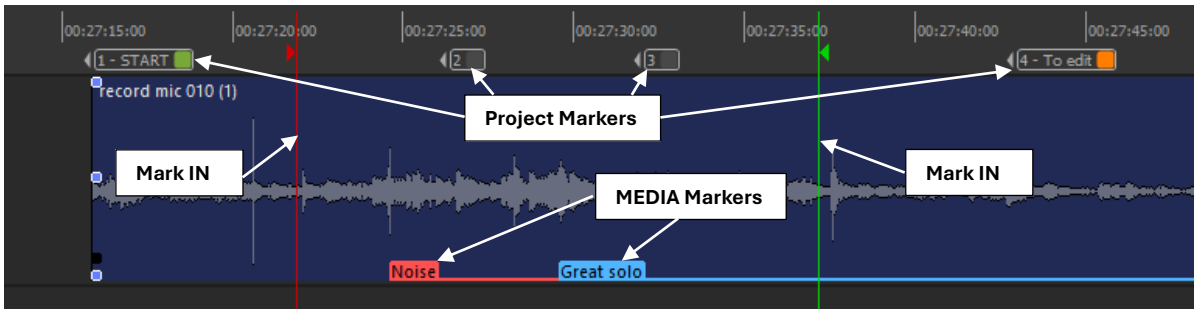
Start The **Start** register enables an Offset to be entered for the first Bar
Metro Clicking on **Metro** opens the **Metronome Settings** dialog. Clicking on the label to the right toggles through **On**, **Pre-Roll** only and **Off**.
Volume Below **Metro** the volume slider sets the metronome click level.
BPM Clicking **BPM** enables an alternative value to be entered. The **BPM** counter displays and allows modification of the tempo map section where the Cursor is currently.
SG Toggles Time Signature
4/4 Click on the Time Signature displayed currently to enter and alternative.
PRL Click on the number adjacent to **PRL** to enter a Pre-Roll value.
CLK IN When **Click In** is set (to something other than 1, 1, 1) the Pre-Roll pre-counts to Click In Bar/Beat, otherwise pre-counts to the first Bar.
Lock (chain) Symbol Toggles between **blank** (off), **MRK** (**In** Marker) and **RGN** (**Region)** Click In/Out are then linked to the Markers or selected Region automatically.
CLK OUT When **Click Out** is set (to something other than 1, 1, 1) the Post-Roll pre-counts to Click In Bar/Beat, otherwise pre-counts to the first Bar.

Markers

Pyramix has several types of Marker. For information about Track Group Markers please see: **Track Group Markers on page 134**. For Media Markers, **please see: Media Markers on page 135** and for CD and SACD Markers **please see: CD Markers on page 616** and the SACD Production Guide.
The **Cursor & Markers** and **Markers** menus, Toolbar and keyboard shortcuts all offer methods of placing Markers and using them for locating etc. The menu entries should be self explanatory.
Please see also : Cursor & Marks on page 734 and **Markers on page 737**
Up to 48 Markers can be attached to shortcut keys and/or mapped to a hardware controller.

Project Markers

Project Markers are shown in a **Markers Tray** just above the TimeLine Tracks display.



Markers

Placing Project Markers
Markers are placed at the current Playhead Cursor position in the Timeline by either [**NUM9**], **Markers > Add marker to Cursor** or in the **Markers** Tab window.

Pop up naming marker at insertion
By activating **Markers > Prompt for Marker Name at insertion**, a pop up will invite you to provide a name to the new marker and a colour

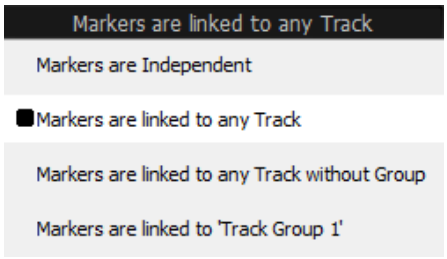
Renaming or Deleting Markers in the Tray
Right-click a Marker in the Tray to pop a context menu with choice of **Rename Marker** or **Delete Marker**.

Moving Marker
Click and drag on the marker moves it along the timeline

GoTo Marker
Right or Left-click in the Marker Tray above the Track Header to pop up a list of all Markers in the current Project. Click on a Marker in the list to locate the Playback Head cursor to it.

Tips : By activating **Markers > Auto-Select Marker before Cursor**, will allow to very rapidly jump the playhead back to the previous marker to playback from important points that have been previously marked in your project. **Markers >Cursor to Selected Marker** [**SHFT+ENTER**]

Markers Linking
The **Markers Linking** drop-down list menu is at the top of the **Markers Tab Window**.

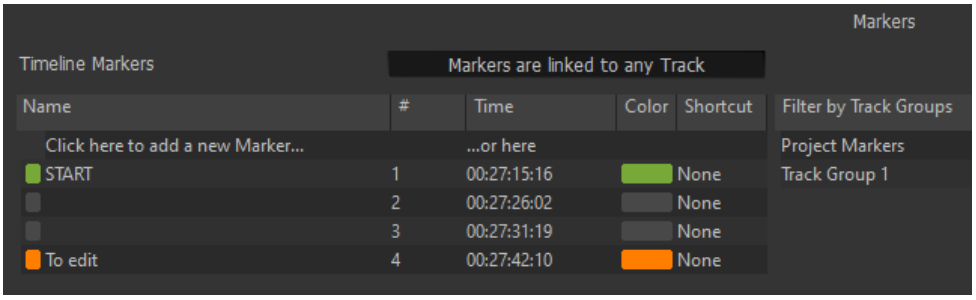


Markers Linking drop-down list menu

The selection made here determines the behaviour of markers when Tracks are edited.
Markers Independent (markers are locked to the scale)
Linked to Any Track (markers follow any Track operation)
Linked to Tracks without Group (markers follow any Track that is not a member of a group)
Linked to 'Track Group 1'etc. (Markers follow any Track which is a member of the Track Group selected here.)

Editing Project Markers
Project Markers can be edited the following ways:

- Click and drag to move Markers directly in the timeline Marker Tray..
- With the mouse over the Marker in the tray right-click pops up a context menu with **Rename Marker** and **Delete Marker** options.
- In the **Timeline Markers** section of the **Markers** Tab window.



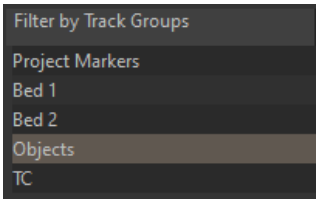
Timeline Markers section of Markers tab

See: Markers Tab Window on page ---

Track Group Markers

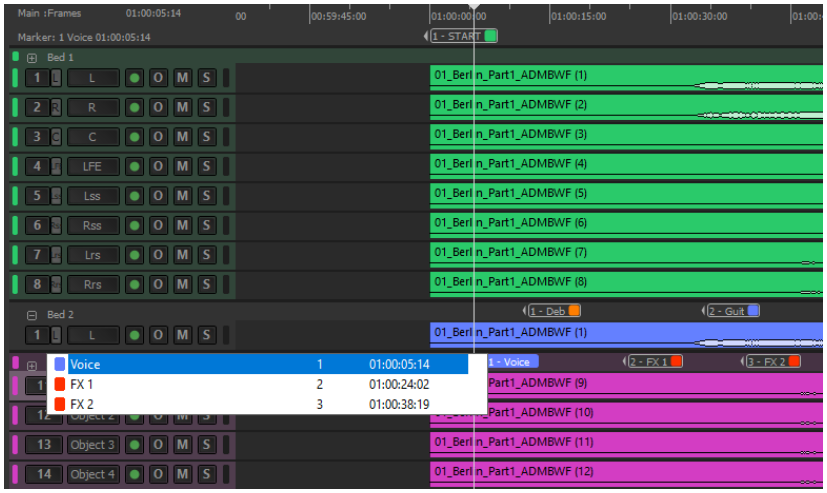
Filter By Track Groups
Separate lists of Markers can be created for the Project as a whole and for individual Track Groups.
The **Filter By Track Groups** column shows **Project Markers** and all the **Track Groups** added to the Project. Timeline Markers can be created in a specific Track Group.
For example:

1. Create a Project with Tracks.
2. Create two or more Track Groups in the **Track Groups** Tab window.
3. Add Tracks to each of the Track Groups.
4. Turn **Free Markers** on (**Yes)** for each Track Group.
5. Add Markers with Group 1 selected in the Timeline (Either by selecting one of the Tracks belonging to the Track Group in the Timeline or by clicking on the Track Group where it is listed under **Filter By Track Groups** in the Markers Tab window.)
6. Repeat step **5** for the other Track Groups.



Filter by Track Groups section of Markers tab

Now you can use the Filter By Track Group entries to filter the Markers displayed in the Markers Tab window. Clicking on Project Markers shows the list of Markers belonging to the Project without any of the Markers belonging to Track Groups. Clicking on any of the Track Groups shows only the Markers belonging to that Track Group.



Track Group Markers in the Timeline

Markers created in Track Groups are shown in the Group separator tray above the Track Group in the Timeline. **Clicking on the Track Group Name** in the Timeline pops up a list of all markers created in the Track group. These function as locators.

Media Markers

Overview

Media Files and Libraries Master Clips can store Markers. These are called **Media Markers** to differentiate them from the Timeline Project and Track Group Markers. Media Markers are useful for many purposes, e.g. marking good, bad or indifferent takes within a long continuous recording or marking the peak point of a car or plane pass etc.. They are attached to the Master Clip or to the Media itself.

Characteristics

- Media Markers can be added to any Media File, regardless of format.
- Media Markers are stored in the Media Object or Master Clip in the Media Manager, Libraries and in Projects referencing the Media.
- Multiple Clips referencing the same Media share the same Markers within the same Project or Library.

Note: When recording into the Active Project Media Markers will not be added if any Clip or Clips is/are selected in the Timeline.

Where Media Markers Are Saved
Media Markers are stored in the Media Object or Master Clip in the Media Manager, Libraries and in Projects referencing the Media. When saving a Project with two different versions (with **Project > Save As** for example), the Media Markers within both versions can evolve differently as they are saved in the Projects and/or in different Libraries, but: Media Markers can be saved along with the physical Media File by using the menu item **Markers > Update Media Markers to Files**. A file with the same name as the physical Media File with an **.mmd** extension is saved in the same location as the Media Files which contains all the Markers for this Media.

When adding Markers to a Media being recorded the .mmd file is automatically saved automatically when the recording is stopped.

When mounting a Media file with no reference to any Projects or Libraries, its associated Markers are only available in its associated .mmd file.

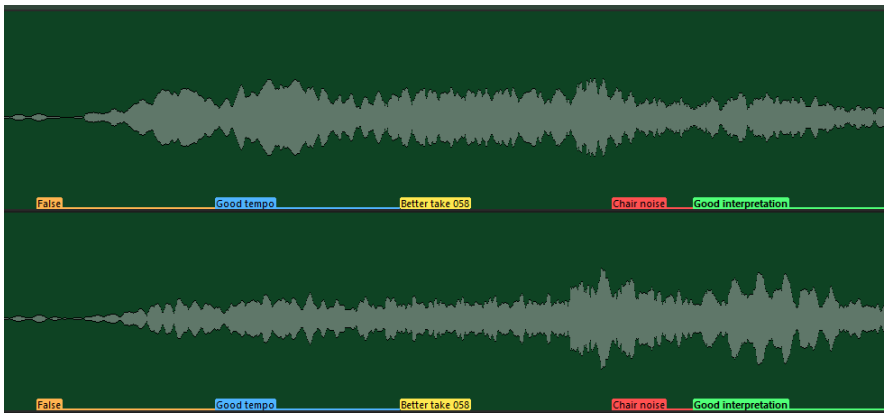
Clips in a Project or Master Clips in a Library carry a copy of the Markers and can be edited separately. The original version of the Markers created during recording can be retrieved from the .mmd file. This .mmd file can be updated after modification of the Markers with the menu **Markers > Update Media Markers to Files**, as explained above.

Contents

Media Markers contain:

- A Number (not editable) The first Media Marker in each recording starts numbering at **1**.
- A TimeCode (the offset from the beginning of the Media).
- A Name.
- A Comment.
- A Rating (a choice of: **Excellent**, **Good**, **OK**, **Bad**, **Ridiculous** or **Custom**).

Display



Media Markers in the Timeline

Media Markers are displayed:

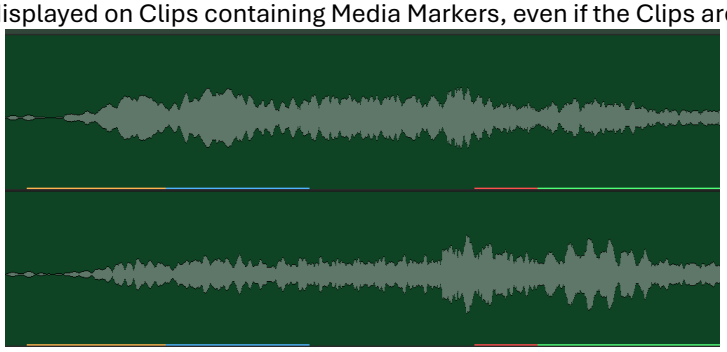
- In the Media Manager or Library Trimmer (not editable here)
- In the Timeline in Clips referencing a Media containing Markers (editable in this case) but only when the Clip(s) is(are) selected and the menu item **Markers > Display Media Markers** is active.

The Media Markers have a color based on their Rating:

- Excellent = Green
- Good = Blue
- OK = Yellow
- Bad = Orange
- Ridiculous = Red
- Bad Take = Gray
- Custom = Use definable color and name

- Markers outside Clip boundaries (trimmed Clips) are displayed only if the menu item **View >Show Media** is enabled.

A Rating Line is displayed on Clips containing Media Markers, even if the Clips are not selected.



Media Markers - Rating Line

- This enables sections of a recording with a good or bad rating to be identified easily.
- The Rating Line can be shown/hidden using the menu item **Markers > Display Media Markers Rating Line**

Note: When the Rating Line and Media Markers are hidden then **Nudge Cursor to Next/Previous** Edit and Nudge Clip to Next/Previous Edit ignore Media Markers.

Tip! Adding Media Markers in conjunction with the Rating Line

A nice feature is the possibility of mapping, for example, the **Add Media Marker with Rating Excellent** function to a Key of your choice, and then mapping the **Add Media Marker with Rating OK** to the same Key but on **Key Up**. Do the same with **Add Media Marker with Rating Good**, **Add Media Marker with Rating Bad** and **Add Media Marker with Rating Ridiculous** to three other Keys.

Pressing any of these keys will actually "color" your recording e.g. green (Excellent) as long as the key is pressed and resume "normal" yellow (OK) when released. This allows for marking regions of the recording that will be recognised easily during editing when the Rating Line is displayed.

Rate Selected Region

This allows a rating to be applied to a selected region using the menu item **Markers > Rate Region**.

When the command is activated a Media Marker with the chosen rating is placed at the beginning of the region selected. A second Media Marker is placed at the end of the selected region with the rating **OK** or whatever the former rating at that location was. E.g. an area is selected in a Clip rated **Good**. Under **Markers > Rate Region Excellent** is selected. A Media Marker for **Excellent** is placed at the beginning of the selected region and a Media Marker for **Good** is placed at the end.

Note: Any pre-existing Media Markers within the selected region are deleted.

Rate Playback / Record Zone

This enables a Region / Zone in a selected Clip to be rated while it is being recorded or played back.

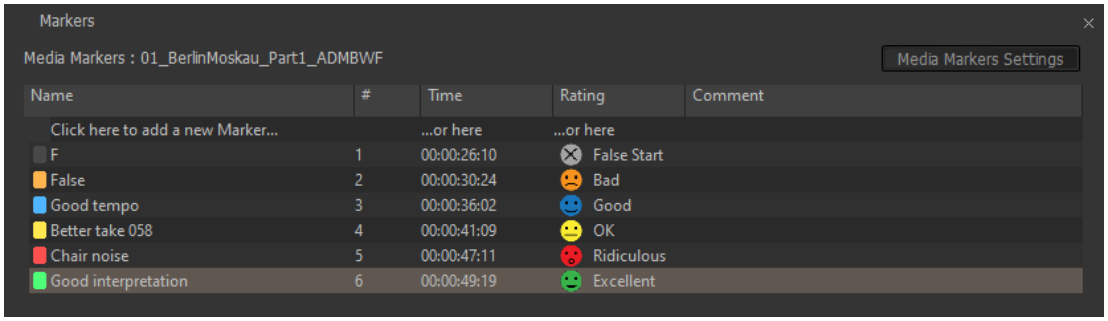
Note: This only works with short-cut keys while recoring or playing back. The corresponding rating will be applied while the shortcut key is depressed and will cease to be applied when it is released. Ratings are bound to Keys in the Keyboard Shortcut Editor. **Please see: Customizing Keyboard Shortcuts on page xx**

Editing Media Markers

Media Markers can be edited the following ways:

- Grab and move Media Markers directly on Clips.
- Add Markers to the selected Clip with the menu item **Markers > Add Media Marker to Cursor**
- Add a Rating based Media Marker with the menu **Markers > Add Media Markers Special > Add Media**
- **Marker with Rating XXX**
- Delete a Media Marker with the menu item **Markers > Delete Selected Media Marker**

In the Marker Tab:

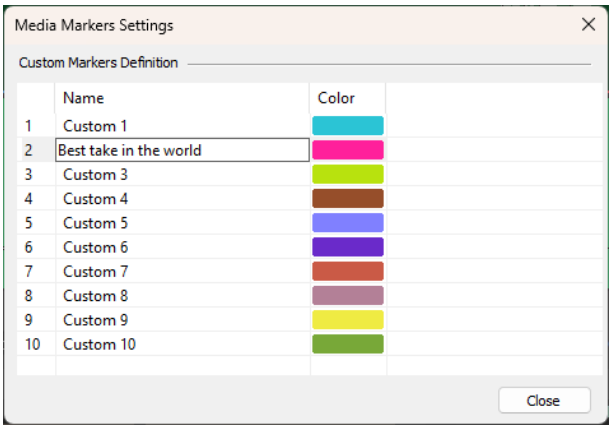


Media Markers section of Markers tab

- The selected Clip name is shown at the top.
- The Media Marker section displays the list of Media Markers in the Clip selected currently.
- Media Markers can be added, deleted and modified here like standard Markers.
- To change a **Rating** click the marker you wish to change in the **Rating** column. A list drops-down with the standard ratings and the ten custom ratings. (See immediately below.)

Media Markers Settings - Custom Markers

Clicking on the **Media Markers Settings** button opens the **Media Markers Settings** dialog:



By default the 10 Custom Markers are labelled **Custom 1** to **Custom 10**. Click in the field and type to rename the Marker. Clicking on the Color pops-up a color picker where any color desired can be selected.

Note: Custom Media Markers have no effect on the Rating Line when inserted between standard Media Markers.

Media Markers - Undo

Undo /Redo operates as normal when Adding, Deleting and Modifying Media Markers of an existing Clip/Media File.

When Adding, Deleting and Modifying Media Markers while recording a Media File:

- In the Timeline: Undo / Redo works as normal while the recording continues. When the recording is stopped nothing that has been done during recording can be undone.
- With Background Recorders whose recordings are being edited in the Timeline in the active Project: **Undo / Redo** works both during recording and after the recording is stopped.
- With Background Recorders whose recordings are NOT being edited in the Timeline of the Active Project (I.e. when using the Take Logger.) There is NO undo for Media markers.

Editing Media Markers During a Recording in the Timeline:
If there is a Recording happening in the Project Timeline (and there are no selected Clips),the Marker Tab displays the Markers for the current Recording.

Media Markers for the current Recording can be added, deleted and modified exactly like for the selected Clips.

Media Markers created during a Recording are saved automatically in an **.mmd** file in the same location as the recorded file.

Note: This is not available in Dubbing Mode.

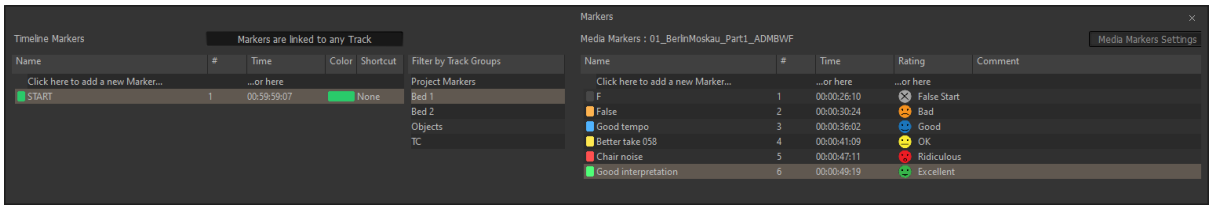
Editing Media Markers during a Background Recording:
Media being recorded with a Background Recorder can be added Media Markers by using the **Edit while Recording** option.

The growing Media in the timeline being recorded by a Background Recorder can have Media Marker added in exactly the same way as any other Media placed in the Timeline.

Media Markers created during a Background Recording are saved automatically in an **.mmd** file in the same location as the recorded file.

Markers Tab Window

Markers can also be added and managed from within the **Markers** Tab Window.



Markers Tab Window

Different lists of Markers can be edited by selecting the desired **Track Group** or the main **Project Markers** list in the **Markers** Tab Window. Markers are numbered in ascending order by their position in time. If a Marker is moved before or after another Marker, the affected markers are automatically re-numbered.

Clicking on the first entry in the **Name** or **Time** Fields **'Click here to add a new Marker... or here'** Adds a new Marker at 00:00:00:00 This value can be edited in the usual way.

Marker colors are user selectable. Clicking in the **Color** field drops down a list box with all the available colors.

Double-clicking on a Marker's Name Field jumps the Playhead Cursor to the Marker.

Double-click with CTRL pressed plays from the marker TimeCode

Double-click with SHIFT pressed plays from the marker TimeCode with the first Preroll. This also applies to CD markers

Right-click to open a menu that enables Markers to be **Cut / Copy / Paste**d between Groups or Projects.

Jog / Shuttle

Shuttle
The transport can be shuttled with audio output at up to 8 times speed.

Jog Wheel Settings

Jog Wheel Mode
Jog Wheel Mode is selected in **Machines > Controllers**.

Jog Wheel Settings
Jog / Scrub parameters are set in **Settings > All Settings > Application > Jog / Chase**.

Auto Jog on move
When checked moving the jog-wheel enters **Jog** mode. When **Auto-Jog** is enabled, all Jog Commands are processed a slightly different way. Pyramix temporarily stops chasing and starts Jogging while sending Goto commands to the External Machine. The audio is therefore perfectly scrubbed and the external machine follows the audio as well as it possibly can. When the user stops Jogging, Pyramix automatically returns to chase mode.

Geared Jogging
When checked the jog wheel "gearing" I.e. the amount you have to turn the wheel for a given amount of cursor movement is related to the current Zoom level.

Jog Speed ceiling
Sets the maximum jog speed from a choice of **1X**, **2X**, **4X** or **8X** play speed

Jog Sensitivity
The value typed in the box (in seconds) determines the number of seconds the transport will move per revolution of an attached physical jog wheel.

Flywheel responsiveness and inertia
Responsive follows the actual movements as sent by the jog wheel. **Smooth** passes the actual movement through a smoothing filter. So, when the slider is set to **Responsive** the **Smoothing Filter** parameters have no effect. For sound to picture work where tight sync to picture is required use a setting biased to **Responsive**. For a more pronounced flywheel effect choose a **Smooth**er setting. The Middle position is a good starting point.

Jog - sensitivity [0.33] second(s) per revolution
Sets the time moved in one revolution of the jog wheel. Type the required value in the box.

Shuttle - sensitivity [2] revolution(s) for nominal speed
Sets the fraction of a revolution or number of revolutions required to maintain nominal speed. E.g. an entry of 0.25 will require a quarter of a turn clockwise to achieve nominal speed.

Navigate - sensitivity [3] revolution(s) to traverse the timeline
Navigate is silent jog mode. Sets the number of revolutions of the jog wheel required to traverse the visible timeline. I.e. the actual speed varies with the zoom setting.

Geared Jog mute when timeline view range is > 00:00:10:00
Audio will be muted when the TimeLine view range exceeds the value in the register.

Fine Jog sensitivity factor [ ]
Sets the fraction of the regular Jog Sensitivity Setting that will be invoked when **Fine Jog** is selected in the **Machines > Controllers** menu.

Mouse Scrubbing Settings

There are two scrub modes, **Analog Tape Mode** and **Repeat Loop Mode**. Check the appropriate box for the required mode. The length of the loop in **Repeat Loop Mode** is related to the base sampling frequency so the loop will be 116mS long at 44.1, 88.2 and 176.4 kHz or 106ms at 48, 96 and 192 kHz.

Analog Tape Mode gives a similar response to 'reel-rocking' on an analogue tape machine.
Jog anyway When lit, **Jog Mode** is used regardless of how much audio is visible in the **Timeline**
Shuttle when more than 10 [s] is shown in the Timeline When lit, if there is more than 10 seconds of audio visible in the Timeline scrub will be in **Shuttle Mode**
Repeat Loop Mode continuously repeats a short loop starting at the cursor position.

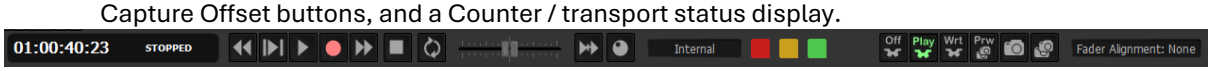
Vari Speed Audio Quality

High when playing less than of equal to [6] track(s)
Best when playing less than or equal to [2] track(s)
MassCore : the varispeed quality is set automatically according to the current core load.
Native : the playback quality is defined by the playback streams numbers set above.

Fast Speed Settings
F.FWD and REW nominal speed ratio [20]
Type in the box to set the nominal **F.FWD** and **REW** speed. (I.e. a value of **20** means 20 times sync play speed)

Transport Controls

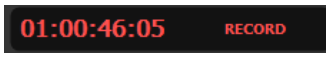
The **Transport Bar** brings together the most commonly used Transport Controls, Chase and Capture Offset buttons, and a Counter / transport status display.



Transport Bar

From left to right, the controls are as follows:

The counter shows the current **Active Machine** position and transport mode.



Counter in **Record** mode.

The **Rewind** button moves the **Active Machine** at an accelerated speed backwards. A second press doubles the speed.

The **Play Selection** button plays the current highlighted selection area when the **Active Machine** is the **Internal Machine** (Pyramix).

The **Play** button plays the **Active Machine** at normal speed forward. A subsequent press **Pause**s playback and another **Restarts**.

The **Record** button puts the **Active Machine** into **Record** mode.

The **Fast Forward** button moves the **Active Machine** at an accelerated speed forwards. A second press doubles the speed.

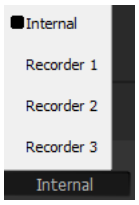
The **Stop** button stops playback. (or recording, Fast Forward, Rewind etc)

The Loop **Play** toggle button puts the **Active Machine** into a Loop Play Mode, continuously plays between the current **Mark In** and **Mark Out** points. (for loop between clip selection please go to page xxxx)

In the default, Shuttle, mode the Shuttle Control slider shuttles the Play Head forward (right) or backward (left) at up to 8 X play speed. (Depending on the **Jog Speed Ceiling** Setting in **Settings > Jog Chase**. When **Machines > Controllers > Jog Wheel Mode – Pitch** is selected the slide varies playback speed plus or minus 25% when the transport is in **Play**. When the transport is not in **Play** the slider operates in normal, Shuttle, mode.

When the **Chase** toggle button is active, the **Active Machine** will only play back when valid time code is detected on the chosen TimeCode input port.

The **Controllers Online / Offline** button. (Grey = Online Red = Offline) Toggles external hardware controllers **On** and **Off** line.

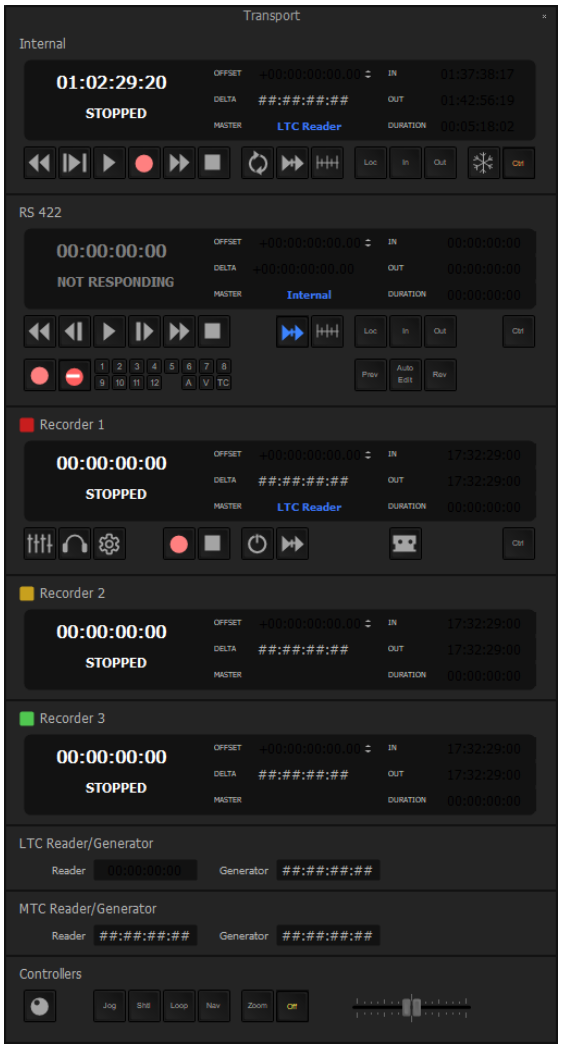


The drop-down list selects which machine is currently controlled. Select **Internal** from the list to ensure you are directly controlling the **Pyramix Composition Play Head** and not some external device (I.e.RS-422 Sony 9-pin P2 controlled machine) or any **Background recorder**

The coloured buttons indicate the presence of a Background Recorder or recorders. One button will be shown per Background recorder. Clicking on a button switches the Transport Bar controls to the associated Background Recorder. **Please see also: Background Recorders on page XXX**

To the right of this is an area where any of the Floating Tool Palettes can be 'Docked'. By default this will have the **Automation** Toolbar docked. **Please see: Global Dynamic Automation Modes on page xxx**

Transport Control Panel



Transport Control Panel floating Window

Note: This Window contains a set of transport controls for each machine installed and enabled with the **Internal** Transport (Pyramix) at the top.

Below the machines – **Internal**, **External(s)** and **Background Recorders** are displays for LTC and MTC (and MIDI or VT2 when applicable) TimeCode Sources and at the bottom of the panel there are controls which indicate and control hardware Remote Controllers Online/Offline (red = Offline), Jog-Wheel Mode, and Shuttle. **By default only the Internal machine is displayed**

Clicking on the white machine name label toggles the individual area between collapsed and full. (in this screenshot Recorder 2 and Recorder 3 are collapsed)

Important! For details of machine installation and settings **Please see: Machine on page 813** and for details of these Transport Controls
Please see: Internal / External Machine panels – Features on page 591

Zooming and Panning

The **Project Editing Panel** allows two kinds of zoom: horizontal or **Time Scale** zooming; and vertical or **Track Height** zooming.

Time Scale Zoom and Pan

Icons on the **Title Bar Left** zoom in or out at the current Play Head location.

The **Fit in window [Alt 1]** icon on the Left Title Bar automatically adjusts the horizontal scale to fit the selected area inside the Project Editing Panel with a small margin.

The **Previous zoom [Alt 2]** icon restores the horizontal scale to the previous size.

Zoom In [Alt 3] and

Zoom Out [Alt 4] at the position of the **playhead**

Holding down the **Alt** key, then selecting an area of the **Composition** by clicking and dragging the mouse to the left or right zooms in horizontally on the selected area.

Similarly, an area of the **Composition** can be selected by clicking and dragging.

The **Scrollbar** beneath the **Tracks** Pans the view of the Timeline horizontally left or right.

Track Height Zoom

1, **2**, **4**, **8**, **16**, and **A** buttons at the bottom left of the **Project Editing Panel** automatically scale the vertical Track size so that 1, 2, 4, 8, 16 or All (as many as possible given the vertical space) **Tracks** fit in the vertical space allocated to the **Project Editing Panel**.

The horizontal Scrollbar adjacent to these buttons enables continuous adjustment of the Track height.

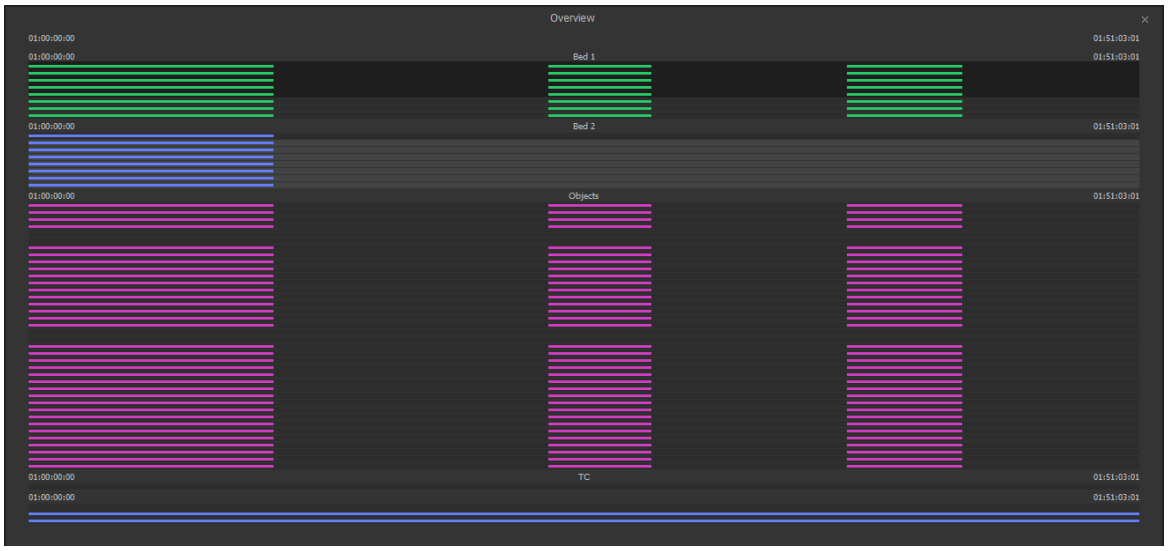
Scroll Wheel for zoom

It is well worth while using a three-button mouse with a scroll wheel.

Scroll	Scrolls vertically through the Tracks shown in the Project Editing Panel
Scroll + Ctrl	Scrolls the Timeline (left / right)
Scroll + Alt	Zooms the Timeline timescale (at the position of the mouse pointer)
Scroll + Shift	Changes the Track height (or the track group if enabled)

Note : for zooming in/out at the played position, use the shortcuts and at the mouse position, use the middle mouse button. The scroll wheel modifiers cannot be personalised.

The Overview



Overview Tab Window

The Project Management Panel **Overview Tab** offers a powerful and simple means of navigating around the Project Editing Panel.

Overview displays a graphic representation of the entire current **Composition**, showing the location of all **Clips**. A shaded gray box indicates the location and zoom range of the part of the **Composition** which is currently displayed in the **Project Editing Panel**. **Clip**s are shown as rectangles in the same color as their background on the Timeline.

Click anywhere in the **Overview** to center the Project Editing Panel display on that point. Click and drag on the shaded gray box to move the section of the Composition shown in the Project Editing Panel without changing the current horizontal zoom. The zoom range of the Project Editing Panel can be adjusted by dragging the edges of the shaded gray box in the **Overview**. An alternative method for adjusting horizontal zoom is to press the **Alt** key while clicking and dragging across the desired range for the zoom, just as you can do directly in the Project Editing Panel itself.

Virtual Transport 2 TO BE REMOVED

Recording and Acquisition

Getting Audio into Pyramix Virtual Studio

There are four primary methods of getting audio into Pyramix: You can record audio directly into the Timeline of a Pyramix Editing Project, record audio using a Digitizing Session, use Background Recorders or you can import audio files existing previously.
Please see also: Digitizing Sessions on page 165, Background Recorders on page 150 and **Importing Audio Files into Pyramix Virtual Studio on page 162**.

Check Sync

Before attempting to record any audio please check Pyramix and the audio source(s) are synchronized as you intend.

MassCore
Verify **PTP sync** (green) under RAVENNA.

Native
Project sampling rate should match ASIO/ WMAS interface sampling rate

File Format and Disk Limitations

File Size Limitations
By design legacy SD2, WAV or BWF files were limited to a maximum of 2GB due to their 32bit signed addressing (thus 31 available bits) formats, while 32bits unsigned addressing AIF files are limited to 4GB. Please keep this in mind when recording and/or exporting to any of these formats, the 2GB/4GB limit might in fact be quite close, particularly when working with high sample rate multitrack files.
The WAV file format accommodates RIFF64 removing the 2GB limitation. **Please see: WAV and BWF on page 492**

Hard Drive Limitations
A very similar 2GB/4GB* limit can also be encountered the hard way when attempting to write large files, even in PMF format, onto storage units (hard drives, memory cards etc.) formatted using an old 32bit file system such as FAT32 or HFS.
Nowadays NTFS format have a much higher disk or file size limit (more than 200 TB), on 64 bit operating systems. *The official limit is 4GB, but serious trouble can start at around 2GB.

> **Note:** For all standard recordings use BWF or PMF (that can be exported on a later stage as BWF if required) to avoid any kind of limitations. Interleaved BWF is today's professional interchange audio PCM file format recognized by all professional players and DAW's.

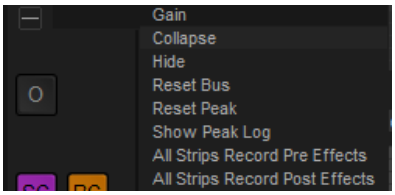
Recording Audio into a Pyramix Virtual Studio Project

Start a new Project, a Template or open an existing one. Make certain the **Mixer** sample rate and sync source is set as desired. You will need to configure at least the same number of **Mixer** channels as **Tracks** you wish to record.
Before beginning audio capture, check or select appropriate record settings. Open the **Settings > All Settings > Project** > **Record** page (alternatively Right Clik on a track arm button of any track) There are many settings in this dialog page, but for now you need only be concerned with; **Destination Drive** (**Media File** folder), **Resolution** (bit depth or word length) and **Format** (file type). As previously mentioned, unless you have a specific reason for using a different format we recommend using **BWF or PMF** format.

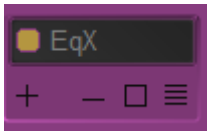
> **Note:** These settings are completely independent of the settings for **Mix-down** and **Render**.

Record Source Before or After Effects

The record source can be before or after any effects in the Mixer Strip. This can be set globally or individually per strip.



Globally; click on GAIN on the right side of the mixer



Individually; click on the 4 lines symbol of the desired strip

Note: Record post Effect is not supported in Dubbing Record mode.

Track Record Modes

Each **Track** has a tri-state **Record Ready** toggle button, located to the left of the **Track** itself in the **Track Information and Setup Area** or on the related mixer strip.

Tip: Right clicking on a Track arming button opens the **Settings > Project** page immediately on the **Record** page. (this is not valid for the mixer track arming)

Play

The **Green Dot** in the **Track Header** indicates **Record Safe** mode, the default when **Tracks** are newly created. When in this state, the **Track** cannot be recorded to.

Record Ready (Manual)

Click on the **Green Dot** once to toggle to **Record Ready** mode. This is indicated by the dot turning into the **Red Dot**. The Track will now go into **Record** mode immediately when the **Master Record** button is pressed in the **Transport Strip** or **Transport window**.

Tip: Right clicking on the record ready button opens the target record window

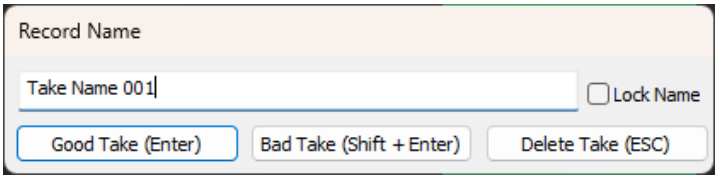
Record Punch In (Auto)

Alt-Click on the **Red Dot** to toggle to **Record Punch In** mode. This is indicated by a **Red Dot flanked by 2 red vertical lines**. In this mode, when the **Master Record** button is pressed in the **Transport Strip** or **Transport window**, the **Track** will stay in **Play** mode until the **current Selection in the timeline** is reached, and if noting selected the **Mark In** point is reached, then the **Track** will go into **Record** mode. It will stay in **Record** mode until the current the **end of the selection** or if nothing selected, the **Mark Out** point is reached.

After Recording

Default settings is to open the below dialog box at the end of the recording to accept or cancel your recording **(NO UNDO IS POSSIBLE)**. New recordings will be processed according to the settings made in the **Settings > All Settings > Project > Record** page. **Please see: Record on page 781**

If the **Prompt for name after recording** box is checked the **Record Name** dialog appears when the recording is finished and the transport stopped.



Record Name dialog

Type a name for the recording (or leave the default) then select one of the button options.

AutoPunch Mode

AutoPunch when Chasing TimeCode
If Tracks are set to **Auto-Punch** mode (**Alt+Click** on Rec Ready button) then the system will start recording (after locking to TC) when it reaches the **Mark In** point and punch out when it reaches the **Mark Out** point.

If the Mark In is located before the current location (and the Mark Out far after) then the system will immediately record once locked and stop recording when unlocking.

Recording from a tape with Discontinuous TimeCode
Pyramix AutoPunch Mode makes this a simple operation.

- Place the Mark In at 00:00:00:00 and Mark Out at 23:59:59:24 (default values for a new project)
- Connect LTC Out from the tape machine into Pyramix
- Set Chase mode to **HARD CHASE**
- Rewind the tape
- Press Play on the tape machine

Each time a valid TC is encountered Pyramix will lock and start recording a new Clip, then stop when the timecode stops or jumps. A separate media will be created for each continuous section of timecode on the tape.

SafetyRecord Mode

Pyramix is equipped with a Safe Record mode for the Internal Machine.
Safety Record is turned off by default. It can be activated by selecting **Machines > Internal Machine >Safety Record**. When this mode is active an **S** is superimposed on the Transport Controls Record button.

Once a recording has begun the only way to stop it is to go to the Menu and de-activate **Safety Record** mode.

Apart from this no key presses, mouse clicks or external control inputs will **stop the recording**.

> **Note:** It is possible to assign a **Keyboard Shortcut** to the **Safety Record** toggle. For maximum security, it might be wiser not to, or at least to assign a complicated one.

Background Recorders

Pyramix is equipped with a very powerful **Background Recorder**. Up to four Background Recorders may be set up with one or two sets of record locations and parameters per recorder. (Format, Media File Count, Waveform Media destination and edit while recording settings.) Each Recorder has its own Mixer. This is configurable in exactly the same way as the 'normal' Pyramix Mixer. The default mixer has 8 strips for 8 track recording. To record greater track counts reconfigure the mixer with the number and type of strips required.

Typically, Background Recorders will be used in the following ways:

- When recording a concert a backup or backups can be recorded simultaneously.

- In live broadcasting. While recording the recorded file is accessible and can be output for transmission with a few minutes delay for safety reasons.
- Archiving - record multiple sources and manage the process from a single interface without the need to switch between digitizing sessions.
- Multitrack recording without the distractions of the Timeline.
- Pre-buffering enables up to a minute of audio to be recorded *before* the record button is pressed.

Editing While Recording

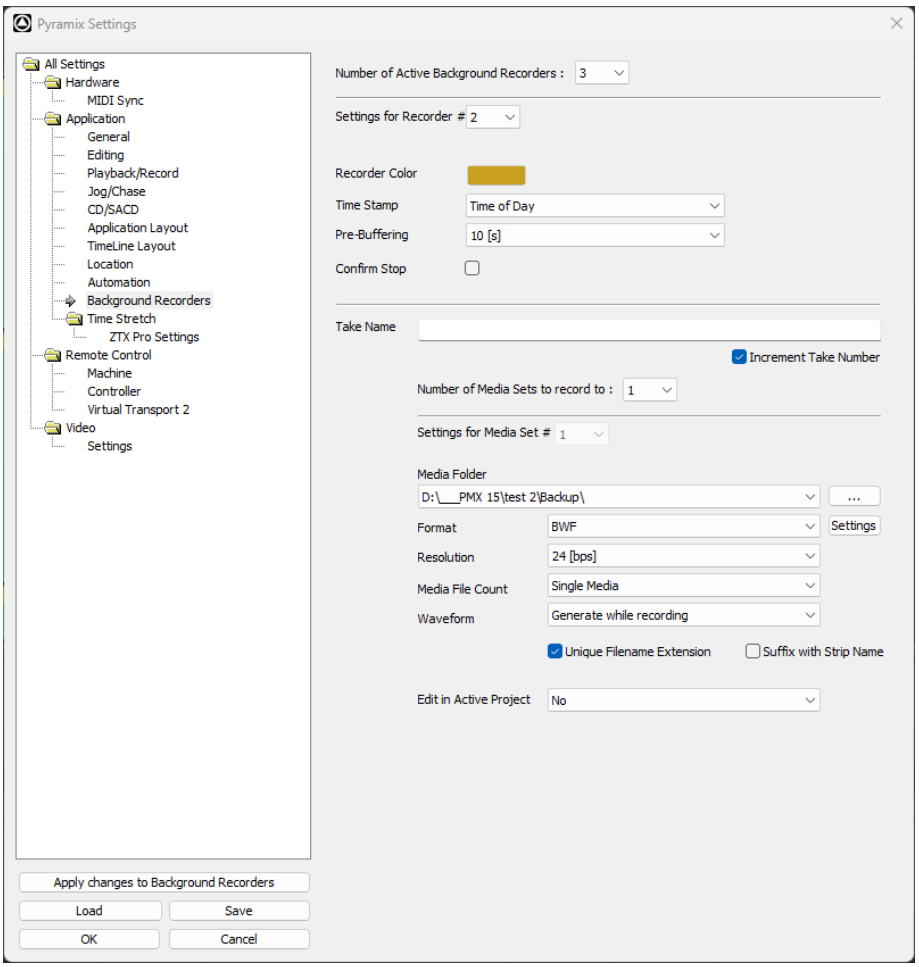
Clips can be edited while they are still recording. This will be useful in the situations above and also for any application where a lot of voice is recorded. E.g. in radio, when recording talking books and anywhere fast turnaround is a priority.

- Record two or more wild voice-overs and edit while still recording.
- Transfer from a linear master tape and begin clean-up and eq while the transfer continues.

Set-up and Operation

Set-up

Background Recorders are set up in the **Settings > All Settings > Application > Background Recorders** page.



Settings > All Settings > Application > Background Recorders

Please click here to see: **Background Recorders on page 809**.

Mixer

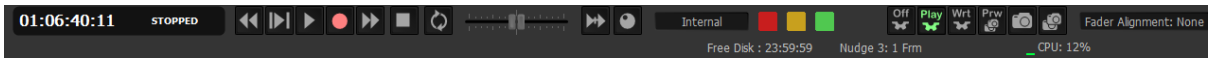
Each Background Recorder has its own Mixer. This is fully configurable in exactly the same way as the main Pyramix mixer. Please see: **Mixer on page 206**

> **Note:** The default Mixer is configured with 8 mono strips. For multi-track recording up to the capabilities of the system reconfigure the Mixer accordingly.

Operation

Once one or more Background Recorders have been set up they are operated from the **Transport** window or the Main Pyramix Window Transport Controls or the Take Logger.

Main Pyramix Window Transport Control Bar

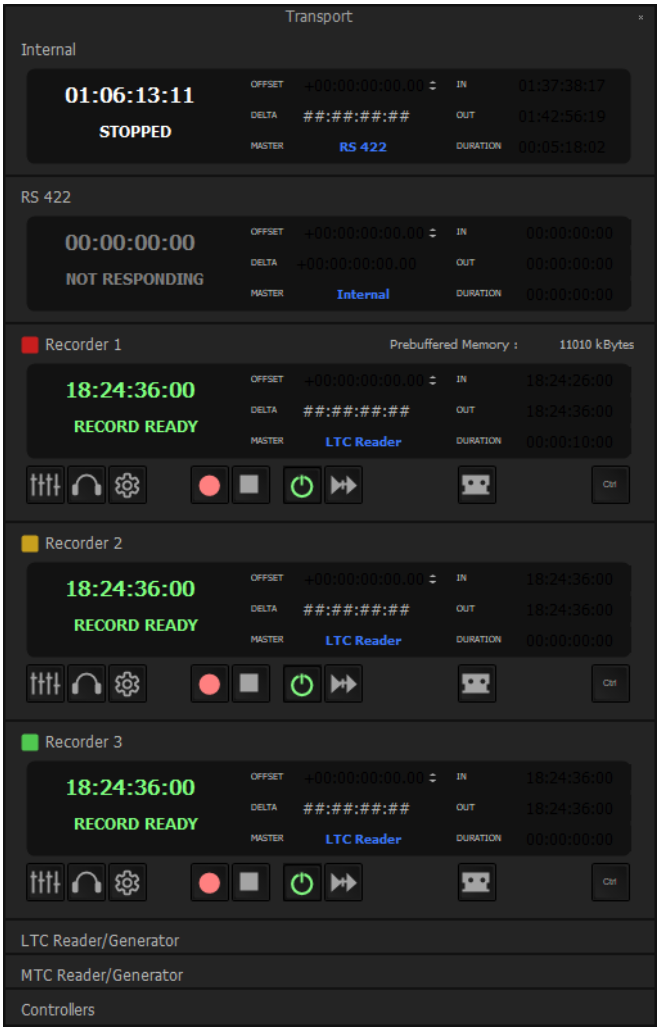


Main Window Transport Control Bar

The red, orange and green buttons show the presence of three Background Recorders. The button color will reflect the color selected in the Background Recorders Settings page.

Background Recorder Indicator buttons

Clicking on the buttons focuses the Transport Controls on the Background Recorder clicked on. This is exactly the same as selecting the Recorder in the adjacent drop-down list.



Transport Window

Background Recorder Transport Control Panel

Background Recorder Transport Control Panel

Clicking on the title bar toggles the panel between collapsed and full. When pre-buffering is active the amount of memory used is shown in the title bar.

Upper Section of Panel

For detailed information on the upper section of the panel please see: **Internal / External Machine panels - Features on page 591**

Controls

Toggles (open/close) the **Mixer** window associated with the Background Recorder open/closed. The colour of the background mixer is related to the choice in the settings

Toggles the **Monitor** source between the Pyramix Timeline Mixer and the Background Recorder Mixer. Lights yellow when Monitor source is the Background Recorder.

Opens Pyramix Settings on the **Background Recorders** page.

Starts Recording.

Stop - One press Stops the recording but leaves the Recorder **Enable**d.

Enables the Recorder and starts to buffer when green.

Enables/disables **Chase**. Lights blue when Chase is enabled.

Opens a floating Media Management Window showing the recordings.

Ctrl Control, lights orange when active. Pressing **Ctrl** or selecting it in the Transport Toolbar combo box routes keyboard shortcuts, Sony 9-Pin commands or controllers to the Background Recorder.

Notes

- Each recorder acts as an independent machine like the Internal or any External Machine.
- Background Recorders are started and stopped manually from the Transport Window.
- When set to **Chase** Background Recorders follow the current Master.
- Background recorders are linked to the “system” and not to the Pyramix project.
- The Mixer has all the same features as the main Pyramix Mixer and is configured and operated in the same manner.
- The Mixer is saved on quitting the application and when the settings are confirmed by clicking **OK**.
- Tracks can be armed from the Mixer with a button next to the strip number at the bottom of the fader. The button turns red when the associated Track(s) are Rec armed.

- All Mixer inputs are pre-buffered but only the Armed Strips are recorded when Recording commences.
- The Background Recorder Mixer can be monitored in the **Monitoring Section** by clicking on the monitoring button in the transport control panel.
- Background Recorders can also be controlled from the Transport Control Toolbar in the main Pyramix window by selecting them from the drop-down list.

Enable Record

- When the **Enable** button is active or **Play** is active in the Transport Toolbar, the Recorder starts to pre-buffer data. (When pre-buffering is active.)
- The amount of pre-buffered data is visible in the **Duration** counter in the machine display.
- The amount of memory consumed by the pre-buffer is shown in the title bar of the recorder control panel.
- The **In** and **Out** counters show the Timestamps for the recording that WILL be performed when Record is initiated.
- Entering Chase mode enables the recorder and starts to pre-buffer data once the machine is locked to the selected incoming Timecode. The **In** and **Out** registers then refer to the incoming chased timecode.

Recording

- When record is initiated the all pre-buffered data is sent to the media file(s).
- When the recording is Stopped the file(s) of both Media Sets are closed and data is once again pre-buffered immediately. I.e. One click on Stop leaves the Recorder in Enabled mode. A second click on Stop or clicking on the Enable button or disabling Chase ends the buffering.
- The amount of memory used to pre-buffer data and cache the recording is displayed in the header of the Background Recorder machine on the right of its name. An ever increasing amount here shows that the system may stall rapidly.

Edit while Recording

- When recording a new file or files with the Background Recorders, the file(s) being recorded can be edited in a Timeline while the recording continues.
- This is also possible for recordings in the Timeline but only in non-dubbing mode and only when using the MTFF file formats for the recording. (lossless only available as an output format)
- When a recording starts the new media being recorded appears in the media manager immediately, colored the same as the recorder color for easy identification.
- The media can be dragged to the Timeline and edited while it grows in size.
- The clips in the Timeline are also colored with the Recorder color and the end of the edited clips continues to extend automatically as the recording progresses. This only applies when the clips are the last clip on the Track to avoid undesired collisions.
- Multiple recordings coming from different machines can be edited at the same time.
- The media being recorded can be sent for editing automatically when the recording begins. Please see: **Background Recorders on page 809**.

Recording Status

The **Recording Status** window is opened from **View > Windows / Tools > Recording Status** or [**Alt + R**].

Recording Status Window – Stopped

Recording Status window – Recording

The window can be maximised to full screen by double-clicking anywhere on the window. A subsequent doubleclick restores to the original size. The Window can also be resized in the normal Windows manner.
The **Start** and **Lenght** fields are blank until recording is initiated.
When specified in the **Record Settings** page, in the **Background Recorders Settings** page or in the **Take Logger** the **Take Name** is shown at the bottom. When no Take Name is specified it will show **Untitled**.

Tip: The Take name can be updated in real time when modified in the **Take Logger**.

Note: If the current recorder is the **Active Project** and this Project is displaying the **Bars & Beats** ruler then the **Start:** time is displayed as a Bars - Beats counter.

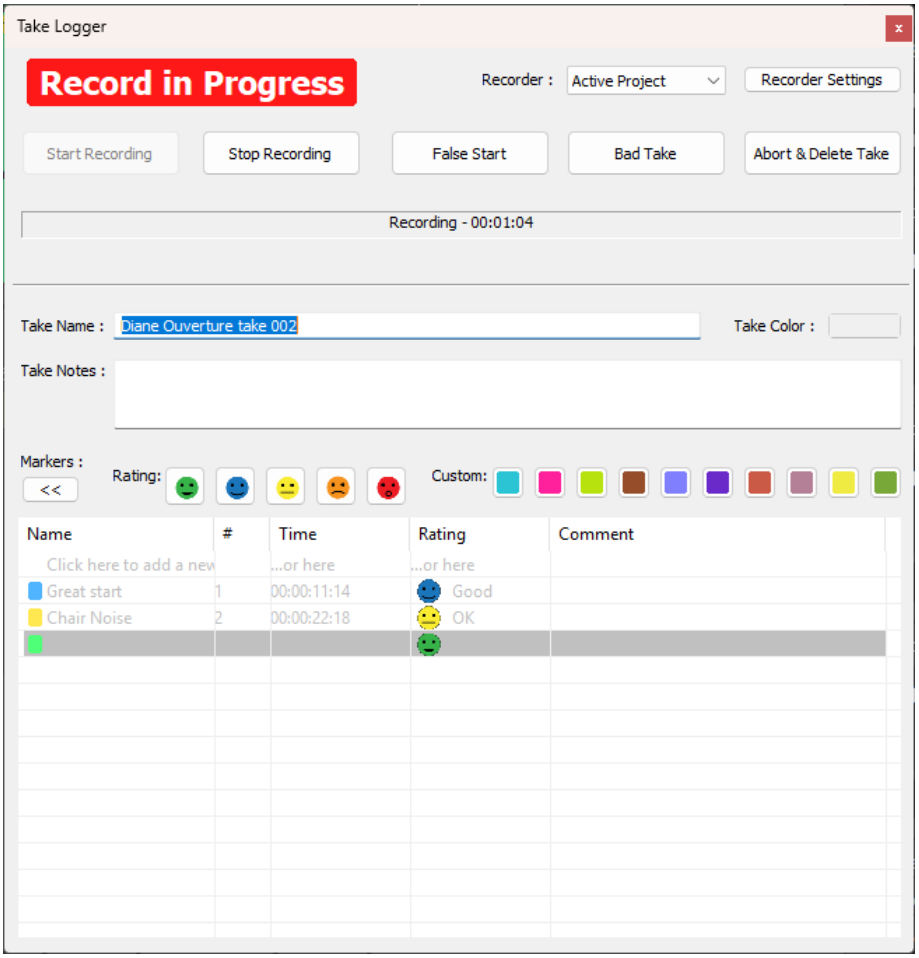
Take Logger

Scope

The **Take Logger** can control any available recorder, the **Active Project** or any **Background Recorder**. (The Active Project cannot be in **Dubbing Mode**.)

Operation

Note: When the Take Logger has the focus **ALL** regular keyboard shortcuts are disabled. Keyboard shortcuts specific to the Take Logger become active. These shortcuts are assigned in the Keyboard Shortcuts Editor. **Please see: Customizing Keyboard Shortcuts on page 526.**
The **Take Logger** window is opened from **View > Windows / Tools > Take Logger**



Take Logger window

Start Recording
Clicking on the button Starts the recording on the selected recorder.

Stop Recording
Clicking on the button Stops the recording on the selected recorder. If this is a Background Recorder it is left in Enabled mode. I.e. continuously pre-buffering for the length of time specified in Background Recorder Settings.
Use **Stop Recording** to end a successful recording. The Take number is incremented automatically.

False Start
Clicking on the button adds a Media marker with the rating **False Start** (colored dark gray). All preceding Media Markers are also changed to dark gray to indicate that this portion of the recording is bad.

Bad Take
Clicking on the button Stops the recording on the selected recorder. A **Bad (xxx)** suffix is added to the file name(s) and to the Take Name. The resultant Clips will be colored in the **Bad Take** color specified in **Settings > All Settings > Application > Timeline Layout : Clips & Waveforms**.

Abort & Delete Take
Clicking on the button Stops the recording on the selected recorder. The recorded file(s) are deleted and the Take number is not incremented. **NO UNDO IS POSSIBLE**

Note: If the Take Logger is being used to control a Background Recorder, the Media and Clips in the Timeline are NOT deleted.

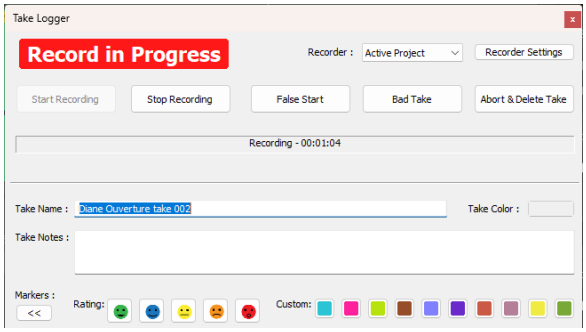
Recorder :
The field shows the recorder selected currently. Clicking on the field drops down a list of available recorders. This will include the Active Project and any Background Recorders which have been set up.

Recorder Settings
Clicking on the button opens the Settings page for the selected recorder.

Status Field
The Status Field shows information about the current state of the recorder being controlled by the Take Logger. This will be one of the following:

Stopped	
Ready	The selected Recorder is Enabled and ready to record.
Ready - Prebuffering	The selected Recorder is in Enabled mode and is buffering audio to the duration set in Background Recorder Settings.
Recording - 00:12:23	The selected Recorder is recording. The counter shows recording duration.

When recording the **Record in Progress** on the top left flashes red:



Take Name :

The **Take Name** will be displayed automatically if specified for the selected Recorder. If no Take Name is specified the field will show **Untitled**. Clicking in the field produces a cursor. Typing a Take Name here is the equivalent of typing it in the Recorder's Settings. A Take Number suffix is appended automatically where this is specified in the Recorder's Settings.
The Take Name is applied to the recorded file name(s), to the recorded file(s) metadata and to the recorded clips shown in the Timeline.

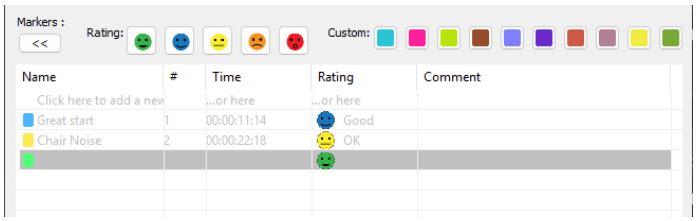
Take Color :
Clicking on the box pops-up a choice of colors and **More Color...** which opens a color picker. The color chosen is used to color the resultant clips in the Timeline.

> **Note: Take Name**, **Take Notes** and **Take Color** can all be changed *during* recording. The information is only stored when the recording is stopped.

Take Notes :
This is a free form text field. Information entered here is shown in the resultant Clips in the Timeline. Take Notes are also saved in the **MMD** (**M**edia **M**eta**D**ata) file in the same location as the recorded Media file(s).

Markers
Media Markers can be added in the Take Logger during recording by clicking on one of the Rating buttons. The Media Marker is created at the elapsed time when the button is pressed.

Lower Section
>> Clicking on the [>>] button expands the Take Logger window to show Media Markers added to the recording in progress. The button changes to [<<] clicking it contracts the window again.



Take Logger window recording

Clicking on the first entry in the **Name**, **Time**, or **Rating** columns also creates a new Media Marker. In this case it is given the rating **Good** by default.

Name	A free text field
#	Media Marker Number. This field is filled in automatically.
Time	Shows the position of the Marker.
Rating	Shows the Rating selected. To change a Rating click in the field to drop-down a list with the five options and select.
Comment	A free text field.

> **Note:** Media Markers shown in the list remain editable whilst the recording continues. When the recording is Stopped the list is removed.
> **Note:** Media Markers are saved in the MMD (Media MetaData) file in the same location as the recorded Media file(s).

Managing Takes
When using the Take Logger the Take Name and Take Notes are also saved in the MMD file in the same location as the recorded Media file(s). This data will populate the Media Manager fields. Take Name in the Name field and Take notes in the Notes field.
You can sort by columns in the Media Manager in the usual way and use the right-click context menu > Locate to select any Clips using that take in the Timeline.

Importing Audio Files into Pyramix Virtual Studio

Different file types with different bit depths (word lengths) can be freely combined in a Composition. Simply **Mount** the **Media Drive** or **Media Folder** and drag-and-drop the required material into the Timeline. Or **drag and drop** the file directly from the **Windows Explorer**

Files with different sample rates can also be freely combined.

Note: If a Clip has a different sample rate to the current project the Clip will play at the 'wrong' speed! E.g. in a 48kHz project a 96kHz Clip will play at half speed. With most material this will be glaringly obvious, however with sound effects, smaller differences in rate (E.g. 44.1kHz - 48kHz) may well go unnoticed.

Mounting Media Folders

If many audio files already exist in a single Windows directory or folder, it is easy to mount that Windows folder as a Pyramix **Media Folder**. Once mounted, the supported files become available for use in a Project.

1. Start a **New Project** or **Open** an existing one.
2. Click the **Media** Tab in the Project Management Panel to open the **Media** window, or doubleclick to open it as a floating window.
3. Select **Media Folder > Mount Media Folder**. This opens the **Choose a media folder to mount** dialog box.
4. Click the **Browse...** button, then navigate to the Windows directory containing the audio files you wish to import.
5. Click the **OK** button to mount that Windows directory as a **Media Folder**. All supported audio file types will be seen by Pyramix, and be available for use in the Project. A check in the **Recursive** box means Pyramix will look in sub-directories of the chosen folder as well as the root. A check in the **Permanent mount** box means Pyramix will attempt to mount the folder whenever the application is launched. I.e. make it available to all **Projects**.

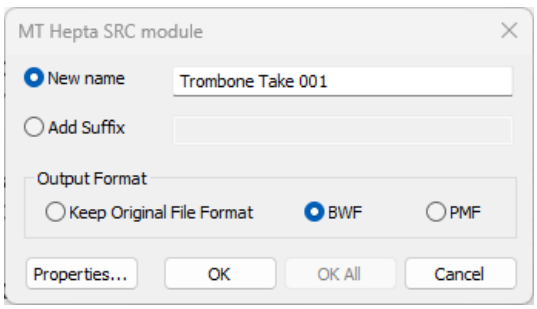
   Tip: using the Media TAB is not mandatory. One can directly audio files from the Windows Explorer. Using Media TAB provides many informations on the files and the trimmer to be able to import only what is needed see page 51

Sample Rate Conversion

Where the sampling rate of a **Media File** is different to the current **Project**, Pyramix offers a simple means of converting the **Media File**'s sample rate at very high quality. Using the Merging Technologies **HeptaCon** Sample Rate Converter.

Tip: one can also use the function to sample rate convert during playback on the fly see page

1. Select a **Master Clip** file or files in the main **Media window.**
2. Choose **Convert > Sampling Rate Conversion**. The **MT Hepta SRC module** dialog box appears:

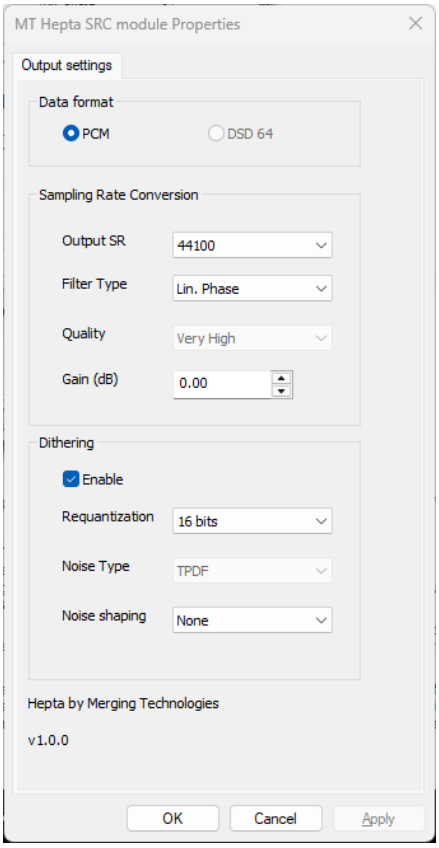


MT Hepta SRC module dialog

Radio buttons offer the choice of two text entry fields, **New name** for the file or **Add Suffix** to the existing filename. A check box selects **Keep Original File Format, BWF or PMF**

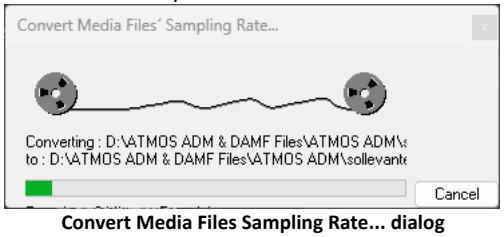
Tip: to convert several audio files in one go, choose **Add Suffix** without adding anything in the dialog box

3. Selecting **Properties** opens the **MT Hepta SRC module Properties** dialog:



MT Hepta SRC module Properties dialog

4. Choose the required target sample rate by clicking on the **Output SR** down arrow to drop-down the list of all available Sample Rates.
5. **Filter Type** offers the choice of **Lin. Phase**, **Min Phase** or **Apodising**.
   - **Linear Phase** features constant group delay, thanks to the linear phase, and has a symmetric impulse response, but also longer rings. This offers the best preservation of stereo image. There will be a minimum of phase distortion from the anti-aliasing filter.
   - **Minimum Phase** features an asymmetric impulse response with minimum phase response. This gives the lowest amount of phase variation along the frequency spectrum and allows slightly better results for transient sounds.
   - **Apodizing** offers the steepest response around the Nyquist point and linear phase. It offers the best of both worlds for the about the same computational effort as the 2 other designs. There is a steep transition band in the LPF filter using an almost linear phase. Arguably this is the best compromise between linear and minimum phase types.
6. **Conversion Quality** defaults to **Very High**. In the **Dithering** section there is a check box to enable dithering, a **Requantization** drop-down to select the desired bit depth and a further drop-down to select the desired **Noise Shaping**. Finally click on **OK** to close the dialog
7. Choose **OK** in the **MT Hepta SRC module** dialog box to begin the conversion. When converting multiple files, choose **OK** to convert the files one at a time with the possibility of changing parameters on each file or, if **Add Suffix** was chosen in **step 2,** you can choose **OK All** to convert all the selected files in one operation.

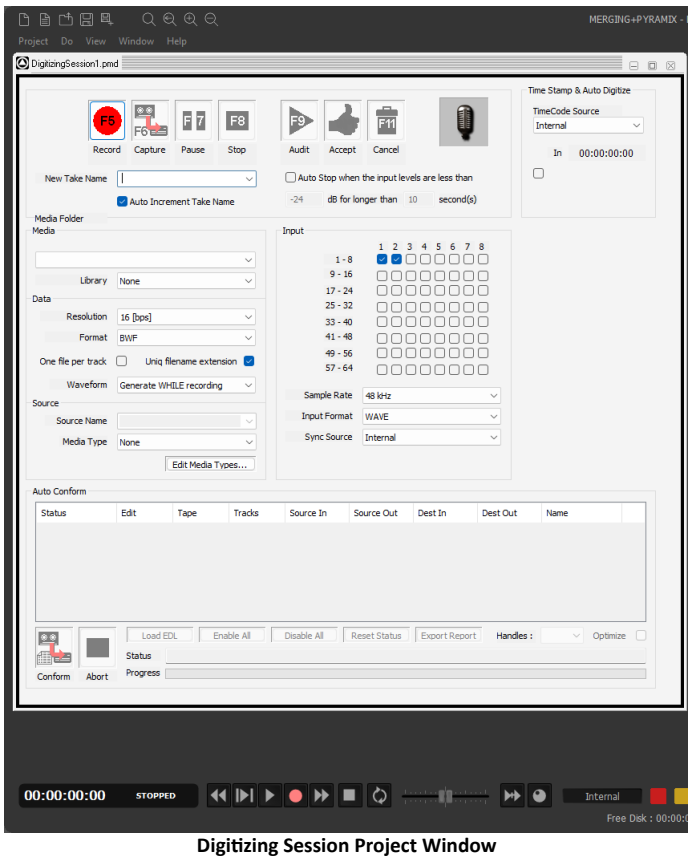


Convert Media Files Sampling Rate... dialog

Digitizing Sessions

For multi source batch recordings typically for ingest/archiving workflows. Multiple Digitizing sessions can run simultaneously.

A **Digitizing Session** is a special type of Pyramix **Project** which is intended for efficiently loading audio material into **Pyramix.** One advantage to using a **Digitizing Session** for capture is that **Master Clips** referencing the audio **Media Files** can be generated and saved directly into a specified **Library** for later placement.



Digitizing Session Project Window

Manual Digitizing

1. In the **Media** section, choose an appropriate **Media Folder** to which to your captured files will be saved. If you wish to simultaneously save **Master Clip** references to these **Media Files** into a previously created **Library**, select that **Library** from the **Library** drop-down list.
2. In the **Data** section, choose the appropriate **Resolution** (bit depth or word length) and **Format** (file type) for the saved audio files. Check **One File per track ON** to generate a separate file for each **Track** recorded. I.e. two files for a stereo source, six for a discrete 5.1 source and so on.
3. In the **Input** radio button matrix, check **ON** for each **Input** you wish to record from. Also set the **Sample Rate**, **Input Format** and **Sync Source** as appropriate.
4. Type in a **New Take Name** to name the captured files. If the **Auto Increment Take Name** box is checked all subsequent takes will use the name typed in the **New Take Name** field as a 'seed' with a numerical suffix to denote the individual takes. E.g. Enter 'Vocal' as the New Take Name, check the **Auto Increment Take Name** box and record a few seconds, stop then record another few seconds. The first take will be called 'Vocal' and the second 'Vocal 2'
5. You can monitor incoming audio through the **Mixer**. Click on the **Show/Hide Mixer** icon to display the **Mixer**, and set levels as appropriate.

6. Any external machine can be used as the source. However, it is much more convenient to use a machine which can be controlled by Pyramix. A machine can be selected from the **Machine** drop-down list. It's control panel appears below the list.
7. Locate the required material on the source tape.
8. Click on the red **Record** button to begin recording. The system will remain in record until the **Stop**, **Pause** or **Cancel** button is pressed.
9. Press the **Stop** button to stop recording.
10. You can press the **Audit** button to audition the recording just made.
11. Press the **Accept** button to save the recording to the destination Media Folder, or press the **Cancel** button to delete the recording without saving it.
12. To Auto Stop on silence, e.g. at the end of a tape, use the **Auto Stop when the input levels are less than** check box to stop recording when the input level is lower than the value in: -XX **dB for longer than** XX **second(s)**

Autoconforming

1. Pyramix can record audio selectively according to an EDL (Edit Decision List) in the CMX format.
2. Follow the set-up suggestions above and ensure the source machine is working correctly under 9-pin control.
3. Click the **Load EDL** button, navigate to the directory containing the EDL you wish to load the audio for.
4. If the list is not already in **Reel** order, click the **Optimize** button. This will sort the list so that audio is digitized with the minimum of reel changing and spooling. All overlapping edits will be merged.
5. Load the first reel in the list, click the **Capture** button and Pyramix will automatically control the source machine. All the required audio in the reel will be digitized.
6. Change the reel when prompted until all the required audio has been digitized.

   If you know the audio is not available for certain edits in the list, or you wish to digitize only certain edits, uncheck the box(es) in the **Status field** for the relevant entries before clicking **Capture**. The **Status** filed will show when Clips have been captured which match the edits.

   Enable All
   Checks all the boxes in the **Status Field** for capture.

   Disable All
   Un-checks all the boxes in the **Status Field**. I.e. no edits are selected for capture.

   Reset Status
   Restores the **Status Field** check boxes to their previous state.

   Export Report
   Exports an **.rtf** file detailing the edits which were captured and those which were not.

   Handles
   Sets an extra amount of audio to be captured at each end of the edits. This allows greater freedom in editing but may cause problems in some circumstances. The drop-down list gives a choice of from **0** to **10** frames.

EDITING

Editing in the Timeline

The **Timeline** is the place in Pyramix where audio **Clips** can be edited, faded up and down and otherwise arranged into a mono, stereo or multi-channel digital audio **Composition**.
A **Project Editing Panel** containing the **Timeline** will be visible as soon as you open a **Project**.

The **Fade Editor** provides elegant alternative methods of viewing and adjusting the parameters of edits in the Timeline.

Clips and Compositions

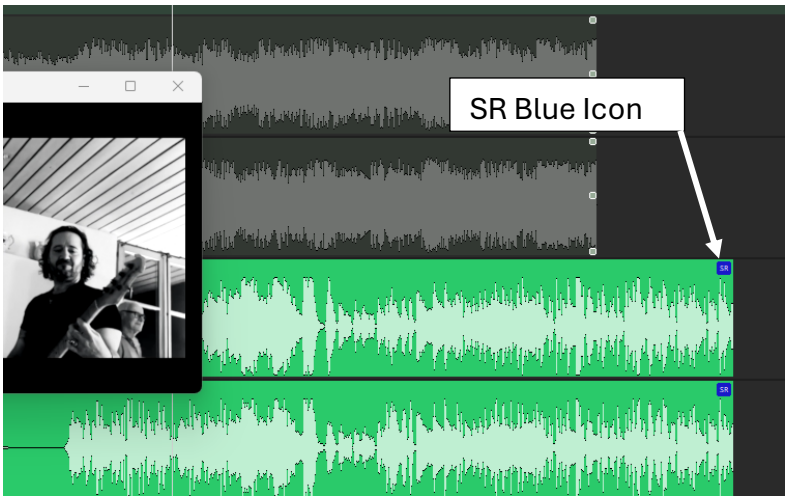
Clips in a Composition

As with **Clips** in a **Media Drive** or **Library**, **Clips** in a **Composition** are just pointers to the original audio **Media File**. Any actions performed on a **Clip** in a **Composition** will **NOT** affect the original audio **Media File**, nor the **Master Clip** in the **Media Folder** nor **Library** it came from. In the **Project Editing Panel (Timeline)**, a **Clip once selected** can be edited, shortened, split into 2 **Clips**, moved, level controlled, deleted, etc., and all actions will **ONLY** affect the **Composition**.

Once placed in the Composition, each Clip by default displays a Waveform of the Media file to which it points. This Waveform display can be enabled, disabled, changed or scaled by the user.

Sample Rate Mismatch (convert during playback)

Pyramix allows Clips of any supported sample rate to be placed in the Timeline. By default Clips that do not match the Project sample rate are converted 'on-the-fly' to the project sampling rate.
(**Please see also: Real-time Sampling Rate Conversion on page 795**)
To help avoid inadvertent placement of Clips that do not match the project sample rate, if **RealTime Sampling Rate Conversion** is active a discreet blue **SR** icon is added in such Clips or a red **SR** icon if not :

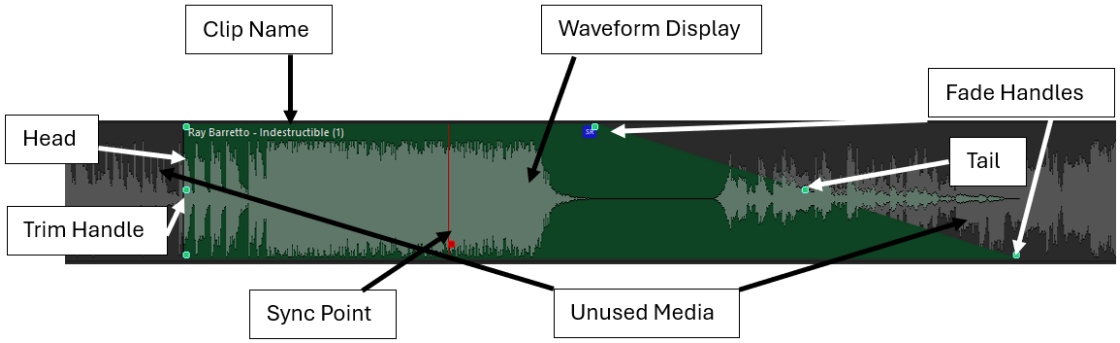


Time line indication of Sample Rate Mismatch

If desired, this can be made more obvious by changing the Waveform color of Clips deviating from the Project sampling rate in **Settings > All Settings > Application > Timeline Layout : Clips & Waveforms**.
Note: Each Clip's assumed sample rate is determined by information contained in the file header.

Anatomy of a Clip

Many Edit Commands refer to parts of a Clip rather than the entire Clip.



Features of a Clip in the Timeline

Once a **Clip is** selected, **Trim Handles** appear at each end which are used to manipulate the **Clip**. Each **Trim Handle** consists of **3 Control Points**. The **Control Points** on the left side of the **Clip** allows adjustment of the beginning of the **Clip**, and the **Control Points** on the right side allows adjustment of the end. Click and drag on the middle **Control Point** to move the head or tail of the **Clip** as desired to shorten or lengthen the **Clip**. These can be moved out to the full extent of the original audio **Media File** to which the **Clip** is pointing. Select **View > Show Media** to view the unused audio (if any) as a greyed out waveform.

Head
The beginning of a Clip on a Track is referred to as the **Head**. The Head may or may not represent the actual beginning of the Media File for the Clip, since the Clip is just a set of pointers to an area of the whole media file.

Tail
The end of a Clip on a Track is referred to as the **Tail**. The Tail may or may not represent the actual end of the media file for the Clip, since the Clip is just a set of pointers to an area of the whole Media File.

Sync Point
The Sync Point is an internal reference point inside the Clip. This defaults to the start of a Clip (in black) until moved. The Sync Point may be moved by dragging its handle within the Clip. If the Play cursor is positioned over some part of the Clip, the Sync Point may be snapped within the Clip to the position of the Play Cursor by choosing **Clips > Set Sync Point to Cursor**.

Trim Handle
The Trim Handle is the middle handle available at either end of the Clip when the Clip is selected. This handle is used to shorten or lengthen the Clip (trim the Clip in or out) up to the limit of the available media. To trim the Clip,drag the handle.

Fade Handles
The Fade Handles are the top and bottom handles available at either end of the Clip when the Clip is selected. The handles are used to create a fade in at the beginning of the Clip, or a fade out at the end of the Clip. To create or adjust a fade, drag one of the trim handles to create the desired fade in or fade out. The top handle adjusts the fade within the Clip and the bottom handle trims the Clip in or out as you adjust the fade. If the Top Handle is used with the CTRL key modifier, a symmetrical crossfade is created with any adjacent Clips, centered at the original end point of the selected Clip. If no adjacent Clip exists, then it extends or shrinks the duration of the fade while maintaining the duration of the selected Clip.

Waveform Display
Clips can appear either as a block with the Clip name inside, or can show the audio waveform of the media referenced by the Clip.

Clip Name
The name of the Clip is shown unless suppressed. **View > Waveform Display > Hide Clip Name when Waveform Shown**.

Clip Gain
The overall **Gain** applied to the Clip can be shown. When shown, this value is displayed in decibels. Gain can be adjusted by selecting **Clips > Clip Gain** or **Right Click on the clip while holding CTRL** Please see: **Gain Window on page 99** for more info.
Clip Text
Many items can be shown as clip text under **Settings > All Settings > Application > Timeline Layout > Clip Text**

Locking Clips

Clips can be protected from being displaced during editing by selecting **Clips > Lock**. A locked Clip cannot be moved in time or to another Track until it is unlocked. **Clips > Unlock.** If you simply wish to prevent loss of sync select **Clips > Lock Horizontal Drag**.

Grouping Clips

To **Group** multiple **Clips**, whether they are on the same or different **Tracks**, select the **Clips** you wish to **Group** together. Now choose **Clips > Group**. When any **Clip** in a **Group** is selected, copied, deleted or moved, all **Clips** in its **Group** will be similarly selected, copied, deleted or moved.

To ungroup previously **Grouped Clips** in order to treat them separately, select the **Group** and choose **Clips** > **Ungroup**.

Groups can be nested. I.e. one Group may be inside another Group. For example a stereo or multi-channel **Clip** is simply a group of mono **Clips**. Stereo or Multi-channel **Clips** may be ungrouped into individual mono ones in the same way as any other group.

Clip and Selection Editing

Master Clips appear in the Timeline as blocks which can be edited on a Track (or Tracks, depending on how many channels the Master Clip contains) The Clip can be trimmed, split, crossfaded, and have many other operations performed on it without ever affecting the underlying media file. Each instance of a Clip references the entire media file, and can always be "opened up" by using the Trim Handles to reveal more of the Clip until the complete underlying Media File is visible. Clips can be dragged in the Timeline while the transport is playing.

Clip Properties

Clips > Properties opens the Properties window for the selected Clip. If multiple Clips are selected, opens the Properties window for the first Clip selected.

Selection Properties TAB

Selection/Properties Window (floating)

The Selection Tab Window groups together **Selection**, **Clip** and **Media** Properties fields in a table.

When choosing **Selection Properties** or a **Properties** Menu item, this Tab Window is displayed. If the Tab Windows section is hidden, then the Selection Tab Window is undocked to ensure it is visible. Parameters that can be modified are marked with a '**>**' sign. Click on the '**>**' sign or on the parameter itself to change/edit it.

Selection and Clip Modifiable Fields

Name

This field shows the name of Clip as it appears in the composition. This name will also be displayed in the Clip block when the Clip is set to Show Text.

Comment

This field shows a user comment concerning the Clip. The information displayed here will also be shown in the Comment field in the EDL Tab window

Level

Available in both Pops up a window with a fader and numerical entry box for level, and two check boxes, **Sel.**ection and **Rel.**ative. When neither box is checked any gain change is only applied to the Clip on which you last right clicked (even if others are selected). If **Sel.** is checked, the gain will be applied to the whole selection (selected by default). If **Rel.** Is checked and you have a grouped series of Clips the gain change is relative to pre-existing levels.

If you click on the > in the "selection" part gain is applied to the whole selection, and if you click in the "Clip" part, the gain is applied only to the Clip which was under the mouse when you clicked.

E.g: Three Clips are selected, the first at -1 dB, the second at -2 dB and the third at -3 dB. You wish to increase the gain of all the selected Clips by 1dB. Check the **Rel.** box and add 1 dB either with the fader or in the numeric box. This will result in the first Track at 0 dB, second at -1, third at -2.

Phase Invert

Toggles between **No** and **Yes** (Phase inverted)

Mute

Toggles between **No** and **Yes** (Muted)

Auto Deglitching

Drops down a list box with choice of **None**, **Follow General Settings** or fade settings between **1.0 [mS]** and **5.0 [mS]** in 0.5[mS] increments. This feature avoids the necessity to manually make short fades when quickly making cut edits. On any Clips that do not already have a fade a small ramp is automatically applied to avoid clicks at the beginning and end. Any Clips with fades previously applied bypass the Auto-Deglitching feature.

> **Note:** the global Automatic -Deglitching value is set in the **Settings > All Settings > Application > Playback/Record** page in the **Automatic Deglitching** section.

Clip Information Only Fields

Apart from the modifiable fields listed above, **Clip** also shows the following information fields:

Length

This shows the total length of the selected Clip segment.

Media Offset

This field shows the amount by which the start of the selected Clip segment is offset from the beginning of the entire Master Clip.

Original TimeCode

This field shows the original TimeCode stamp at the head of the Clip.

Peak Level

This field shows the highest level (in Decibels Full Scale) reached by any sample within a Clip. This is only shown for Clips which have had a Waveform display generated.

Media Information Only Fields

Name

Shows the original short name of the audio media.

Format

Shows the media format as PMF, Wave etc.

Sample Rate

Word Length

Length

Shows the total length of the media file referenced by the Clip.

Original TimeCode

Tracks

Shows the Tracks the media was originally recorded to.

Peak

This field shows the highest level (in Decibels Full Scale) reached by any sample within a media file.

Author

Shows the user who was logged in when the file was created.

File Name

Shows the full media filename including the unique identifier and extension.

File Location

Shows the full Windows path to the media file

File Size

Shows file size in bytes.

File Creation Date

Scene Scene, Take, Tape and notes are available in the BWF chunk only and typically used for on location (film) recordings

Take

Tape

Notes
UBITS

Media Track Information Only Fields

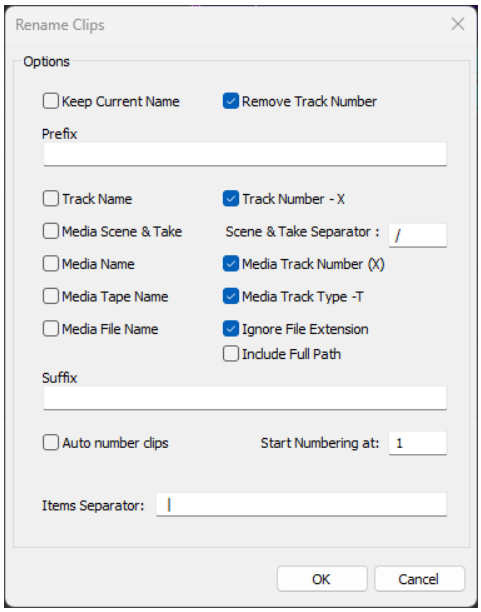
Track Number
Shows the Track number within the media file. I.e. a stereo file will have A1 and A2 for the two Tracks.
File Name
Shows the full media filename including the unique identifier and extension.

> **Note:** The values shown in the **Clip**, **Media** and **Media Track** sections reflect the Track clicked on in the Timeline. Where a selection contains several, possibly multi-channel, Clips, clicking on the individual items in the Timeline updates the information to reflect the last item clicked.

The **Selection** Tab Window is automatically updated when the selection changes and can therefore remain floating.

Renaming Clips

Although Clips can be renamed in the **Clips > Properties** Selection Window, Pyramix offers a more convenient method of renaming Clips in a logical and orderly manner.
Clips Rename open the **Rename Clips** dialog under **Clips > Rename**



Rename Clips Dialog

The Clip Name can be composed out of user text, automatically generated data or a combination of both. The dialog box is largely self explanatory. Auto numbering is relevant where a number of Clips are selected when the Rename Clips dialog is opened.
Show Media
To view the full extent of the underlying Media in the selected Clip as a “ghost” waveform select **Show Media** from the **View** menu.

Selections and Region Selections

Selection Operations
Many Pyramix editing operations can only be carried out if a Clip or Region is selected.
There are two ways of selecting material in the Timeline. Whole **Clip**s and **Region**s.

Clip Selection

Clicking in a Clip selects it (the color becomes darker and **Handles** appear). The whole Clip is ready for editing. Clicking on other Clips while holding down the **Shift** key adds them to the selection. If the Clip is grouped with other Clips, this will select the entire group. To select a single Clip in a group, first ungroup the Clips, then select the desired Clip.

Region Selection
A **Region Selection** is a selected area of the **Composition**. A Region can include many Clips on many Tracks or only a portion of a single Clip. It is indicated as a darker gray rectangular area over one or more **Tracks**. When selecting a Clip within a group, the **Region** is automatically extended to the whole group. To avoid auto-selecting the entire Clip Group and to select a range within the Clip Group Left-click the mouse while the cursor is over the clip group at the start of the area to be selected, then while continuing to hold down the Left mouse button, press and hold SHIFT, then drag across the clip group to make the selection. A **Region** can be made by clicking and dragging the mouse across one or more **Tracks**.

Of course, keyboard shortcuts exist for making **Regions**, and this is one of the most useful ways to mark a Region. The **Pyramix** default method of marking a **Region** in point is to press **[** on the keyboard: this selects everything to the right of the current **Play Head Cursor location** on the currently selected Track. **]** marks a Region out point: this selects everything to the left of the current **Play Head Cursor** location, up to a previously marked in point. Once a **Region** has been defined in this manner it can be extended or 'grown' across more Tracks by using **Ctrl +Shift +Cursor UP** or **DOWN arrows**. **Ctrl +Alt +Shift +Cursor UP** or **DOWN** shrinks. (Assuming the standard Pyramix keyboard shortcut assignments are in use.)

Using the keyboard short-cuts, **Regions** can be easily made on-the-fly while playing or scrubbing the **Timeline**. This is particularly efficient when used in conjunction with the **Numeric Keypad** transport control short-cuts.

Working with Selections and Regions

Any selection of Clips or selected Region can be manipulated as a single object. This object will include all Clips, fades, envelopes and automation. It can be Copied and Pasted elsewhere in the Timeline or "Snapshot" copied to a library for future use. The object can be given a suitable name and is treated in the same way as any other library object for searching etc. This function can be used, for example, to keep complex composite effects for future use in the current or future Projects. With the ability to open the same Library from multiple Pyramix on a network, editors can share parts of compositions in real-time between systems (when dropping something in a library from one system it will pop in the other within seconds) and not only within the same Pyramix system.

Snapshot a Selection or Region
To Snaphot a Selection or Region:
- Make a Selection or select a Region
- Hold down **Alt + Shift**
- Cursor changes to:
- Click anywhere in the Selection or Region and drag to a library.
- The resulting object will appear in the library labelled, **Region of {Project Name}**.

Snapshot Timeline
To Snapshot the entire Timeline:

- Open the Overview Tab
- Hold down **Alt + Shift**
- Cursor changes to:
- Click anywhere in the Overview and drag to a library.
- The resulting object will appear in the library labelled, **Region of {Project Name}**.

Dragging Clips into a Composition

The simplest way to place an audio **Clip** into your **Composition** is by dragging it from a **Media Folder** or **Library**.
To drag from a **Media Folder**:

1. Click on the **Media Management** Tab to open the **Media** tab window.
2. Double-click on a mounted **Media Folder** or subfolder to open it. The **Master Clips** will all be listed on the right side of that window.
3. Select a **Master Clip** by left-clicking and holding. Drag the **Master Clip** into a **Track**. You can place it into any **Track**, at any point on the **Track**.

The procedure for dragging an object from a **Library** is virtually identical to that outlined above for **Media Drives**. However, access the required **Library** using the **Global Libraries** or **Document Libraries Tabs** in the **Project Management Panel.**

Copy and Paste

Another way to get objects into a **Composition** is by copying and pasting them.

1. Select an object in a **Media Folder** or **Library**.
2. Right-click on the **Master Clip**, and choose **Copy** from the pop-up.
3. Place the **Play Head Cursor** where you want to paste the beginning of the **Master Clip**.
4. Right-click on the **Track** to which you wish to place the **Clip**, and choose **Paste to Cursor** from the pop-up. The beginning of the object will be placed at the **Play Head** in the **Track** on which you right-clicked. Alternatively, simply click the mouse on the Track and at the time you want the **Clip** to start, right -click and choose **Paste to Mouse** to insert the **Clip** where you placed the mouse cursor.

Selecting a Clip
Click on any Clip in the Composition to select it. It will change color to indicate selection. Shift-click to select multiple Clips at the same time.
Simple Copy and Paste

1. Left-click a **Clip** to select it.
2. Right-click and choose **Copy** from the pop-up. (or use menu **Edit > Copy** or use **Ctrl + C**)
3. Place the **Play Head Cursor** where you want to paste the beginning of the **Master Clip**.
4. Right-click on the **Track** to which you wish to place the **Clip**, and choose **Paste to Cursor** from the pop-up. (or use menu **Edit > Paste to Cursor** or use **Ctrl + V**). The beginning of the **Clip** will be placed at the **Play Head** in the **Track** on which you right-clicked. Alternatively, simply place the mouse cursor on the Track and at the time you want the **Clip** to start, right-click and choose **Paste to Mouse** to insert the **Clip** where you placed the mouse cursor.

Selecting a Region
To select a Region, click the mouse at one end of the Region you wish to select, and drag the cursor to the other end of the Region you wish to select.

A Region can include more than one Clip, and may extend across multiple Tracks. The selected Region may also include the area(s) on a Track where no Clip is present.

Adding Tracks to a Selected Region
With a Region selected, **Shift + Click** on other Tracks to add them to the selection. The Tracks do not have to be continuous.

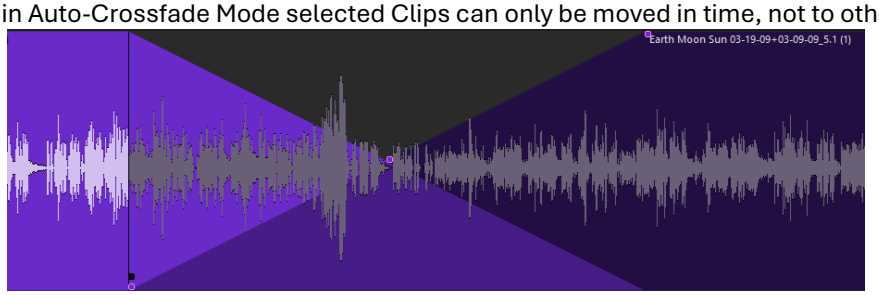
Note: Discontinuous Regions cannot be selected horizontally.

Clip Selection Behavior
The following lists the various behaviors for a selected Clip depending on different modifier keys.

When a Clip is selected:

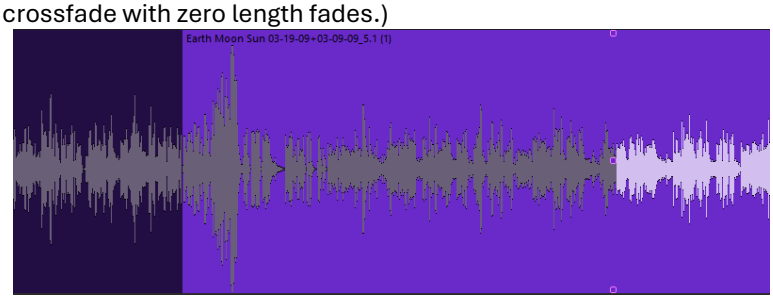
No Modifier Key
With no key modifier, the Clip can be manipulated in standard **Edit Mode**.

Ctrl Key Modifier (Auto Crossfade Mode)
While a Clip is selected, pressing and holding the **Ctrl** key before clicking and dragging automatically creates a cross-fade when the Clip is moved to overlap any adjacent Clip. The mouse cursor changes to a hand with an X over it to indicate Auto Crossfade Mode is engaged. While in Auto-Crossfade Mode selected Clips can only be moved in time, not to other Tracks.



Auto Crossfade Mode

Ctrl Key Modifier Option (Layering Mode)
When in the **Ctrl** Crossfade mode, if the Ctrl Key is released (while still holding the left mouse button) **Layering Mode** is entered. This mode allows Clips to be overlapped. (Technically, the result is a crossfade with zero length fades.)



Layering Mode

Ctrl SHIFT Key Modifier (Slip Media Mode)
While a Clip is selected, pressing the **CTRL** and **SHIFT** keys will allow the audio contents of the Clip to be slipped in time. The Media can be slipped to the extent of its availability.

Ctrl Alt Key Modifier (Slip Clip Mode)
While a Clip is selected, pressing the **CTRL** and **ALT** keys will allow the In and Out point of the Clip to be slipped together in time while the Media remains where it is in time. Think of this as moving a "window" within the media.

Alt ShiftKey Modifier
While a Clip is selected, pressing the **ALT** and **SHIFT** keys will allow the Clip to be dropped into a **Library** as a new Composition.

> **Note:** When a Clip is moved over another in either within the TimeLine in Layering or Auto- Crossfade Modes or from a Library or Media Management, the Clip color temporarily changes to red. This is particularly helpful where there are hidden Clips on the right side of the screen that may be erased by the new Clip or move.

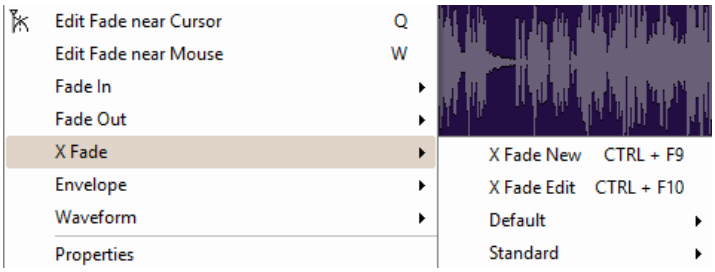
Auto-Crossfade By Default

Auto Crossfade / Layering can be set as the default editing mode. This reverses the functionality described above. When this mode is engaged, pressing the **Ctrl** key enables the Edit mode.
This mode can be engaged by selecting **Edit > Auto-Crossfade** or by checking the **Auto-Crossfade by Default - Control key for Drag & Drop** box in **Settings > All Settings > Editing**.

Clip Fade Commands

Fade In
Fade Out
X Fade

Each of these three entries on the **Clips** menu lead to sub-menus which all look like this:



Crossfade sub-menu

New Creates a fade when a Region is defined at the beginning (**Fade In**) the end (**Fade Out**) or across overlapping Clips (**X Fade**)

Edit When chosen from either the Fade In or Fade Out sub-menus, opens the Fade Editor with the current fade. From the Cross Fade sub-menu opens the Fade Editor only when a Region is defined across an existing cross fade. (**Please see: Fade Editor Tab Window on page 199**)

Default When a Clip is selected or a Region is defined which includes the Clip start or end, **Fade In** or **Out > Default > Complete** recalls the length and shape of the **Default Fade In** or **Out** and applies it to the selection. **Default > Curve Only** recalls only the curve shape. When a Region is defined on a Clip or Clips which are cross-faded **X Fade > Default Complete** or **Curve Only** recalls and applies the Default Crossfade length and shape or shape only respectively.

Standard Sub-menu offers a choice of fade types

Power Linear
Tension Linear
dB Linear
Cosine
Root Cosine

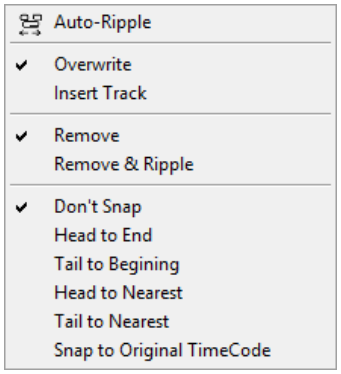
Note : access to the fade IN/OUT/Xfade menu and the stored fades can be accessed by right-clicking on the clip, fade or selection

Editing Modes

The current **Editing Modes** are shown in the Cursor Toolbar. If either **Remove**, **Insert** or **Snap** modes will result in rippling of other Clips. I.e. loss of sync, the **Editing Modes** are shown in **Red**
Some of the editing commands which delete Clips from, or paste Clips into the Timeline behave differently depending on the current settings of the **Insert** mode and the **Remove** mode.

Edit Modes Context Menu

Clicking on the current Edit Mode indication in the **CUR**sor Toolbar header pops up the **Edit Modes** menu:



Edit Modes Menu

Auto-Ripple When this option is checked (enabled) all **Insert** or **Remove** operations ripple the rest of the Track

---

Overwrite When checked, any Clip placed so that it overlaps an existing Clip will overwrite the part of that Clip where the two overlap.

Insert Track When checked, any Clip placed on a Track will be inserted into the Track and will ripple all other material on the Track later in time (to the right) by the length of the Clip being inserted.

Remove When checked any selected material will simply be removed from the Timeline. Everything else will be left intact and in the same place.

Remove and Ripple When checked any selected material will be removed from the Timeline. Everything else to the right (after) the removed material will be Rippled (moved) to the left (earlier)

Don't Snap No snap mode set. This mode doesn't affect the behavior of objects placed on a Track. Behavior follows the existing Insert and Remove modes.

Head to End This mode will cause the beginning of any Clip placed on a Track to snap to the end of the last Clip on the Track, abutting the head of the new Clip to the end (tail) of the last Clip.

Tail to Beginning This mode will cause any Clip placed on a Track to snap to the beginning of the first Clip on the Track, abutting the tail of the new Clip to the head of the first Clip.

Head to Nearest This mode will cause any Clip placed on a Track to snap the head of the Clip to the nearest edit point or mark on the Track. This includes the head or tail of existing Clips on the Track, as well as the Play Head Cursor, Mark In, Mark Out, Named Markers, or CD Marks. The Clip will interact with existing Clips according to the Insert Mode setting.

Tail to Nearest This mode will cause any Clip placed on a Track to snap the tail of the Clip to the nearest edit point or mark on the Track. This include the head or tail of existing Clips on the Track, as well as the Play Head Cursor, Mark In, Mark Out, Named Markers, or CD Marks. The Clip will interact with existing Clips according to the Insert Mode setting.

Snap to Original TimeCode This mode will cause any Clip placed on a Track to snap the head of the Clip to the time location represented by the Clips original TimeCode. The Clip will interact with existing Clips according to the Insert Mode setting.

Splitting Clips and Regions

Splitting a Selection

Splitting Clips

Edit > Split (or **Ctrl + T**) makes an edit on the selected Clip(s) at the cursor position splitting it (them). If a Region is defined within a Clip or Clips then this Region is Split (edited) by using this command. Each split portion of the original **Clip**(s) now becomes a new, independent **Clip** in its own right.

Splitting Regions
If the Play Cursor is positioned over a selected Region rather than a whole Clip or Clips, then choosing the **Edit > Split** command will split the selected Region from the surrounding material at the edges of the selection area, not under the Playhead Cursor.
Once a **Region** is marked on a **Clip**, simply clicking on the **Region** makes an edit. (same effect as the **Edit > Split** menu command.) This will split the **Clip** or **Clips** at the Region boundaries. If a **Region** is across several **Tracks**, Edits will be made on all **Tracks** within the **Region**.

Cutter
Holding down the **C** key changes the mouse pointer to a cutter. Edits (cuts) are made wherever the user clicks. To make an edit with the cutter on a range of Clips at the same position, just select them before cutting.

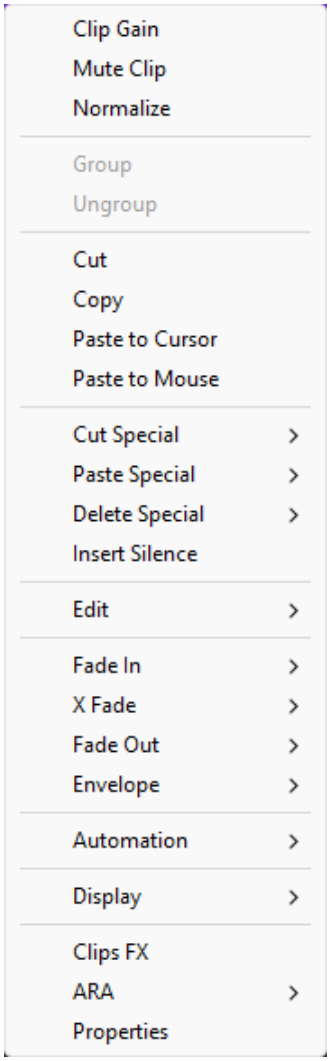
Duplicate Selection
Holding down the **D** key while clicking on the selection then dragging to a new location duplicates the selected material and moves the copy.
Holding down the **F** key while clicking on the selection then dragging to another Track (or Tracks if the selection covers more than one Track) duplicates the selected material and moves the copy locked in time.

Moving a Selection
Simply drag a selected Clip move or reposition it to another location on the same Track or a different Track. If a Region is selected, clicking on it will split it from the surrounding material. The resulting separate Clip can then be dragged to a different location or Track. To constrain a Clip in time when moving it to another Track, hold down the Alt, Shift and Ctrl keys at the same time while dragging the Clip to the new Track.

Adjusting a Region Selection
Simply position the Arrow Cursor at the edge (beginning or ending) of the Region. The cursor will change shape to indicate the Region can now be adjusted by clicking and dragging. You may drag the edge beyond the other end of the Region. Doing so ensures that the new selection Region begins (or ends) exactly where the original Region ended (or began). This also applies to the top and bottom edges of the Region. For example, you can extend the selected Region on one Track up or down to include additional Tracks.

Editing Context Menu

Right-clicking in the Timeline opens a context menu with extensive editing options. Some options will be grayed out when they are inapplicable. E.g. unless a Clip is selected, or if there is nothing on the Clipboard to Paste.



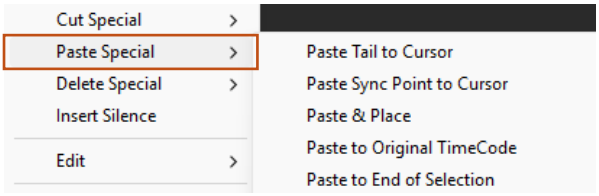
All the commands in the context menu and sub-menus can be found elsewhere, principally in the **Edit** and **Clip** menus. However, here they are grouped in a convenient way for quick access.

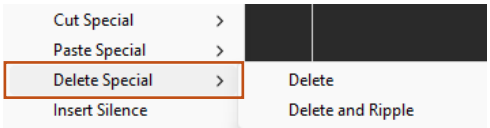
Clips FX and ARA commands and functionalities can be found on the **Clips FX TAB** see page

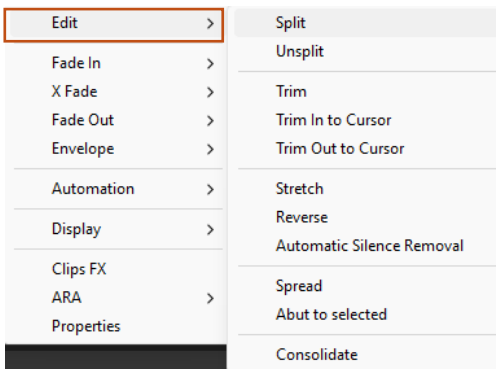
For power users, keyboards shortcuts are the way to go.

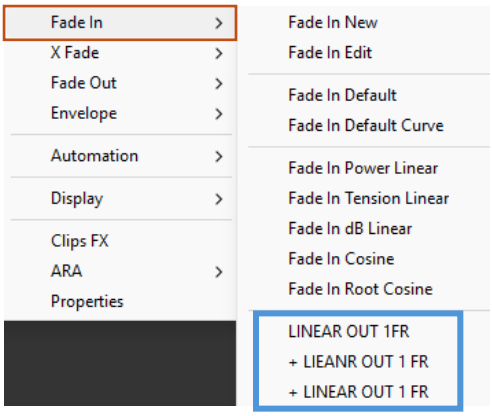
Note: the following screenshots show all the edit functionalities, the name of the functionality is self explanatory

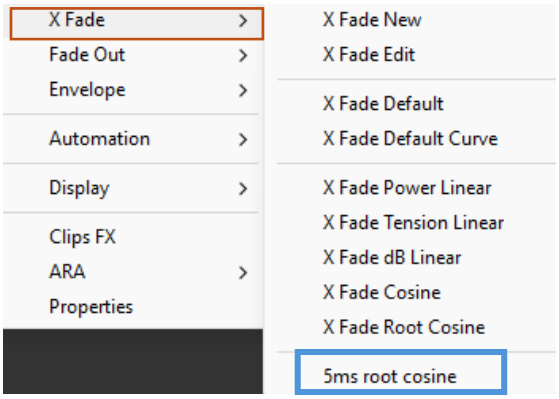
Editing Context Sub-menus

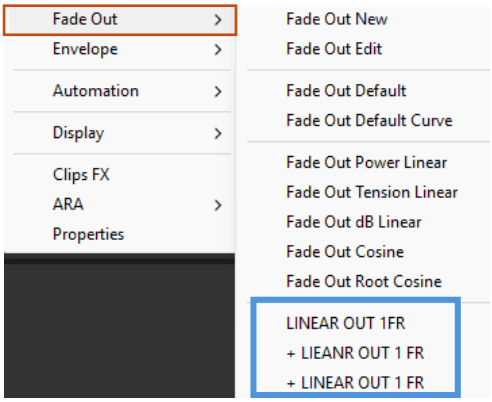


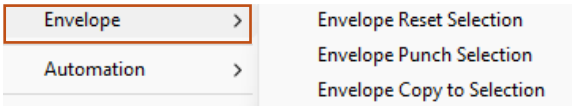


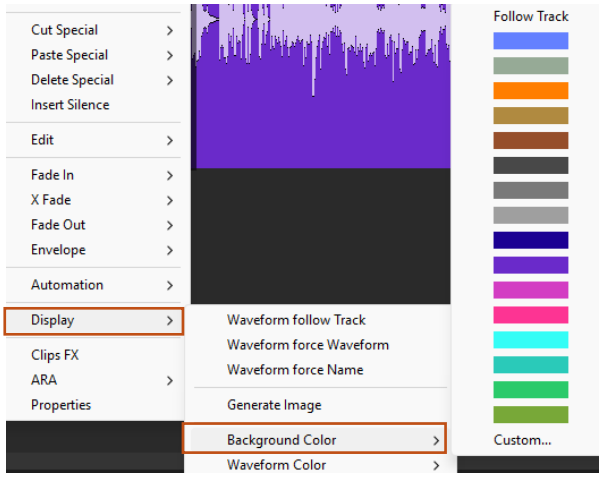


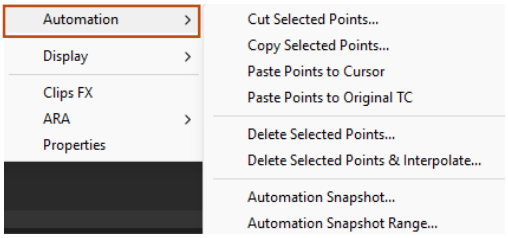


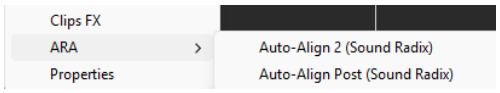








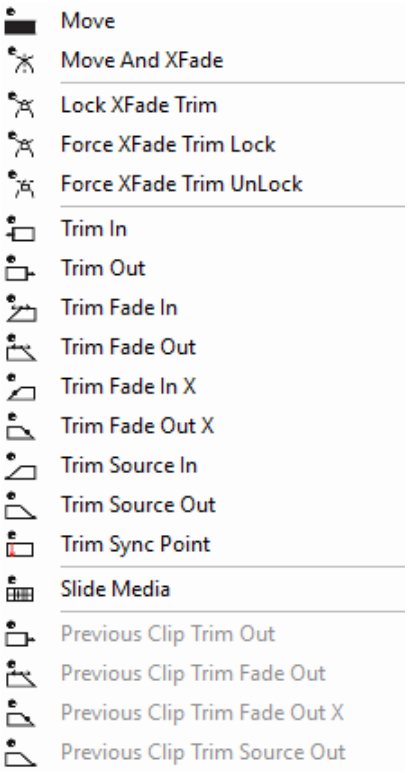




Note: Third party ARA2 plugins are optional

Jog-Wheel Editing

A number of editing actions may be undertaken on a selected Clip or group of Clips using a jog-wheel on a **Compatible** external hardware controller.
First select the Clip or group of Clips, then select the desired Jog-Wheel Editing Mode from:
Edit > Jog-Wheel Editing >



Now simply move the jog wheel to **Move**, **Trim**, **Slip** or **Slide** the Clip(s)
The last four options are included for mapping to physical buttons on the controller.
Pressing the **Spacebar** or **Enter** confirms the change(s), **Esc** cancels.

Edit Command highlights:

Further **Edit**ing commands are to be found on the main **Edit** menu. **Please see: Edit on page 717**

Undo Pyramix keeps Track of all edit decisions and operations so they can be undone if necessary. This menu item shows the name of the last operation. To undo this operation, simply click on the Undo (operation) menu item and the listed operation will be undone. Whenever an item is undone, it immediately shows up as the most recent item in the Redo list.

Undo History Pyramix keeps Track of the most recent edit decisions and operations and shows them here in a sub-menu. These are listed from the most recent at the top, to the oldest at the bottom of the list. To undo a whole block of operations, click on the name of the oldest operation and everything since that time (from that point in the list to the top of the list) will be undone. The name of the next operation in the list will be shown as the next Undo item, and all the items that have been undone are immediately added to the **Redo History** list. The size of the undo history is set to 32 steps by default, but it can be adjusted in the **All Settings > Settings > Application > General** page.

Redo If an operation has been undone using the **Undo** commands in this menu, the most recently undone operation will be shown here. To **Redo** the operation, simply click on **Edit > Redo** and the operation will be Redone. Whenever an item is Redone, it immediately shows up as the most recent item in the **Undo** list in this menu. The next edit operation carried out in Pyramix will then purge this item since the operation could cause a conflict with previous operations and therefore renders the **Redo** invalid.

Redo History Pyramix keeps Track of the most recent operations that have been undone, and shows them here in the **Redo History** sub-menu. To **Redo** a whole block of operations, click on the name of the oldest operation and everything since that time (from that point in the list to the top of the list) will be Redone. The name of the next operation in the list will be shown as the next **Redo** menu item, and all the items that have been Redone are immediately added to the **Undo History** list. The next edit operation carried out in Pyramix will then purge this list since the operation could cause a conflict with previous operations and therefore renders the **Redo** list invalid.

Delete This command deletes the selected Clip or Region. When a selection is deleted, other material on the Track behaves according to the current **Remove** mode setting.

Cut Cuts the current selection from the project and places it on the Clipboard. When a Selection is **Cut**, other material on the Track behaves according to the current **Remove** mode setting.

Copy Copies the current selection from the project and places it on the Clipboard

Paste>

Paste to Cursor Inserts the contents of the Clipboard starting at the current Playhead Cursor position. When the contents of the Clipboard is Pasted, other material on the Track(s) behaves according to the current **Insert** mode setting.

Paste Tail to Cursor Inserts the contents of the Clipboard ending at I.e. immediately before, the current Playhead Cursor position. When the contents of the Clipboard is Pasted, other material on the Track(s) behaves according to the current **Insert** mode setting.

Paste Sync Point to Cursor Inserts the contents of the Clipboard with the first sync point in the Clipboard contents at the current Playhead Cursor position. Depending on where the first sync point is, the material pasted may start, end or straddle the current Playhead Cursor Position. When the contents of the Clipboard is Pasted, other material on the Track(s) behaves according to the current **Insert** mode setting.

Paste & Place Opens the Placement Tool with extensive placement options. **Please see: The Placement Tool on page 194**

Paste to Original TimeCode If the Clipboard contains a single Clip, insert this at its original TimeCode * Works differently with Clips and Range Selections. If the Clipboard contains a single Clip this will be pasted to its original TimeCode. If the

Clipboard contains more than one Clip or a selection of a Clip or Clips this will be pasted to the TimeCode at the beginning of where the selection was made on the next Track(s) where there are no Clips which would be overwritten.

Paste to End of Selection Inserts beginning of contents of Clipboard to end of current selection.

Fill Selection This command will substitute the Clipboard contents for the selected Clip or Region for the duration of the Clipboard contents. No Ripple of following Clips will occur.

Replace Selection This command will substitute the Clipboard contents for the selected Clip or Region and will ripple all subsequent Clips if the duration of the clipboard contents is greater or shorter than the selected Clip or Region.

Loop Selection This command will substitute a loop of the Clipboard contents within the selected Clip or Region boundaries, creating a 10ms cross-fade between the inserted iterations of the Clipboard contents. No ripple will occur.

Note: all Clips within a region's boundaries will be replaced.

Fit Selection This command allows a Clip on the Clipboard to be fitted into a user defined Region on the Timeline by stretching or squeezing it. (to maxima of 50% and 200%) This requires one of the optional Time compression/Expansion plug-ins to be present.

Delete and Ripple Deletes the current Selection forcing a Ripple to occur on all affected Tracks.

Cut and Ripple Cuts the current Selection and places it on the Clipboard forcing a Ripple to occur on all affected Tracks.

Paste and Ripple Inserts the contents of the Clipboard to the current Playhead Cursor position forcing a Ripple on all affected Tracks.

Insert Silence Inserts silence (blank space) into the current selection, forcing a ripple on all selected Tracks.

Delete and Join Deletes the currently selected Clip/Selection and ripples the end of the Clip.

Cut and Join Cuts and saves to the Clipboard the currently selected Clip/Selection and ripples the end of the Clip.

Delete and Ripple to Black Deletes the currently selected Clip/selection and ripples all following butted or crossfaded Clips.

Cut and Ripple to Black Cuts and saves to the Clipboard the currently selected Clip/Selection and ripples all following butted or crossfaded Clips.

Split This command uses the play cursor as a razor blade to split selected Clips into two Clips at the point where the play cursor crosses the selected Clips

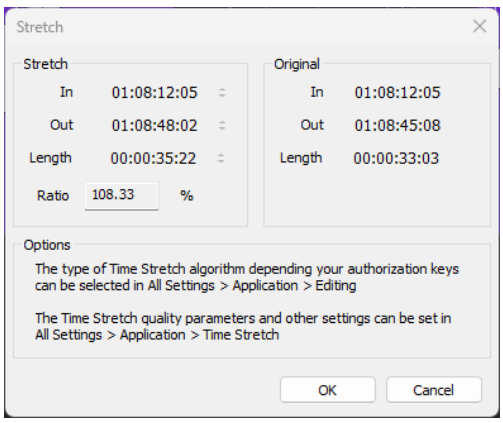
Unsplit Clips that have been **Split**, **Cut** or **Crossfaded** can now be joined back together providing they are still in sync and referencing the same media

Trim When a Region is selected, Trims the Clip(s) In and Out points to the region boundaries.

Trim In to Cursor Trims the Clip In point to the current Cursor position.

Trim Out to Cursor Trims the Clip Out point to the current Cursor position.

Stretch Opens the Stretch plug-in dialog.



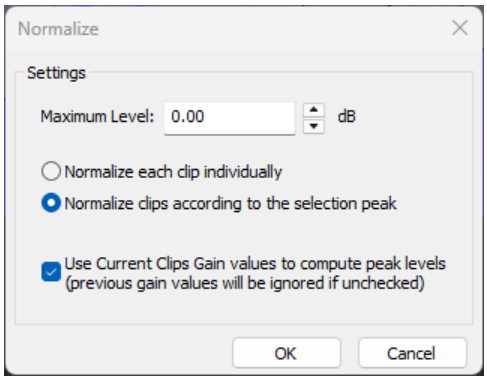
Stretch dialog

The Increment and Decrement buttons allow the In point, Out point or Length of the selection to be adjusted. The **Ratio** of stretch or squeeze is shown as a percentage. Clicking the **OK** button starts the process. **Cancel** aborts. Depending on the available authorization keys, the Time Stretch algorithm can be selected in: **All Settings > Application > Editing : Time Stretch Tool : Selected** combo box Settings for the chosen algorithm can be made in: **All Settings > Application > Time Stretch > 'Plug-in name' Settings**

Note: The percentage of Stretch and Shrink is limited to 200% and 50% respectively.

Reverse Reverses the Clip in the Timeline so it plays backwards. (creates a new Media)

Normalize Opens the **Normalize** dialog.



Normalize dialog

The **Maximum Level** can be set by typing or using the increment / decrement buttons. The process can be applied to:

- **Normalize each clip individually**
- **Normalize clips according to the selection peak**

Clicking on **OK** starts the process. The selected **Clip** or **Clips** are examined to locate the highest peak, then the overall gain of the Clip(s) is increased so that this reaches the maximum level specified. All other selected Clips are either treated individually or raised in level by the same amount.

When in **Normalize clips according to the selection peak** mode, if the following box is checked:

- **Use Current Clips Gain values to compute peak levels (previous gain values will be ignored if unchecked)**

Then:

MaxPeak of the selection will be computed using the level of Clips:

MaxPeak = Max(peak + Level)

DeltaGainToApply = DesiredMaximumLevel - MaxPeak

And then for each Clip, of the selection:

Level = Level + DeltaGainToApply

Note: this check-box is grayed out when **Normalize each clip individually** is selected.

Normalize Example:

In this case with Maximum Level = -0.3 dB and **"Use Current Clips Gain values to compute peak levels (previous gain values will be ignored if unchecked)"** selected:

	Peak Level	Original Gain Value	New Gain Value
Clip 1	-18.0	4.0	3.8
Clip 2	-16.0	4.5	4.3
Clip 3	-12.0	-1.0	-1.2
Clip 4	-9.0	-2.6	-2.8
Clip 5	-3.0	1.0	0.8
Clip 6	0.0	-0.1	-0.3
Clip 7	-40.0	2.0	1.8
Clip 8	-20.0	4.2	4.0

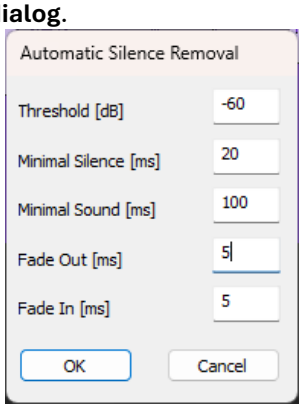
Consolidate Opens the **Consolidate** Project dialog box. **Please see: Consolidating Projects on page 466.**

Spread Opens the **Enter gap time** dialog which enables a space (silence) to be inserted between selected Clips and/or clip groups

Abut to selected This command abuts all Clips between the Mark In and Mark Out on a Track to a selected Clip between the Marks on the same Track.

Automatic Silence Removal

Edit > Automatic Silence Removal Automatic Silence Removal operates by scanning the Selection and then automatically editing it into smaller Clips by removing Regions which fall below the threshold level and meet the 'Minimal Sound' and 'Silence' criteria set in the **Automatic Silence Removal dialog**.



Automatic Silence Removal dialog

Note: This function is non-destructive of the Media file - it edits the Clip by breaking it up into smaller Clips, not by deleting any actual audio from the hard drive.

Threshold [dB]
This field determines the threshold level in dB below which material in the Clip will be removed.

Minimal Silence [ms] / Minimal Sound [ms]
Sets the shortest periods of silence and sound which can be created by removing material that drops below the threshold. Some audio material (E.g. speech) contains very short gaps. If all of these were removed, the audio would become too "chopped up". On speech the object of the exercise is usually to break it into areas where speech is present not remove small gaps between words or sentences. Some audio material may have very short transient peaks in the midst of a segment that falls below the threshold. If all of these short transients were created as Clips the end result might well sound worse than the original.
The minimum setting is 10 ms and the maximum is 5000ms (5 seconds).

Fade Out [ms] / Fade In [ms]
Sets the length of the automatic **Fade Out** and **Fade In** that will be applied to all new Clips created by the **Automatic Silence Removal** operation. The range for this setting is between 5 ms and 500ms (1/2 second).
Once the parameters have been set, click **OK**.
This process takes into account the current **Remove Mode** to determine whether to leave gaps between the newly created Clips, or to join or ripple the Clips on the Track together.
Automatic Silence Removal cannot be executed on cross-faded Clips or clips that are adjacent.

Update Original TC to Media Files Updates the Media Original TC for all selected Clips with their TimeCode position in the composition. This operation modifies the Media and is not reversible

Update Media Markers to Media Files Updates the original Media Markers for all selected Clips with the Media Marker positions in the composition. This operation modifies the Media and is not reversible

Source-Destination > (see page for details on Source and Destination)

Auto-Edit Source to Destination

Executes the appropriate Source/Destination 2, 3 or points editing operation depending on the Gates status

Overwrite Source to Destination

Overwrites the content between the Destination Track Group Gates with the content between the Source Track Group Gates

Insert Source to Destination

Inserts the content between the Source Track Group Gates to the Destination Track Group Gates

Replace Source to Destination

Replaces the content between the Destination Track Group Gates with the content between the Source Track Group Gates by rippling the Destination

Fit Source to Destination Replaces the content between the Destination Track Group Gates with the content between the Source Track Group Gates by stretching the Source

---

Auto Set Destination Gate In after Edit

When this option is checked (enabled), the Destination Gate In point is automatically set to the current Gate Out point after any Source-Destination operation

Auto Select Destination after Edit

When this option is checked (enabled), the Destination Track Group is automatically selected after any Source-Destination operation

---

Limit 1 Gate Sources to End/Beginning of Clip

When this option is checked (enabled), then the Source material between the Source Gate and the end of the Clip under the Gate instead of the whole Track is copied to the Destination

---

3 Gates Auto-Edit does Overwrite

When this option is checked (enabled), then when 2 Gates are set in a Source and 1 is set in the Destination then AutoEdit performs an Overwrite operation.

3 Gates Auto-Edit does Insert

When this option is checked (enabled), then when 2 Gates are set in a Source and 1 is set in the Destination then AutoEdit performs an Insert operation

---

Automation Unchanged for Source Track Groups
Automation Off for Source Track Groups
Automation Play for Source Track Groups

Note: For the above options: If the main Automation Mode is **Write**, then this mode is automatically changed to **Unchanged**, **Off** or **Play** when a **Source Track Group** is selected, and changed back to **Write** when any other **Track Group** is selected (typically the **Destination** one).

Note: When the following modes are enabled:

- **Automation Off for Source Track Groups**
- **Automation Play for Source Track Groups**

Then this also affects the **Enable Cut/Copy/Paste Automation mode** (set to **Off** for Source Tracks).

Automation Editing>

Enable Automation Editing Enabled By Default**.** Enables Timeline Automation Editing. Mode is determined by the next three entries:

Link to Media Content When enabled automation data is linked to the content so that if the Media Content is slipped the Automation data moves with it.

Cut/Copy/Delete Displayed Automation Will only affect Automation Curves visible in the Timeline when Editing

Cut/Copy/Delete Whole Strip Automation Enabled By Default. Will affect ALL Automation, even the curves not visible currently in timeline Track(s) when editing.

Erase Points on Cut/Delete Erases all points contained within the selection. Does not add Automation points to the selection boundaries.

Delete and Interpolate on Cut/Delete Enabled By Default. Interpolates a curve from the start of the selection to end of the selection.

Delete and Maintain on Cut/Delete Does not interpolate the curve from start to end of the selection. Therefore maintains a flat curve on Cut or Delete.

Jog-Wheel Editing>

A number of editing actions may be undertaken on a selected Clip or group of Clips using a compatible jog-wheel on an external hardware controller.

First select the Clip or group of Clips, then select the desired Jog-Wheel Editing Mode from the choice of:

Move
Move And XFade

Lock XFade Trim
Force XFade Trim Lock
Force XFade Trim Unlock

Trim In
Trim Out
Trim Fade In
Trim Fade Out
Trim Fade In X (Symmetrically)
Trim Fade Out X (Symmetrically)
Trim Source In
Trim Source Out
Trim Sync Point

Slide Media

Previous Clip Trim Out
Previous Clip Trim Fade Out
Previous Clip Trim Fade Out X (symmetrically)
Previous Clip Trim Source Out

Now simply move the jog wheel to **Move**, **Trim**, or **Slide Media** of the selected Clip(s)
Pressing the **Spacebar** or **Enter** confirms the change(s), **Esc** cancels.

Editing Modes > Insert Mode >

Overwrite When checked, any Clip placed so that it overlaps an existing Clip will overwrite the part of that Clip where the two overlap.

Insert Track When checked, any Clip placed on a Track will be inserted into the Track and will ripple all other material on the Track later in time (to the right) by the length of the Clip being inserted.

Editing Modes > Remove Mode >

Remove When checked any selected material will simply be removed from the Timeline. Everything else will be left intact and in the same place.

Remove and Ripple When checked any selected material will be removed from the Timeline. Everything else to the right (after) the removed material will be Rippled (moved) to the left (earlier) to take up the space left by the removed material.

Editing Modes > Snap Mode >

Don't Snap No snap mode set. This mode doesn't affect the behavior of objects placed on a Track. Behavior follows the existing Insert and Remove modes.

Head to End This mode will cause the beginning of any Clip placed on a Track to snap to the end of the last Clip on the Track, abutting the head of the new Clip to the end (tail) of the last Clip.

Tail to Beginning This mode will cause any Clip placed on a Track to snap to the beginning of the first Clip on the Track, abutting the tail of the new Clip to the head of the first Clip.

Head to Nearest This mode will cause any Clip placed on a Track to snap the head of the Clip to the nearest edit point or mark on the Track. This includes the head or tail of existing Clips on the Track, as well as the Play Head Cursor, Mark In, Mark Out, Named Markers, or CD Marks. The Clip will interact with existing Clips according to the Insert Mode setting.

Tail to Nearest This mode will cause any Clip placed on a Track to snap the tail of the Clip to the nearest edit point or mark on the Track. This include the head or tail of existing Clips on the Track, as well as the Play Head Cursor, Mark In, Mark Out, Named Markers, or CD Marks. The Clip will interact with existing Clips according to the Insert Mode setting.

Snap to Original TimeCode This mode will cause any Clip placed on a Track to snap the head of the Clip to the time location represented by the Clips original TimeCode. The Clip will interact with existing Clips according to the Insert Mode setting.

Library Editing (available when a library is available and open)

Library Cut
Library Copy
Library Copy Trimmer Selection
Library Paste
Library Paste with Media

Auto-Ripple When this option is checked (enabled) all **Insert** or **Remove** operations ripple the rest of the Track

Auto-Crossfade When this option is checked (enabled) the default cross-fade (defined in the Fade Editor Tab Window is applied to any Paste or Source-Destination operation

Update Original TC on Move When this option is checked (enabled) the original TimeCode stamp of any copied/move selection is updated to the position it was in before the current move

---

Snap >

Snap Off When this option is checked (enabled), Snap mode is disabled

Snap to Edits When this option is checked (enabled), Snap mode is set to Edits

Snap to Scale When this option is checked (enabled), Snap mode is set to Scale

Snap to Feet Scale When this option is checked (enabled), Snap mode is set to Feet Scale

Snap to Bars & Beats Grid When this option is checked (enabled), Snap mode is set to Bars & Beats Grid

---

Snap Cursor When this option is checked (enabled), the Cursor is also snapped following the current mode

---

Snap Region Selection When this option is checked (enabled), the Selection is also snapped following the current mode

---

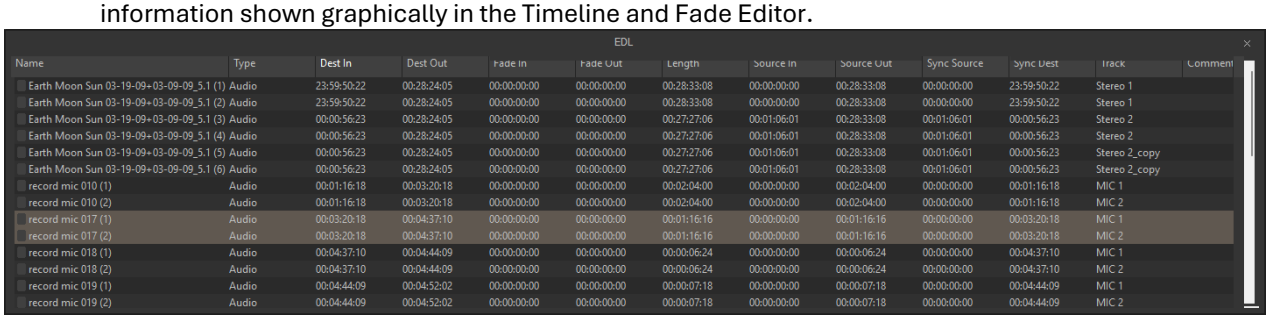
Snap Selection Head When this option is checked (enabled), Snap mode is set to Head of selection

Snap Selection Tail When this option is checked (enabled), Snap mode is set to Tail of selection

Snap Selection Sync Point When this option is checked (enabled), Snap mode is set to Sync Point of Selections

EDL Tab Window

The EDL (Edit Decision List) Window, is a textual and numeric representation of the same information shown graphically in the Timeline and Fade Editor.



Changes made here are reflected in the Timeline and vice-versa The list shows information concerning the Clips in the form of a list of text and TimeCode fields, most of which can be edited. This provides an alternate way of viewing and editing the composition. To edit a field, click in it to produce a cursor, or drag across the text in the field to select it, then type the desired information using normal text entry procedures. Fields can be adjusted in width in the usual Windows way. Clicking in a Field label will sort all entries in the list in ascending order, sorted on that field. A second click sorts in descending order. Fields available in the Edit Decision List Panel are:

Field	Description	Editable
Name	Clip Name	Yes
Type	Type of Clip(e.g. audio, video, midi etc.)	No
Dest In	Clip's In time in the Timeline	Yes
Dest Out	Clip's Out time in the Timeline	Yes
Fade In	Clip's Fade In length	Yes
Fade Out	Clip's Fade Out length	Yes
Length	Length of Clip in the Timeline	Yes
Source In	Media TimeCode value at Master Clip's Head	Yes
Source Out	Media TimeCode value at Master Clip's Tail	Yes
Sync Source	Media TimeCode value at the Clip's sync point	Yes
Sync Dest	Clip's sync point time in the Timeline	Yes
Track	Name of Track Clip is assigned to	No
Comment	Comments about the Clip from the properties page	Yes

Absolute Sources in EDL View

When **View Sources in EDL View** is checked in the **Settings > All Settings > Application > TimeLine Layout** page, the original **Source In**, **Source Out** and **Sync Point** times are shown in **Absolute Time** in the **EDL** View.

Absolute time is the incoming TimeCode recorded at the audio capture. When this mode is disabled, the default start time of TimeCode for the captured Clip is 00:00:00:00.

Source - Destination Editing

Concept

Source - Destination Editing is a powerful method of viewing and editing material especially applicable to editing multiple, multi-track, takes into one, 'ideal' take. Special Source and Destination Track Groups allow multiple Timelines to be visible simultaneously. Each Source and destination Timeline has its own zoom level and Playhead cursor. By taking advantage of the 'Collapse' feature, editing 48 track source material becomes almost as simple as editing mono or stereo.

Source - Destination editing can also be extremely useful in broadcast and tracklaying applications. Pyramix can have as many Clip editors as you wish. Just create some Tracks, group them, set the group as a Source. Set the Clip Editor Track or Tracks as '**always visible**' (in the

Tracks Tab Window, so each Clip Editor always stays on top of the composition and that's it.
If there is no Destination group in your composition then the section between the Gates in the Source Group/Clip Editor is sent to the positions delineated by the **Mark In**/**Mark Out** on the selected Track(s) in the composition.

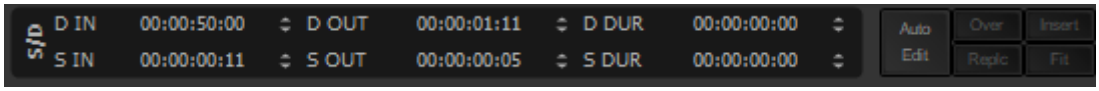
Setting up a Source - Destination Environment

Templates
The quickest and easiest way to get started with Source - Destination editing is to use one of the supplied **Templates.** Choose the one which most closely matches your requirements, modify to taste and save as a **Template** for future use.

Starting from Scratch
In the Track Groups window, Create as many Source groups as there are alternate versions of the material you are editing and select their type as **Source**.

> **Tip:** Create a Group, select its type as **Source** then choose **Tracks > Duplicate Selected Track Group** repeatedly until you have the required number of **Source** groups.

Create as many Destination groups you want to edit to (generally only one) and select its (their) type as **Destination**.
Create as many **Tracks** for each source take as you need for your editing and associate a **Group** to each of them.
Set these groups as **Keep Cursor**, **Free Zoom**, **Auto-Solo** and **No Selection**.
Select the option **Tracks > Auto Select Tracks**.
Show the Source - Destination Toolbar, **View > Scales > Toolbars > Source - Destination**.



Source-Destination Timescale Ruler Toolbar

You are now ready to proceed with Source - Destination Editing the following manner:
Source and Destination Groups have special markers called **Gate In** and **Gate Out** which can be Set, Nudged and Auditioned:
Set the selected Track Group Gate In/Out of the selected Track Group to Cursor with the menu **Cursor & Marks > Gate In/Out to Cursor**

To remove a Gate set it again in the same position.
Gates can be dragged with the mouse by clicking on them and moving.

Gate colors:
By default, **Gates** are displayed in **Grey**.
The **Source Gates** currently selected for the next edit operation are displayed in **White**.

The **Destination Gates** currently selected for the next edit operation are displayed in **Black**.
The current Source and Destination Gates for the next edit operation are the selected group Gates or if no groups are selected the last group where Gates have been set/removed/modified.
In 3 point editing, the “virtual” missing gate of the group that has only one gate set is displayed in Grey.

Set the Cursor to the selected Track Group Gate In/Out
Cursor & Marks > Cursor to Gate In/Out
Zoom to the selected Track Group Gate In/Out.
Cursor & Marks > Show Gate In/Out
Nudge the selected Track Group Gate In/Out with the menu selection
Cursor & Marks > Nudge Gates > Nudge Gate In/Out to Left/Right.
Each nudge operation can be auditioned automatically by setting **'Audition after Nudge'** in the **Settings > All Settings > Application > Editing** page

Audition the selected **Track Group Gate In/Out Pre/Through/Post** with the menu selection:
Machines > Internal Machine > Audition > Audition Gate In/Out Pre/Audition/Post.
The space between **Gate In** and **Gate Out** can be selected with the menu **Selection > Select between Gates**.

Positions of **Gate In** and **Gate Out** for each selected groups can be displayed and manually modified with the **Source-Destination Toolbar** (If not already visible show with **View > Scales > Toolbars > Source-Destination**)

Once Gates In and Out have been set, Source - Destination operations can be applied FROM either the selected Source Track Group or the last Source Track Group whose Gates have been set to either the selected Destination

Track Group or the last Destination Track Group whose Gates have been set.
Both Source and Destination Gate In and Gate Out can be set or removed
(by setting them twice at the same position) to perform any combination of Source - Destination editing operation described in the table below.

When Gates are set the following Source-Destination operations available in the Edit menu (**Edit > Source-Destination > [edit command from list below]** can be applied:

- **Auto-Edit Source to Destination**
- **Overwrite Source to Destination**
- **Insert Source to Destination**
- **Replace Source to Destination**
- **Fit Source to Destination**

When the Source has only 1 Gate then the Region to edit can be automatically adjusted to the end (or beginning in case of a single Gate Out) of the Clip under the Gate when the edit operation is performed. This is available by choosing the menu item:
Edit > Source – Destination Settings > Limit 1 Gate Sources to End/Beginning of Clip.

When the Source has 2 Gates set and the Destination has 1 Gate set, then the behavior of the Auto-Edit Source to Destination operation can be chosen between Overwrite or Insert by choosing the menu item:

Edit > Source- Destination Settings > 3 Gates Auto-Edit does Overwrite
or:
Edit > Source- Destination Settings > 3 Gates Auto-Edit does Insert

The menu item:
Edit > Source - Destination Settings > Auto Set Destination Gate In after Edit allows the Destination Gate In to be set to the previous Destination Out point after any Source-Destination operation. This automatically prepares the Destination for the next operation. The Destination is also automatically centered around the new Gate In.

The menu item **Edit > Source - Destination Settings > Auto Set Destination Gate In after Edit** allows the Destination Track Group to be automatically selected after any Source-Destination operation.

All these operations works independently of the **Auto-Ripple** mode (they have their own overwrite/ripple modes described in the table on the next page) but follow the Auto-Crossfade settings accessible in the menu **Edit > Auto-Crossfade**.

Keyboard Shortcuts
Most **Source - Destination** operations are available as **Keyboard Shortcuts.**

2,3 and 4 Point Edits

Source-Destination operations	Source Gate In OR Gate Out Only	Source Gate In & Gate Out
Destination **Gate In OR Gate Out Only**	**Auto-Edit:** Performs **2 points** editing by doing the following **Overwrite** operation. **Overwrite:** Copies material **FROM** Source Gate In to the end of the Track or from start of Track to Gate Out **TO** Destination Gate In or Destination Gate Out by overwriting Destination material	**Auto-Edit:** Performs 3 point editing by doing the following Overwrite or Insert operation depending which one is selected in the menu **Edit > Source-Destination Settings**. **Overwrite:** Copies material between Source Gate In and Source Gate Out to Destination Gate In or Destination Gate Out by overwriting Destination material **Insert:** Copies material between Source Gate In and Source Gate Out to Destination Gate In or Destination Gate Out by rippling Destination material
Destination **Gate In & Gate Out**	**Auto-Edit:** Performs 3 points editing by doing the following **Overwrite** operation. **Overwrite:** Copies material from Source Gate In or Source Gate Out to Destination Gate In and Gate Out by overwriting Destination material	**Auto-Edit:** Performs 4 point editing by doing the following **Replace** operation. **Overwrite:** Copies material between Source Gate In and Source Gate Out to Destination Gate In by overwriting Destination material. **Insert:** Copies material between Source Gate In and Source Gate Out to Destination gate In by rippling Destination material **Replace:** Replaces material between Destination Gate In and Gate Out by material between Source Gate In and Source Gate Out by rippling the Destination material **Fit:** Replaces material between Destination Gate In and Gate Out by material between Source Gate In and Source Gate Out by stretching or squeezing the Source material

Fade Editor

Fade Editor Tab Window

The Pyramix Fade Editor offers several methods for creating fades and cross-fades. Fades can be made graphically by simply clicking and dragging appropriate points on the display or by using a specialized set of faders and buttons or by directly entering numeric data. A comprehensive set of auditioning options is provided together with libraries for user defined fade shapes and fades.

The Fade Editor always displays the fades for the current selection in the main Editor. The nearest fade to the click point is automatically selected.

Fade Editor Tab floating Window

Toolbar

Contains these buttons. If your Fade Editor has a different selection you can change that in **Settings > All Settings > Application > Desktop Layout : Fade Editor** :

Accept & Close Editor (Close the Fade Editor and keep the changes, in effect an '**OK**' button)

Restore & Close Editor (Restore the fade to its state prior to opening the Fade Editor or selecting a new fade, effectively a **Cancel** button)

Undo last fade change (is only valid with fade editing, not the same as undo in the editor)

Select/Edit Previous Fade

Select/Edit Next Fade

Zoom around the current Fade (Reset Zoom)

Zoom In - Note: Fade Editor zoom can be linked to the timeline zoom under Pyramix Settings > Application > Editing > Fade Editor > Redirect Timeline Play and Zoom Shortcuts to Fade Editor

 Zoom Out

 Crossfade (Makes an asymetric fade symmetrical by using the fade length and curve from the side of the crossfade that is not selected and applying it to the selected side. E.g. to create the mirror image of a fade out select the incoming clip and choose **Crossfade**)

 Show/Hide Faders & Control Section – in this case **ON** (light square around the icon)

 Show/Hide Parameters & Options Section – in this case **ON** (light square around the icon)

 Audition Crossfade (with pre and post roll)

 Audition Crossfade around the Reference Point (white play-line - with pre and post roll)

 Audition Fade Out with Curve (with pre roll)

 Audition Fade Out without Curve (with pre roll)

 Audition Fade Out after Fade (with post roll)

 Audition Fade Out up to the Reference Point with Curve (with pre roll)

 Audition Fade Out up to the Reference Point without Curve (with pre roll)

 Audition Fade Out from the Reference Point without Curve (with post roll)

 Audition Fade Out Original Material (with pre roll)

 Audition Fade In with Curve (with post roll)

 Audition Fade In without Curve (with post roll)

 Audition Fade In after Fade (with pre roll)

 Audition Fade In from the Reference Point with Curve (with post roll)

 Audition Fade In from the Reference Point without Curve (with post roll)

 Audition Fade In to the Reference Point (with pre roll)

 Audition In Original Material (with pre roll)

Undo Note:
By default **Undo** in the fade editor is restricted to the last action only in order to conserve memory. In a complex mix the sheer number of actions to be remembered for undo can lead to excessive memory consumption. This behavior can be changed in **Settings > All Settings > Application > Editing : Fade Editor**. Simply check the box for **Enable Undo for every Fade Editor change**.

The Graphical Display

Consists of the following elements:

- The TimeCode scale displaying the Zoom range on its left.
- A Reference Point which is set by default at the edit point or in the middle of the (X) Fade. This marker can be moved by clicking in the TimeCode Scale and is just a Reference Point for Auditioning (see above) or for Auto-Center (see below)

- All Tracks or a selection can be displayed (see Parameters & Options below)
- At the left of each Track display The Track name of each Clip is shown, with a toggling **Edit On/Off** selector. This allows one or more Clip's/Fades to be excluded from further modification.
- A Vertical Scrollbar navigates through hidden Tracks if any
- An Horizontal Scrollbar navigates before and after the Fade position
- The outgoing and incoming Clip fades are displayed with curves
    - The Fade Position can be moved by clicking and dragging within the Fade area (Cursor changes to hand)
    - The Fade Length can be changed by clicking and dragging on the left or right side of the Fade area. (cursor changes to **<|>**)
    - The Media of the Clips can be moved by clicking and dragging outside the Fade area. (Cursor changes to hand with tape reel)
    - The Fade Curves can be modified by clicking and dragging on the Bezier Control Point Handles in the Fade black box

Waveform Color Change
The waveform color can be used to indicate where the main Playhead Cursor is in relation to the **Reference Point**. When the **Update waveform color with cursor position** check box is ticked in **Settings > All Settings > Application > Editing : Fade Editor** the waveform(s) color will change to the color chosen in **Settings > All Settings > Application > TimeLine Layout : Clips & Waveforms - FadeEditor Waveform Position Color** according to the location of the main Playhead Cursor and the **Reference Point** (default is centre of crossfade)

Context Menu
Right-clicking in the graphical display pops-up a context menu:

The **Fade In**, **Fade Out** and **X Fade** sub-menus offer choices of **Default** (complete or Curve Only), **Standard**, (any of the standard fade curves) and **Load** (from the list of previously saved presets)

The Faders & Control Section

Has the following controls and displays:

- The **Fade Safe** check box in the Fader section ensures (when checked) that all following fades to the right of the one being edited are left intact while editing the current fade. This enables Auto-Ripple to be used without **Auto-Ripple** while keeping Fade synchronization clean.
- When the **Force Safe** box is checked the Fade Editor forces **Fade Safe** to enabled after each edit change.
- Six **Memory Set** and six **Memory Recall** buttons store and recall all the settings in the **Fade Editor**. The recall buttons are only numbered when there are stored parameters to recall.
- **Gain** Faders, Nudge buttons (in 0.5dB steps) and Manual Entry Value Box for both **Fade Out** & **Fade In**
- **Intercept** and **Asymmetry** Faders, Nudge buttons and Manual Entry Value Box (in dB)
- **Length** Faders, Nudge buttons and Manual Entry Value Box (in milliseconds. Type an **s** after any numeric entry to obtain a value in seconds) for both Fade Out & In
    - Length of Fade Out & In can be linked by clicking the **Link** button
    - Length of Fade Out and In can be changed symmetrically (centered) by clicking the **Mirror** button.
- **Position** Faders, Nudge buttons and Manual Entry Value Box (in milliseconds, type an s after any number entry for a value in seconds) for both Fade Out & In
    - Position of Fade Out & In can be linked by clicking the **Link** button
- **Media Position** Faders, Nudge buttons and Manual Entry

- **Value** Box (in millisecond, type an s after any number entry for a value in seconds) for F**ade In**

Parameters & Options Section

In this table parameters and options may be modified by clicking on **>**.
There are these sections and fields:

Control

- **Link Length** (see above)
- **Mirror Length** (see above)
- **Link Position** (see above)
- **Fade Safe** (see above)
- **Treat Gap as Fade**. When set to **Yes** enables two Clips which are not overlapping but with overlapping Media to be edited in the Fade Editor as a fade. Default is **No**.

Display

- **Shown Tracks** offers these choices:
  - **All tracks**
  - **Follow TimeLine Display**
  - **Choice of tracks**. The number of Tracks selected in the TimeLine controls the available choices. So, if 4 Tracks are selected, there will be the option of 1, 2, 3, or 4 Tracks
- **Auto-Center**, enables automatic re-centering of the display around the Fade or Reference Point after certain operations
  - **None**
  - **Fade**
  - **Reference Point**
- **Zoom**, can be one of the following:
  - **Free**, follows only Zoom Reset, In and Out
  - **Auto-Zoom**, automatically Zooms around the current Fade after some operations
  - **Auto-Zoom / Free**, automatically Zooms around the current Fade but only when it enters the Fade Editor, thereafter, the Zoom is Free
  - **Timeline**, follows the Timeline Zoom factor
  - Choice of User defined Zoom Presets (see menu **View > Zoom**)
- **Waveform Display** Can be any of the following:
  - **Follow Project Settings**
  - **X1**
  - **X2**
  - **X4**
  - **X8**
  - **X16**
  - **X32**
  - **X64**
  - **Auto-Scale Visible**

Audition

- **Pre-Roll** from the choices defined in the **Settings > All Settings Application Playback/Record** Page
- **Post-Roll** from the choices defined in the **Settings > All Settings Application Playback/Record** Page
- **Solo**, when **On** only the edited Tracks are auditioned, when **Off** all Tracks of the composition are auditioned as well
- **Loop**, any audition operation is repeated until Stop is pressed
- **Speed**, allows choice between 100%, 50% and 25% of normal play speed for auditioning
- **Audition after Nudge**, to automatically audition the Fade after nudging any parameter

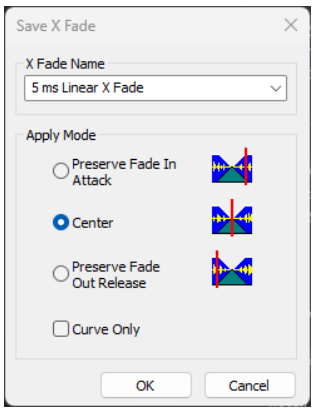
Memory

- **Set**, allows saving up to 6 temporary Fades for comparison
- **Recall**, allows recall of one of the 6 temporary saved Fades

X Presets / Out Presets / In Presets

- **Load Curve**, allows loading the Curve **SHAPE** only from a choice of:
  - **Default**
  - **Power**
  - **Linear**
  - **dB**
  - **Cosine**
  - **Root-Cosine**
  - Any **User-defined** curves
- **Load Preset**, allows loading a Fade from a choice of:
  - **Default** Fade
  - Any user defined Fades
- **Save Preset**,
- **Default** Fade
- New opens the Save X Fade or Save Fade pop-up dialog box (See below)

Save X Fade



Save X Fade dialog

The dialog box opens with the cursor in the **X Fade Name box**. Simply type a name for the new preset or choose an existing one to over-write using the dropdown list. Choose appropriate options and click **OK** or hit the **Enter** key to save the preset.

Apply Mode Options
A number of options are provided which affect the way the Fade will be applied when recalled.

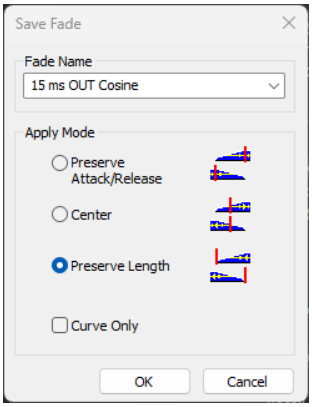
Curve Only
When this box is checked only the curve shape will be recalled and applied to the overlapping Tracks for the duration of the existing cross-fade. If left unchecked, the original duration and positions of the start, end and reference point will also be applied to the existing cross-fade.

Preserve Fade In Attack
Fade will be aligned to the left, relative to the edge of the Clip, when recalled.

Center
Fade will be centered, relative to the edge of the Clip, when recalled

Preserve Fade Out Release Fade will be aligned to the right, relative to the edge of the Clip, when recalled.

Save Fade In / Fade Out



Save Fade dialog

The dialog box opens with the cursor in the **Fade Name box**. Simply type a name for the new preset or choose an existing one to over-write using the dropdown list. Choose appropriate options and click **OK** or hit the **Enter** key to save the preset.

Apply Mode Options
A number of options are provided which affect the way the Fade will be applied when recalled.

Preserve Attack or Release
Fade will be aligned to the left, relative to the edge of the Clip, when recalled.

Center
Fade will be centered, relative to the edge of the Clip, when recalled

Preserve Length
Fade will be aligned to the right, relative to the edge of the Clip, when recalled.

Mixer

Overview

The Pyramix Mixer has evolved into an extremely powerful tool kit. The extensive range of components and the routing and automation possibilities are extensive. The basic principles are simple and logical and follows standard audio signal flow logics. Signals enter mixer strips at the bottom, go through various controls (fader, mute etc) and processing to the top of the strip where they are routed and or panned to a bus or buses and auxes. The buses run horizontally, and the sum of the bus signals enters a bus master strip at the top and moves down through a master fader and other controls to the output(s). Native VS3, VST and External Insert plug-in effects can be inserted in Input Strips, Aux Send Bus masters, Objects, Mix- Groups and Mix Buses.

The flexibility of the mixer allows you to have several different outputs (master bus mixes) with multiple different formats fitting perfectly in todays complex workflows (e.g. multi-Stereo, Objects, Mono, 7.1.4, 9.1.6 etc)

> **Note:** For low latency foldback when recording an artist the Direct Monitoring Strip type should be used.

The mixer can also take the output from an ASIO/WDM enabled application and merge it into the MassCore engine and I/O and send audio to the ASIO enabled application.

To facilitate copy and paste between projects and/or importation of AAF/OMF/EDL etc. projects the Mixer has a shared mode where the same mixer is used for more than one open Project, which allows a nearly instant swap from one project to another.

If you are new to Pyramix, please use one of the simpler mixer templates to become familiar with the basic features.
E.g. **in the "I am new to Pyramix" folder;** the "Basic 2 mono 2 stereo Stereo bus" template
Bus Architecture and Panning
For Pyramix Version15 and subsequent versions the mixer has been modified and enhanced extensively.multi
Important! When opening elder Pyramix projects, **Legacy Strips and Busses** will be transformed into the structure of Strips and Busses existing in Pyramix since version 10. It is not possible anymore to use old legacy strips and busses from Pyramix 9 and elder. You may save your project in and older Pyramix version, be aware that functionalities that did NOT exist previously will bot be available in the elder Pyramix Project.

Bus Architecture
The current type of Mix/Aux bus is the **General Mixing Bus**. This comes in five varieties:

- Mix Bus
- Mix Group
- Aux Bus
- Aux Group
- Object Bus

The **Object Bus** is provided for sending any Input Strip's output(s) to a specialized Object Bus for new 3D, immersive formats such as Dolby Atmos.
The bus type is selected from a dialog when the bus is added.

Aux Group/Aux Bus versus Mix Group/Mix Bus
In Pyramix **Aux Buses** are intended solely for foldback purposes internal or external, to a collection of sources, with the bus output re-routed back to an input strip. Effects (plugins) can be inserted into **Aux** buses in order to enhance the artists experience.
Aux Groups or Mix-Group buses are intended to be used as conventional Sub-groups and, of course, can have internal VS3 and VST effects inserted and or external inserts.
Using **Mix Group** buses for mix effects ensures that the full automatic (and manual) delay compensation features will function correctly.

Mix Busses are the master fader outputs (physical outputs with a plugin section). **All busses Group or Bus** can be monitored within the Pyramix **monitoring section** see **page** for details

General Mixing Bus Channel Configuration
All General Mixing Buses channel configuration can be **changed or modified** at any time in the 3D Room Editor. **Please see: The 3D Room Editor on page 267**

Room Models
Two types of room model are available:

Virtual Rooms use a Stereo panning based algorithm using either a Square Root or Sin/Cos panning law extended to all three dimensions. In this mode speaker positions are fixed. This mode is designed for Film, Post Production or Music where no real world room definition is needed or known in advance and precision is needed to focus on each individual speaker.

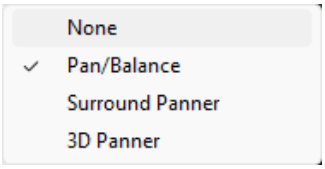
Sized Rooms use a sound in air propagation/attenuation based algorithm. In this mode speaker positions are editable. The panning algorithm uses real distances to compute levels. In this mode all speakers will output some level even if it is very low, wherever the Panner is positioned. Parameters such as Gain are only supported with Sized Room types and not Virtual Room

The room type can be switched at any time in the **Room Editor**.s

Panning Control Buses
Panning is achieved using **Panning Control Buses**. These are purely control buses, they don't process any audio and have no channels, no associated Output Strip and no I/O. Instead of having a separate panner on each Input Strip Bus Send there is one or more Panning Control Buses. Input Strip Bus Sends are assigned to Panning Control Buses or routed direct using a **Channel Router** matrix. One Panner can control several Bus sends in different formats.
E.g. when Mono, Stereo, Surround and 7.1.4 Buses are present. Equally, if it is desired to pan differently to different Buses, this can be achieved by adding more Panning Control Buses.
The Panning Control Bus user interface in each Input Strip can be switched to one of three different panner types or a direct Channel Router Matrix. Left-click on the Bus Send **Pan 1** etc. label to open the **Routing** context menu with the choice of:

Channel Router
Panner 1
Panner 2
Panner 3
etc.

Panner Types
Panner Type is selected by right-clicking on a Panner in the Strip to open the context menu and choosing (it can also be done for the **entire range of the Panner** by clicking on the right vertical banner of the mixer/Panner):
Set Panner Type The sub-menu offers the choice of:



- **None** useful if you wish to hide the panner in a Strip using a **Router**
- **Pan/Balance** (1D Panner), which gives access to three types of panning (below) plus divergence and LFE gain.
    - On a Mono strip the control is always pan.

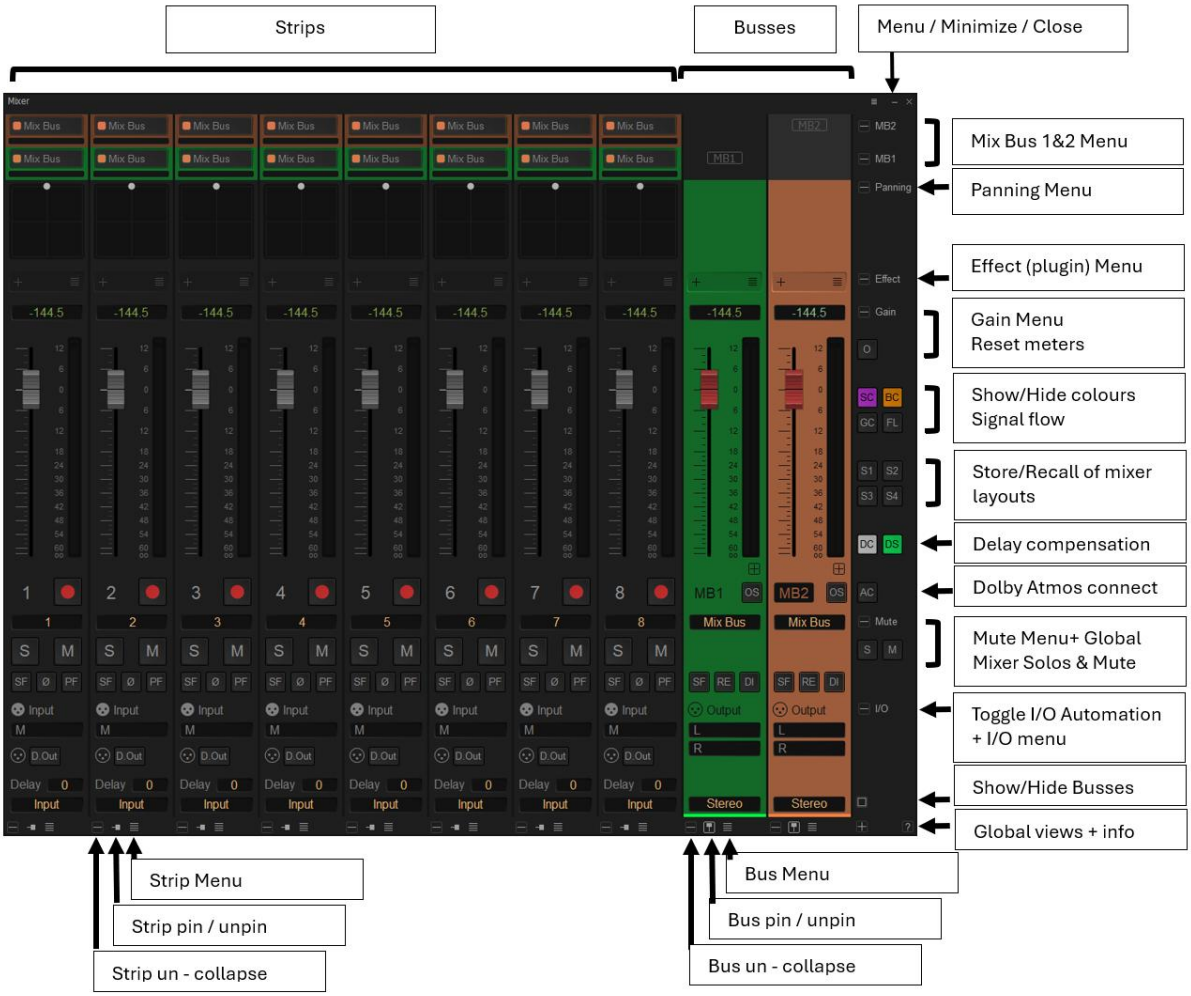
- On a Stereo strip the following choices are offered as **Dual Source Mode** (Right-click on the Panner in the Strip to open the context menu and choose: **Dual Source Mode**
- None (Hides the Panner in the Strip. Useful if you don't want to see the Panner in a Strip where the Router is in use.
- Single Pan
- Dual Pan
- Balance

- **Surround Panner**, which gives access to the standard 2D surround control (5.1, 7.1 etc) plus divergence and LFE gain.
- **3D Panner**, which gives access to the standard 2D surround control plus the Height/Z axis, divergence and LFE gain.

Note: Width control is the **Source Size** parameter when in **Single Pan** mode.

Basic Mixer

Note : The mixer TABS existing in previous Pyramix versions have been removed with the new UI, all the functions available from the TABS are now directly implemented in the mixer.



Simple 8 mono X 2 stereo mixer

Note : clicking on the – on the right banner collapses / un-collapses each section, clicking on the name of the section opens the relative menu.

Pin / Un-pin

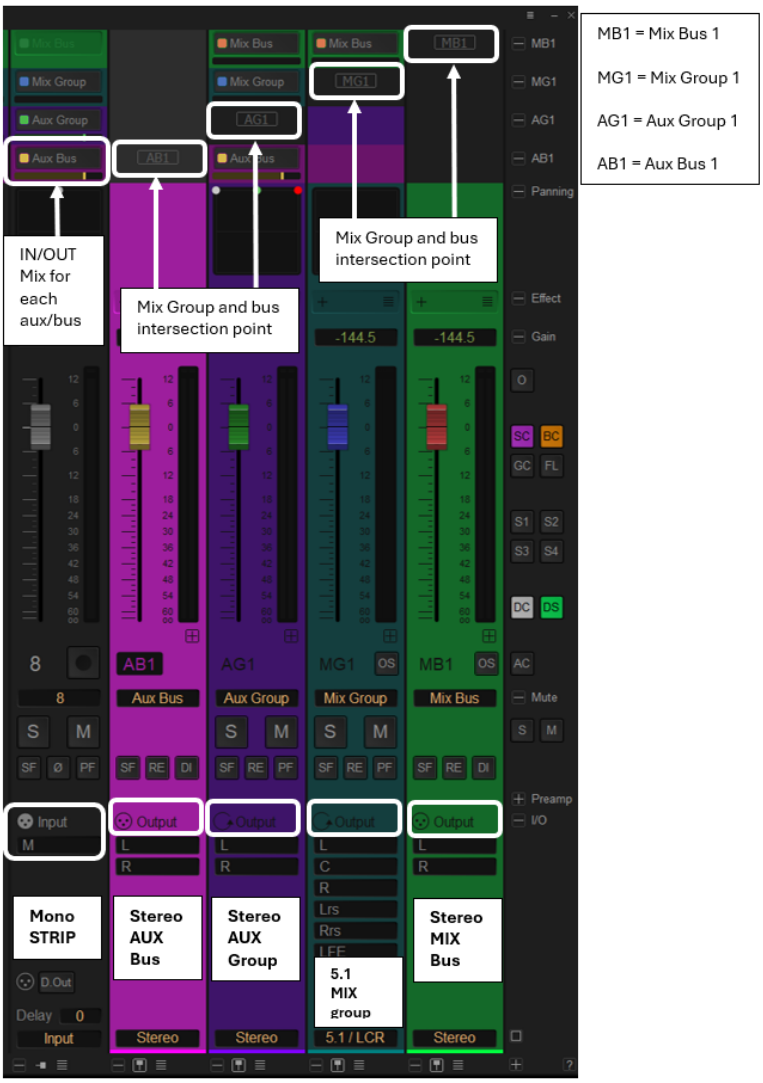
The strip/bus pin unpin function allows you to always keep the pinned strip/bus visible. One can hide strips or reduce the mixer size for fewer numbers of strips and busses to be visible, the pinned strips and busses will always remain visible.

Tip : if some strips, busses or sections of the mixer are not anymore visible because they have been hidden or collapsed by inadvertence, you can always go to the + bottom right button / menu (global views) and select **Show All** .

Colours

In the menu of each sections, one can change the colour of each strip / bus individually where applicable

Mixer Aux and Bus signal flow



1 mono Strip + AUX Bus – Aux Group + 5.1 Mix Group – Stereo Mix Bus

Mixer Rows

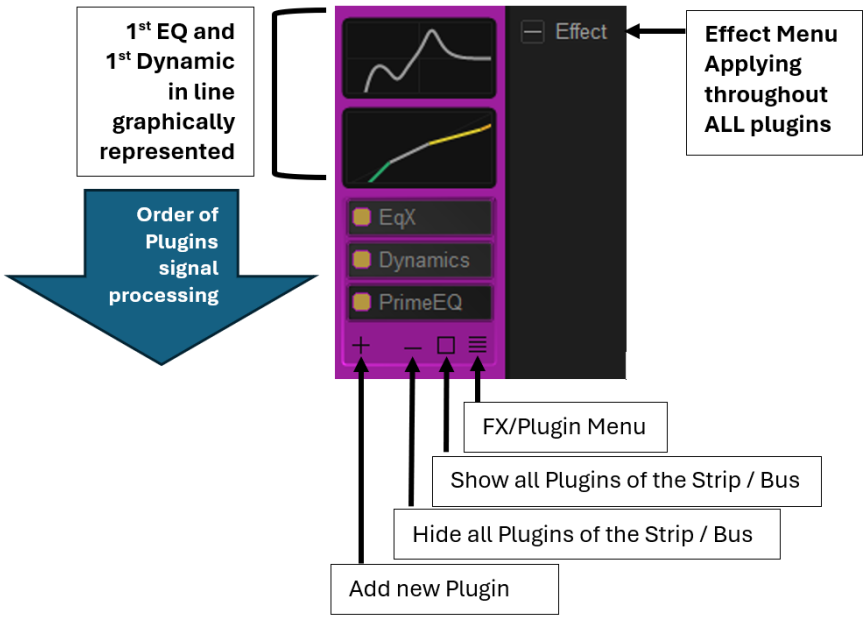
Starting at the top a mixer can contain rows as follows:

Mix & Mix Group Buses Every mixer contains one or more summing Mix Buses. Mono, Stereo and Multichannel are all available. The Mix Bus rows also contain the On/Off switch and the output meter to the target Bus(es).

Note: Mix & Mix Group Bus sends are switched **OFF** by default.

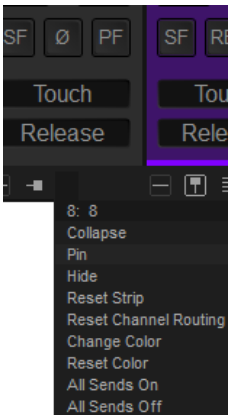
Needs update if changes are appearing in the mixer

Effects The Effects row has one or more slots per strip for Plug-ins. In Pyramix all processes are considered to be effects. Plug-ins can be either native VS3 or VST2/VST3. The effects row expands to accommodate the number of plug-ins instantiated in the strips. About more details on plugins please see page xxx



Effect / FX / Plugins section

Strip Pop-up Menus



Strip Menu pop-up

The precise contents of the Strip pop-up menu will vary according to the Strip type. The following is a selection of important functions:

Collapse Collapses the Strip to a narrower Strip. If the Strip is collapsed the **-** changes to **+**.Clicking on **+** restores the Strip to full width.

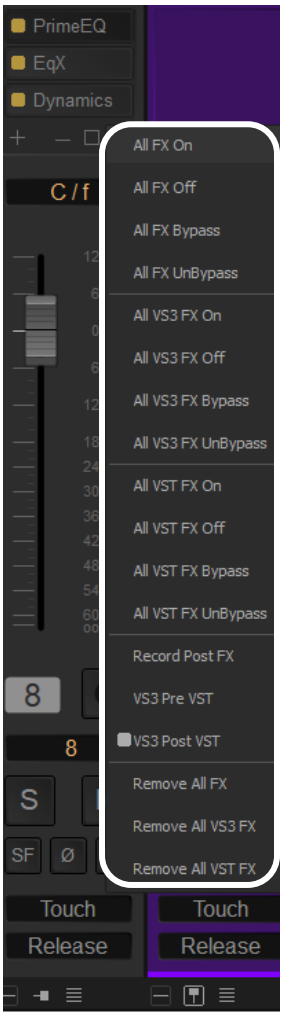
Hide Removes the Strip from the Console UI. To restore hidden Strips hover over the Mixer **+**button and select **Show All** in the **Input Strips** or **Masters** section as appropriate.

Reset Strip Resets all Strip controls to their defaults.

Reset Channel Routing Creates a diagonal unity routing when both the Strips and the Buses channel types are set to none.

The other entries are self explanatory.

FX/PLugin Menu Pop-up



All entries are self explanatory.

Note that they are affecting the selected STRIP only

Some more info on that menu can be found on page 214

Strip FX/Plugin Menu pop-up

Mixer Rows

Starting at the top a mixer can contain rows as follows:

Mix & Mix Group Buses Every mixer contains one or more summing Mix Buses. Mono, Stereo and Multichannel are all available. The Mix Bus rows also contain the On/Off switch and the output meter to the target Bus(es).

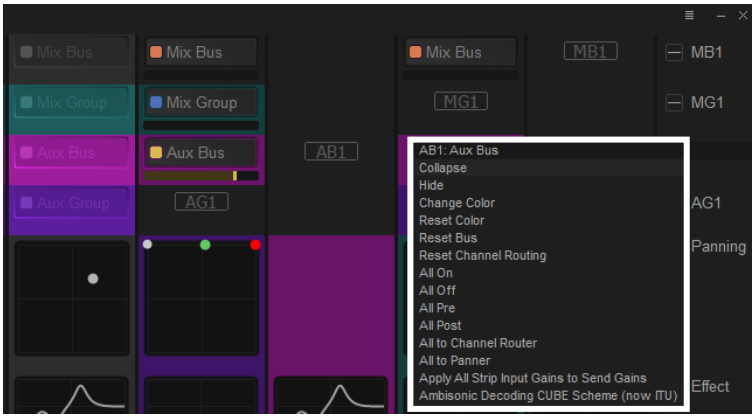
Note: Mix & Mix Group Bus sends are switched **OFF** by default.

NEEDS PIC WHEN ROUTER AND PANNER CAN BE DISTINGUISHED

Mixer & Mix Group Buses rows & Mix Bus drop-down

Aux & Aux-Group Buses If Aux and or Aux-group Buses are present in the mixer their send controls appear here.

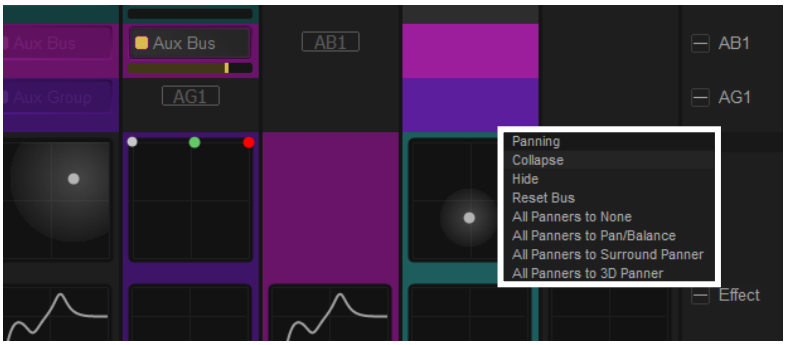
Note: Aux & Aux-Group Bus sends are switched **OFF** by default.



Aux & Aux Group Buses rows & Aux Bus drop-down

Effects The Effects row has one or more slots per strip for Plug-ins. In Pyramix all processes are considered to be effects. Plug-ins can be either native VS3 or VST. The effects row expands to accommodate the number of plug-ins instantiated in the strips.

Panning The panning row has a surround panner section in Input Strips, Mix Group and Aux Group Strips.



Aux & Aux Group Buses rows & Aux Bus drop-down

Gain The Gain section includes the Fader, Meter(s) and Record Arm button/indicator (on applicable strips).

Aux & Aux Group Buses rows & Aux Bus drop-down

Mute

The Mute row includes the Mute and Solo buttons along with Solo Safe, Phase reverse and Pre-fade on Input Strips, Repro, Safe and Dither on Aux and Mix Buses, Mute, Safe Re-Pan and Pre-Fade on Aux and Mix Group Strips.

Mute & Solo row & Mute drop-down

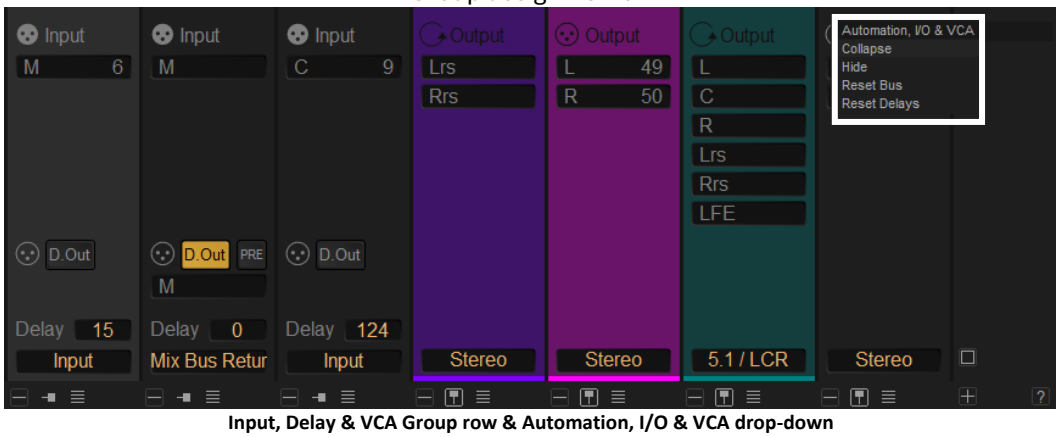
Mic Pre

Only present in a system including a Horus, Hapi, Anubis or MT 48 with an A to D card installed (for Horus and Hapi). Includes all the controls necessary to set source type, gain, phantom powering etc.

Mute & Solo row & Mute drop-down

Automation, I/O & VCA

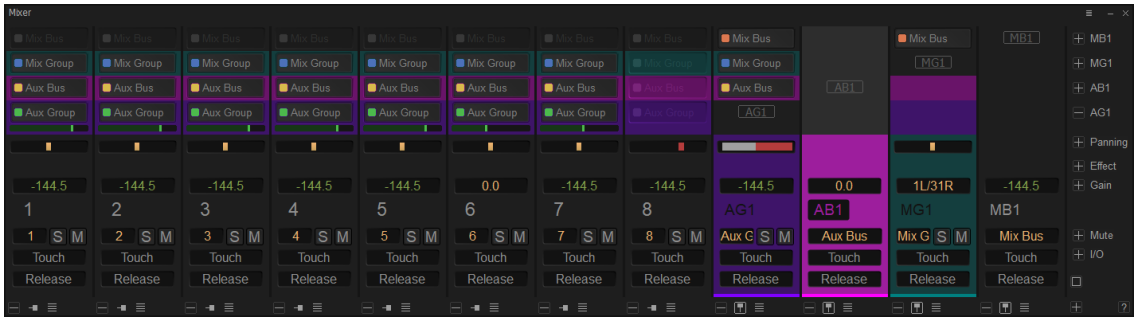
This row is modal. When collapsed it shows two Automation buttons per strip. When expanded it shows the I/O and VCA Group assignments.



Input, Delay & VCA Group row & Automation, I/O & VCA drop-down

Expand / Collapse Vertical

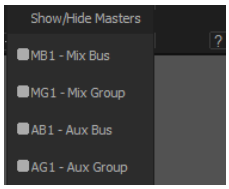
Expand / Collapse and Hide can reduce clutter by concealing unused controls. This is a simple mixer with all areas Collapsed vertically:



Simple mixer Window with all areas hidden

The small, grey **+ -** boxes on the right banner of the mixer surface toggle horizontal areas of the mixers surface shown full size or collapsed. They also pop-up context menus when the cursor is above them.

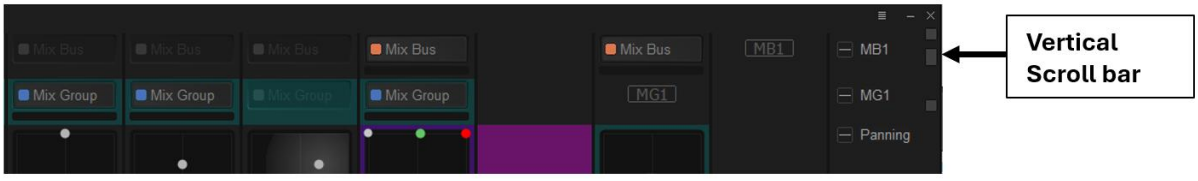
This button near the bottom of the mixer on the right-hand banner pops up a **Show/Hide Mix Buses/Groups**menu:



Show/Hide Mix Masters/Buses/Groups menu

Ticked Bus are shown full size vertically. Unticked busses are hidden vertically (there are still present horizontally for the send from each strip)

Tips: collapsed Busses and Auxes; it can happen that the mixer doesn't shall all busses, and that a vertical scroll bar appears on the right side of the mixer next to the right banner. You may use it to scroll and make the desired bus visible or resize the mixer to the full size to see all busses.



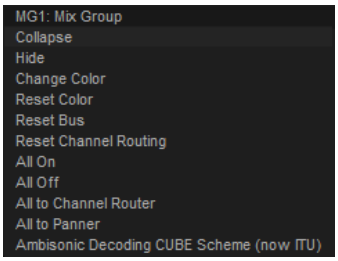
Mixer vertical scroll bar

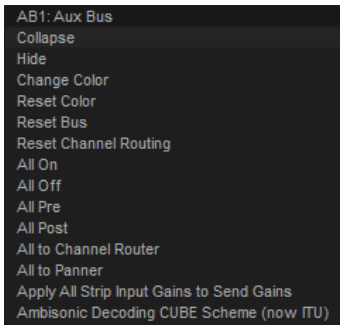
Expand / Collapse Horizontal

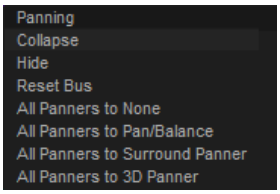
The **-** buttons at the bottom of each Strip collapse the strip to a narrow band and next to it a PIN to pin/unpin the strip in the global view of the mixer and 4 bars that open the mixer menu. The button changes to **+** when the Strip is collapsed. Clicking again restores the strip to full width.

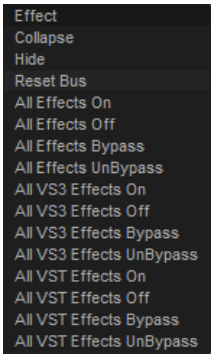
+- Row Menus

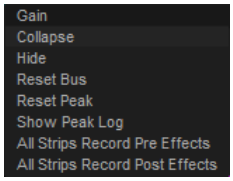
Each **+ -** box also pops-up a menu relevant to the row of the mixer it deals with when the cursor is above it. E.g. :

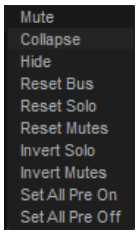


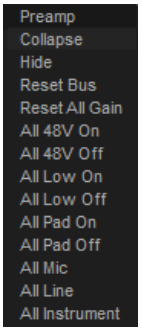


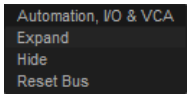


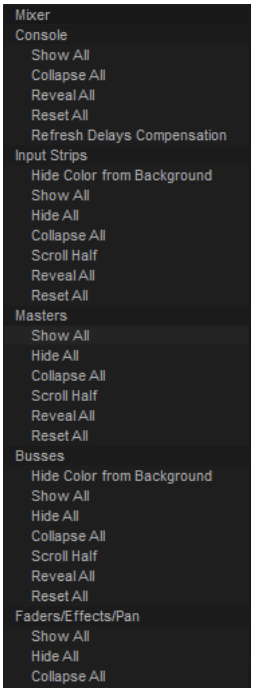












Collapse Versus Hide

Choosing **Collapse** leaves a small artefact of the mixer area visible, a horizontal bar with a **+** box at the righthand side which restores. **Hide** completely removes the area from view. Choosing **Show All** in the **Mixer + -** popup will restore.

Resets

These context menus also provide a convenient way to restore all controls of specific types or, in the relevant sections, the entire Strip or Mixer to the default condition.

Bus + - Pop-up Menus

Collapse	Collapses the Bus Send row.
Hide	Hides the Bus Send row.
Change Color	Opens the Color Picker window.
Reset Color	Resets Color to the default.
Reset Bus	Turns Bus **Off**.. In an **Aux Bus** reduces the send level to -144.5dB and turns Bus **Off**.

Note: Aux Buses set to Pre-fader are NOT affected.

Reset Channel Routing As it says.

All On Turns **On** the Strip sends to the bus for every Input Strip.

All Off Turns **Off** the Strip sends to the bus for every Input Strip.

All Pre Aux only All sends are switched to **Pre Fader**.

All Post Aux only All sends are switched to **Post Fader**.

All to Channel Router All sends are set to **Channel Router** Matrix.

All to Panner All sends are set to the **Panning Bus** (One entry will be present per Panning Bus in the mixer.)

Apply All Strips Input Gains to Seng Gains Applies the actual fader position to the AUX send gain

Ambisonic Decoding CUBE Scheme (now ITU) ???? = Dom ?

Panning Pop-up Menu

Collapse Collapses the Panner row.

Hide Hides the Panner row.

Reset Bus Resets the bus to the default condition.

All Panners to None Removes the Panner from all Input Strips and leaves a thin placeholder row.

All Panners to Pan/Balance Sets every Input Strip Panner to **Pan** for Mono Strips, **Balance** for Stereo Strips and **Pan** for multi-channel Strips.

All Panners to Surround Panner Sets every Input Strip Panner to **Surround** mode.

All Panners to 3D Panner Sets every Input Strip Panner to **3D** mode.

Effect Pop-up Menu

Collapse Collapses the Effects row.

Hide Hides the Effects row.

Reset Bus Nothing.

All Effects On Turns all **Effects** in the Mixer **On**.

All Effects Off Turns all **Effects** in the Mixer **Off**.

All Effects Bypass Switches all **Effects** in the Mixer to **Bypass**.

All Effects Unbypass Switches all **Effects** in the Mixer to in circuit.

All VS3 Effects On Turns all **VS3 Effects** in the Mixer **On**.

All VS3 Effects Off Turns all **VS3 Effects** in the Mixer **Off**.

All VS3 Effects Bypass Switches all **VS3 Effects** in the Mixer to **Bypass**.

All VS3 Effects Unbypass Switches all **VS3 Effects** in the Mixer to in circuit.

All VST Effects On Turns all **VS3 Effects** in the Mixer **On**.

All VST Effects Off Turns all **VS3 Effects** in the Mixer **Off**.

All VST Effects Bypass Switches all **VS3 Effects** in the Mixer to **Bypass**.

All VST Effects Unbypass Switches all **VS3 Effects** in the Mixer to in circuit.

Gain Pop-up Menu

Collapse Collapses the Effects row.

Hide Hides the Faders row.

Reset Bus Resets all faders to 0dB.

Reset Peak Resets all latched Peak indicators to Off.

Show Peak Log Opens a window with a list of all Peaks since the last Reset.

All Strips Record Pre Effects Record source for all Input Strips is taken before any Effects present in the Strip.

All Strips Record Post effects Record source for all Input Strips is taken after any Effects present in the Strip.

Mute Pop-up Menu

Collapse Collapses the Effects row.

Hide Hides the Mutes and Solos row.

Reset Bus Cancels any active Solos and Mutes.

Reset Solo Cancels any active Solos.

Reset Mutes Cancels any active Mutes.

Invert Solo	Any Strips in Solo will be un Soloed and vice-versa.
Invert Mutes	Any Strips Muted will be Unmuted and vice-versa.
Set All Pre On	Sets all Input Strips to **Prefade On**.
Set All Pre Off	Sets all Input Strips to **Prefade Off**.

Mic/Preamp Pop-up Menu

Collapse	Collapses the Effects row.
Hide	Hides the Mic/Pre row.
Reset Bus	Resets the Mic Pres to the default condition.
Reset All Gain	Resets all Preamp gains to the default value.
All 48V On	Turns **48V** Phantom Power **On** on all Preamps set to **Mic**.
All 48V Off	Turns **48V** Phantom Power **Off** on all Preamps set to **Mic**.
All Low On	Turns the High Pass Filter **On** on all preamps.
All Low Off	Turns the High Pass Filter **Off** on all Preamps.
All Pad On	Turns the **Pad On** all preamps set to **Mic**.
All Pad Off	Turns the **Pad Off** all preamps set to **Mic**.
All Mic	Switches all Preamps to **Mic** mode.
All Line	Switches all Preamps to **Line** mode.
All Instrument	Switches all Preamps to Instruments

Automation, I/O & VCA Pop-up Menu

Collapse	Collapses the Effects row.
Hide	Hides the Effects row.
Reset Bus	Nothing.

Mixer Pop-up Menu

Console

Show All	Shows every section of the Console Unhidden and Uncollapsed. Use this to see sections of the Mixer which have been hidden from View.
Collapse All	Collapses every section of the Console to its minimum height and width.
Reveal All	Maximizes the Mixer Window to reveal all Input Strips, Masters and Buses.
Reset All	Resets every Console setting to the default value.
Refresh Delays Compensation	Recalculates and applies the required delays to time align the Mixer.

Input Strips

Hide Color from Background	Where Input Strip Colors are active, hides the Colors.
Show All	Shows all Input Strips at normal width including those hidden or collapsed previously.
Hide All	Hides all the input Strips from view in the Mixer window.
Collapse All	Collapses all Input Strips to narrow bars.
Scroll Half	Reduces the currently visible Input Strips section by half.
Reveal All	Maximises the Mixer Window to reveal all Strips.
Reset All	Resets all Input Strips.

Masters

Show All	Shows every section of the Console Unhidden and Uncollapsed. Use this to see sections of the Mixer which have been hidden from View.
Hide All	Hides all Master Strips from view.
Collapse All	Collapses all Master Strips to narrow bars.
Scroll half	Reduces the currently visible Masters Strips section by half.
Reveal All	Maximises the Mixer Window to reveal all Masters Strips.
Reset All	Resets every Master Strip setting to the default value.

Busses

Hide Color From Background Where Bus Colors are active, hides the Colors.

Show All	Shows all Bus Send rows, the Panner & Effects rows uncollapsed.
Hide All	Collapses all Bus Send rows to a single row, collapses all Aux Send rows to a single row, collapses the Panner row(s), Collapses the Effects row.
Collapse All	Collapses all Bus Send rows to minimum height.
Scroll Half	Reduces the currently visible Mix/Aux Bus section by half.
Reveal All	Maximises the Mixer Window to reveal all Mix/Aux Buses.
Reset All	Resets all Buses.

Faders/Effects/Pan

Show All	Shows all Faders, Mutes, Preamps, Effects and Pans Unhidden and Uncollapsed.
Hide All	Hides all Faders, Mutes, Preamps, Effects and Pans to focus on the maximum of number of Buses available in the mixer height.
Collapse All	Collapses all Faders, Mutes, Preamps, Effects and Pans to narrow rows.

Mixer Components

Input Strips

Mixer Input Strips associated with Tracks (the main number top-left in the Track Header) are fed by and control the monitor output of the Tracks. The Mixer Strip Channel **Live** (physical) or **Internal Return Bus** Input goes direct to the associated Track. When a strip has no associated Track it is fed by and controls the **Live** (physical) or **Internal Return Bus** input assigned to it.

When the strip has an associated Track, the Track output is automatically switched between input and playback output depending on transport mode, the monitoring setting in the Track header and the setting of the **Settings > All Settings > Application > Playback/Record : Auto-monitoring** option, **European Monitoring (all tracks turn to INPUT on stop)** or **US Monitoring (only Record Ready tracks turn to INPUT on stop)**.

Note: When strip channels have an associated Track **NONE** of the strip controls, fader, mute, affect the signal fed to the Track input. The Record feed can be Pre or Post Effects, selected from the Strip pop-up menu.

Note: Record Post effect is not supported in Dubbing Record mode.

Mixer Input Strips have the same functions as the input strips of any standard mixing console providing level control, pan, mute, etc.

The following types of input strips are available:

Mono
Mono - Direct Monitoring
Stereo
Stereo - Direct Monitoring
MS
MS - Direct Monitoring
Multi-Channel Strip (from 2.1-5.1-7.1.4 to Ambisonc 7th order)
VCA fader

Basic Strip

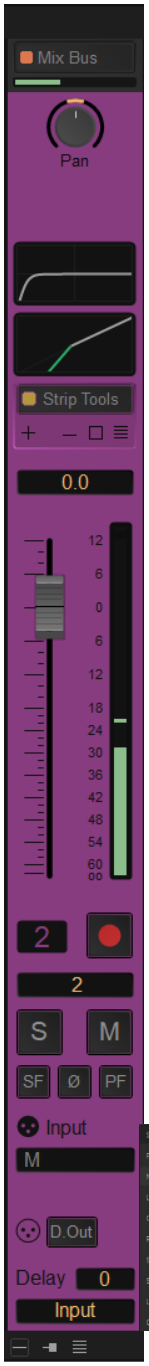
Controls and Faders

Rotary Controls, sliders and Faders may be adjusted by grabbing them with the mouse and dragging. Rotary controls and horizontal sliders are adjusted by dragging left or right and faders by dragging up or down. Double-clicking a Fader, slider or Rotary knob returns the value to the default. E.g. unity gain on a Channel Strip Fader. Holding down the **Ctrl** key increaes the resolution to 0.1dB Keyboard up and down arrows adjust gain by 0.1dB per press, with **Shift** 0.5dB per press and with **Ctrl + Shift** 1.0dB per press.

Buttons

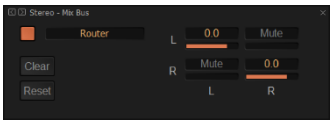
Buttons on the main mixer surface are black when inactive. When active they 'light up'.

A basic mono channel strip contains:



Mix Bus Send in a STEREO Bus

Output Meter



Pop-up clicking on Mix Bus, Pan / Router selection

Pan Panner type can be **3D**, **2D** or **Pan/Balance** Rotary as shown here.

Divergence and **LFE** Sliders. LFE only relevant if present in Bus

EQ curve and Dynamic slope graphically represented of the 1st EQ and 1st Dynamic from the Inserts list (page 185)

Inserts

Slots for VS3 and VST Plug-ins and External Inserts.

Numeric display of fader output level value, if cursor is over a fader knob shows fader gain. If a pan-slider is being moved, shows current pan position. May be clicked to enter a fader gain value directly.

Fader and Post-Fader (default) Input bargraph Peak Meter(s)
Bargraph shows peak level.

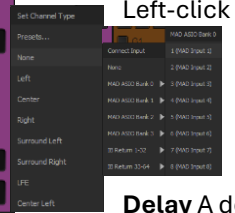
Rec enable(d) Enables/disables recording for the associated track. Lights red when enabled. (Purple when source is after effects.)

Strip Name that can be tipped in or is directly taken from the Track Name

Solo solos the strip, **Mute** mutes the strip. **Ctrl + Solo** cancels all other Solos.

Sa**F**e prevents the strip being muted by solo operations elsewhere. **Ø** reverses the channel phase. **PF** changes the metering position to Pre-Fader.

Input Assignement



Left-click on the LEFT side of the black bar allows to modify the strip type

Right-click on the RIGHT side pop-up a drop down list of valid input assignments

I/O &VCA - If a **VCA Group** or Groups is present the select buttons also appear here.

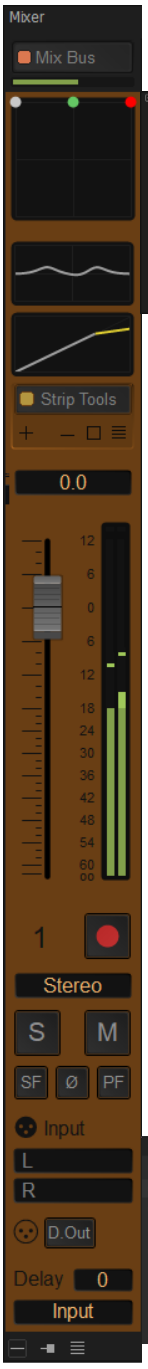
Direct Output Assignment of an output/enabling by clicking on it

Delay A delay value (in samples) can be set in this box.

Input Clicking on **Input** pops-up a box with the choice of the strip taking its input from a physical connection or any output bus.

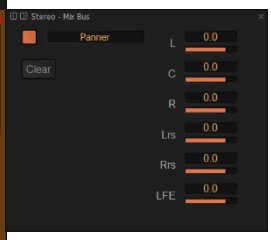
Note: Direct Outputs must first be enabled (yellow when enabled) by clicking on it on in the **I/O Route** page. **Please see: Channel Direct Outputs on page 223**

A basic STEREO channel strip contains:



Mix Bus Send in a 5.1 Bus

Output Meter



Pop-up clicking on Mix Bus, Pan / Router selection
In Panner modus with a 5.1 Bus a Trim is available. click on the Mix Bus button to open the **Bus Trim** pop-up.
Divergence and **LFE** Sliders. LFE only relevant if present in Bus

EQ curve and Dynamic slope graphically represented of the 1st EQ and 1st Dynamic from the Inserts list (page 185)

Inserts

Slots for VS3 and VST Plug-ins and External Inserts.

Numeric display of fader output level value, if cursor is over a fader knob shows fader gain. If a pan-slider is being moved, shows current pan position. May be clicked to enter a fader gain value directly.

Fader and Post-Fader (default) Input bargraph Peak Meter(s)
Bargraph shows peak level.

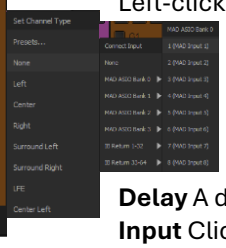
Rec enable(d) Enables/disables recording for the associated track. Lights red when enabled. (Purple when source is after effects.)

Strip Name that can be tipped in or is directly taken from the Track Name

Solo solos the strip, **Mute** mutes the strip. **Ctrl + Solo** cancels all other Solos.

SaFe prevents the strip being muted by solo operations elsewhere. **Ø** see below for STEREO Strip Phase. **PF** changes the metering position to Pre-Fader.

Input Assignement



Left-click on the LEFT side of the black bar allows to modify the strip type
Right-click on the RIGHT side pop-up a drop down list of valid input assignments
I/O &VCA - If a **VCA Group** or Groups is present the select buttons also appear here.
Direct Output Assignment of an output/enabling by clicking on it
Delay A delay value (in samples) can be set in this box.
Input Clicking on **Input** pops-up a box with the choice of the strip taking its input from a physical connection or any output bus.

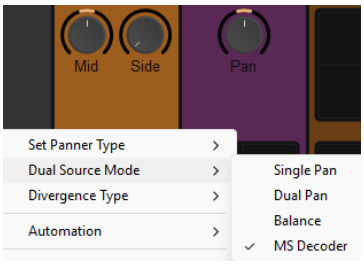
In a Stereo Strip the single bargraph meter is replaced by a pair and the Panner can be set to **Dual-Source Mode** with a choice of **Balance** control, **Single Panner** or **Dual Panner** (accessible from the right-click context menu.)
Stereo Strips can reverse the **Phase** of both the Left and Right channels. The single button has four possible states:

Black:	No phase inversion
White:	**Left** channel inverted
Red:	**Right** channel inverted
Blue:	**Both channels** inverted

M&S Stereo Strips

What is M&S?
M&S stands for **Middle** and **Side**. **M&S** is a microphone technique which outputs **Sum and Difference** signals instead of **Left** and **Right** (also known as **LR**, **AB** or **XY**). These Sum and Difference signals are often known as **M&S** although this nomenclature is often a source of confusion...
Sum and Difference signals can be created from a conventional Left, Right source. For example, by using the Pyramix **MS Encoder** plug-in.**(Please see: MS Encoder on page 369)**.

Decoding M&S
A **Sum and Difference** or **M&S** decoder reconstitutes Left and Right by adding the **Difference (S)** signal to the **Sum (M)** signal to produce Left and adding the **phase-reversed Difference (S)** signal to the **Sum (M)** signal to produce Right. This is often represented as:
L = M + S and **R = M – S**



Activate MS decoding on a STEREO Strip – Mid / Side buttons appear

Benefit of M&S
In mixing as opposed to recording, the main practical benefit of manipulating a signal in the Sum and Difference domain is true control over the **width** of the image. Pyramix can handle these signals directly thanks to the provision of a **M&S Stereo** strips section.
The new **General Mixing Bus** decodes **MS** directly and without any additional user interface. Users can feed a Stereo strip can be fed with Middle and Side information as before and selecting MS in Dual Source Mode by right cliking on the panner. The **Panner** will decode the Left and Right information and feed it directly to the connected Buses.
If you wish to route the raw **M** & **S** signals, switch the **Bus** connection to use the **Channel Router** instead of the **Panner**.

Phase Button in an M&S Strip
The **Phase** of both the Sum and Difference channels can be reversed. The single **Ø** button has four possible states:

Black:	No phase inversion
White: Sum (M)	channel inverted
Red: Difference (S)	channel inverted
Blue: Both channels	inverted

Inverting either Sum or Difference results in the image being reversed left to right.

> **Note:** If the **Input meters** consistently show **S** higher than **M** then either the image is very wide and unlikely to be compatible for a mono listener or the **M** and **S** inputs have become reversed at some point. Regrettably, this is extremely common when dealing with location recordings in film and TV.

Multi Channel Strips

Multi Channel Strips are available in these formats:

Mono	**7.1 / ITU-I (0+7+0)**	**10.2 TMH**
Stereo	**7.0 SDDS**	**12.2 TMH**
2.1	**7.1 SDDS**	**Auro 8.0**
Stereo Surround	**7.0 / ITU-C (2+5+0)**	**Auro 9.1**
3.0 / LCR	**7.1 / ITU-C (2+5+0)**	**Auro 10.1**
3.1 / LCR	**8.0 / LCR**	**Auro 7.4 / ITU-J (4+7+0)**
3.0 Surround	**8.1 / LCR**	**Auro 11.1**
3.1 Surround	**9.0 / LCR**	**Auro 13.1**
4.0 Quadro	**9.1 / LCR**	**KBS 10.2 / ITU-F (3+7+0)**
4.1 Quadro	**9.1 / ITU-D (4+5+0)**	**NHK 22.2 / ITU-H (9+10+3)**
4.0 Surround	**9.1 / ITU-E (4+5+1)**	**Cube**
4.1 Surround	**11.0**	**Cube + Mid Layer**
5.0 / LCR	**11.1**	**Cube (Corners + Faces)**
5.1 / LCR	**Dolby 3.0**	**Cube (Corners + Faces + Edges)**
5.0 / ITU-B (0+5+0)	**Dolby 5.0**	**30.2 La Totale**
5.1/ ITU-B (0+5+0)	**Dolby 5.1**	**4 x Stereo**
6.0 / LCR	**Dolby 7.0**	**1st Order Ambisonic (4 ch)**
6.1 / LCR	**Dolby 7.1**	**2nd Order Ambisonic (9 ch)**
6.0 / LRC	**Dolby Atmos 5.1.2**	**3rd Order Ambisonic (16 ch)**
6.1 / LRC	**Dolby Atmos 5.1.4**	**4th Order Ambisonic (25 ch)**
7.0 / LCR	**Dolby Atmos 7.0.2**	**5th Order Ambisonic (36 ch)**
7.1 / LCR	**Dolby Atmos 7.1.2**	**6th Order Ambisonic (49 ch)**
7.0 / ITU-I (0+7+0)	**Dolby Atmos 7.1.4**	**7th Order Ambisonic (64 ch)**

In a Multi Channel Strip there are as many bargraph meters as there are channels. The Panner type can be **None**, (which hides the Panner if you are using the Router) **3D, 2D or Pan/Balance**. (right click on panner)

Channel Direct Outputs

All Input Strip Channels can have **Direct Outputs**. The **Direct Out** connection is disabled by default. It can be enabled directly on each strip individually or by selecting multiple strip (ON THE STRIP NUMBER from – to with SHFT or add-remove from the selection with CTRL) and clicking the DIRECT OUT button whilst holding **CTRL+SHFT** and then confirming it whilst holding **CTRL + SHFT**.
Header in the routing matrix, **the matrix needs then to be closed to be effective.**
When active **(Click to Enable)** disappears. Clicking again in the Strip Header disables the Direct Out and(Click to Enable) reappears. The **Direct Out** can be routed per Channel to any output by clicking on a crosspoint in the matrix. The Direct Out can be sent **Pre** or **Post** Fader. Click on the **DO: Post** box in the Mixer I/O section to toggle. The Direct Out is currently always **Post Effects**. Direct Outs are not shown in the I/O section of the mixer unless they are activated in the **Route** page.

Direct Monitoring Input Strips

Direct Monitoring Input Strips are a special version of the basic Input Strip designed specifically for recording. The principal feature of these strips is minimum monitoring latency for the artist. This is achieved by applying automatic delay compensation only to the signal fed to the main output bus. For this reason, Aux Sends and Effects cannot be installed in Direct Monitoring Input Strips and they cannot be routed to SubGroups. Three types are available:

Mono - Direct Monitoring
Stereo - Direct Monitoring
MS - Direct Monitoring

Note: Track returns to these strips do not have automatic delay compensation applied and are intended for monitoring only. When mixing down the Track outputs should be connected to normal' strips. To indicate this clearly, Tracks feeding Direct Monitoring Input Strips show a small red box with '**D**' in the header:

Track Header Direct monitoring Indicators

Adding Direct Monitoring Input Strips

To add a Direct Monitoring Strip right-click on a blank area of an existing strip to the right of where you wish to add it. Select **Strip > Add > Mono -Direct Monitoring**, **Stereo - Direct Monitoring** or **MS - Direct Monitoring** from the context menu as appropriate.

Note: If **Auto-Delay Compensation** is turned on for the Mixer then the recording from a Direct Monitoring Input Strip will be in sync with the existing Tracks while maintaining minimum latency for foldback to the artist.

Input Strips Fed From Internal Return Buses

Note: A Strip fed from an Internal Return Bus will NOT be fully Delay Compensated when in Auto-Monitoring mode and when in Repro mode the red '**D**' will be highlighted due to noncompensation. On the other hand the recorded material will be Compensated correctly and in sync with the current timeline events.

Global Indicators / Buttons

These small buttons on the right banner of the mixer window, adjacent to the Fader row, have the following functions:

SC = Strip Color - When lit shows the Tracks Clip background colors in the Input Strips background.
BC = Bus Color - When lit the bus colors are shown.
GC = Group Color - When lit the VCA-group fader knob(s) and Strip fader knob(s) of Strips assigned to VCA groups is(are) colored according to the VCA group.. Color is fixed.
FL = Signal Flow - When lit Bus and Strip colors are switched off (if active) and the signal flow for the strip selected currently is shown. If an Input Strip is selected then the Strip and all Buses it feeds are colored green. If a Bus strip is selected then the Bus and all Strips feeding it are colored green.

Signal Flow [FL]
When the **Signal Flow** button is active (lit):
When an Input Strip is selected it is colored light green and the complete signal path where the signal is sent from that strip is colored a darker green. Loops are taken into account in the signal flow coloring.
Signal Flow coloring applies whether signals are actually present or not.
If an output Bus Strip is selected it is colored blue and the complete signal path of all sources feeding the Bus is also colored blue. Loops are not taken into account.
If a VCA Group is selected, the signal flow of all members of the group is colored green.
If multiple strips are selected (hold down the **Ctrl** key and click on Strip numbers) then the signal flow for all strips selected is colored green. If the **Ctrl** key is pressed when clicking on the [**FL**] button, the Mixing console UI contracts to show to only components participating to the signal flow. **Ctrl** clicking the [**FL**] button again restores the mixer UI to its original state.

4 Snapshots (S1 – S4) save and recall allowing to store mixer layouts, including

- Strips Collapsed, Hidden and Pinned states
- Busses Collapsed and Hidden states
- Mixer position and size
- Strips scrollbar position

Identical for S1 – S4
Click to recall a Snapshot
Control + Click to set a Snapshot
Control + Shift + Click to reset a Snapshot

Dolby Atmos renderer connection
When lit; it is connected to a renderer and MetaData are exchanged
Please refer to the Dolby Atmos section on page xxx from more details

DC = Delay Compensation ON / OFF
DS = **Automatic Delay Compensation** Status
Green = OK : Red = not working
Please see : Delay Compensation on page 272

Mute / Solo FOR THE MIXER (unrelated to the track headers)
MUTE - Lit when a Mute or mutes are active. Clicking on the lit button cancels all active Mutes.
SOLO - Lit when a Solo or Solos are active. Clicking on the lit button cancels all active Solos.

Buses

In a MassCore system the only limitation on the number of audio I/O buses is the available power. For now the maximum number of buses is artificially limited in code to 512 (at 1FS, 256@2FS, 128@4FS, 64@8FS).
The Pyramix Mixer uses a number of different types of Bus:

General Mixing Buses	Sum audio and are available in several types. (**see below**)
Control Buses	Do not carry audio. There are two types; the **Panning Control Group** and the so-called **VCA Group**.
Object Buses	These are a special type of General Mixing audio bus provided for new 3D immersive formats including Dolby Atmos.
Internal Return Buses	These are a special type of Bus used to return the output of General Mixing Buses back to Input Strips.

General Mix Buses

General Mix Bus Types

Mix Bus	Master Output Buses. May be routed to physical outputs.
Mix Group	Used as a Sub-Group principally for Effects, e.g. reverb. Can only be rerouted into another **General Mixing Bus**.
Aux Bus	Used principally for artist foldback. May be routed to physical outputs.
Aux Group	Used as a Sub-Group. Can only be rerouted into another General Mixing Bus. Aux Groups can be moved anywhere in the Input Strips section of the Mixer.

Note: Please be aware that a Mix Group Bus or Aux Group Bus will auto-take **Internal Bus** connection resources, starting from the last one. E.g. IB384-IB385 for the first two Group Channels added to a Mixer. This means that you will no longer see IB384 and IB385 in the IB list.

General Mix Bus Features
General Mixing Buses can have a virtually unlimited number of channels. (Only limited by the maximum supported by the Pyramix engine.

Each channel can be assigned a type, including 3D specific types, from the extensive list of Channel Types. **Please see: Channel/Speaker Types on page 268**

When creating a new General Mixing Bus, (Right-click context menu **Bus > Add > New General Mixing Bus**) the choice is given for one of the five types, the number of channels and a choice of predefined **Channel Types** (AKA **Speaker Arrangements** e.g. **Mono**, **Stereo**, **5.1 Dolby**, **9.1 Auro** etc.) or **Custom**. (Please see next page)

General Mixing Busses can also be given an optional Room Size. In this case the panning algorithm changes to a distance based algorithm. **Please see: Room Models on page 181**. An existing General Mixing Bus topology can be modified after its creation by using the Room Editor. **Please see: The 3D Room Editor on page 267**.

General Mix Bus Formats

All of the General Mix Bus types apart from **Object Bus** can be created in any of the formats listed here plus **Custom**:

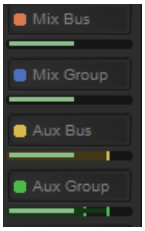
Mono	7.1 / ITU-I (0+7+0)	10.2 TMH
Stereo	7.0 SDDS	12.2 TMH
2.1	7.1 SDDS	Auro 8.0
Stereo Surround	7.0 / ITU-C (2+5+0)	Auro 9.1
3.0 / LCR	7.1 / ITU-C (2+5+0)	Auro 10.1
3.1 / LCR	8.0 / LCR	Auro 7.4 / ITU-J (4+7+0)
3.0 Surround	8.1 / LCR	Auro 11.1
3.1 Surround	9.0 / LCR	Auro 13.1
4.0 Quadro	9.1 / LCR	KBS 10.2 / ITU-F (3+7+0)
4.1 Quadro	9.1 / ITU-D (4+5+0)	NHK 22.2 / ITU-H (9+10+3)
4.0 Surround	9.1 / ITU-E (4+5+1)	Cube
4.1 Surround	11.0	Cube + Mid Layer
5.0 / LCR	11.1	Cube (Corners + Faces)
5.1 / LCR	Dolby 3.0	Cube (Corners + Faces + Edges)
5.0 / ITU-B (0+5+0)	Dolby 5.0	30.2 La Totale
5.1/ ITU-B (0+5+0)	Dolby 5.1	4 x Stereo
6.0 / LCR	Dolby 7.0	1st Order Ambisonic (4 ch)
6.1 / LCR	Dolby 7.1	2nd Order Ambisonic (9 ch)
6.0 / LRC	Dolby Atmos 5.1.2	3rd Order Ambisonic (16 ch)
6.1 / LRC	Dolby Atmos 5.1.4	4th Order Ambisonic (25 ch)
7.0 / LCR	Dolby Atmos 7.0.2	5th Order Ambisonic (36 ch)
7.1 / LCR	Dolby Atmos 7.1.2	6th Order Ambisonic (49 ch)
7.0 / ITU-I (0+7+0)	Dolby Atmos 7.1.4	7th Order Ambisonic (64 ch)

Custom

When **Custom** is selected as the General Mix Bus **Channel Mapping** the Bus is created with the number of channels specified but not set to any Type. Clicking on the **Custom** box in the Bus Master I/O section will open the **3D Room Editor** where custom channel assignments may be made. **Please see: The 3D Room Editor on page 267**

Default Bus colour coding

Pyramix mixer uses default colour coding to easily recognize the bus type within the mixer as follows:

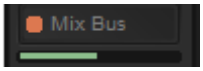


Orange = Mix Bus
Blue = Mix Group
Yellow = Aux Bus
Green = Aux Groups

Bus Sends

Mix Busses/Groups, Aux Busses/Groups & Object Busses can be moved wherever one wishes with the CTRL+SHFT+ALT function

General Mixing Bus sends have similar controls in the Mixer user interface
Mix Bus & Mix Group Send:



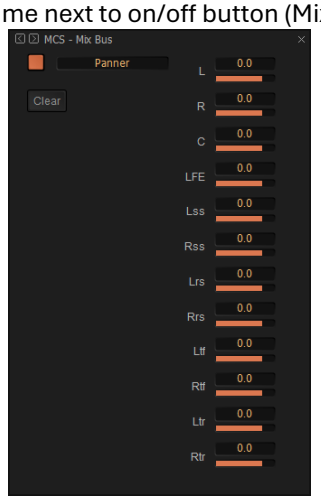
Mix Bus Send

An On/Off button Click to toggle the Send on and off. When lit the Bus Send is active. **Ctrl +Click** resets the Send Gain to **Mute**.

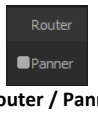
Note : to hide the meter of the sed of a bus/aux, click the – on the right mixer banner

Tip : one can use the mouse wheel button to scroll through the mixer busses send when minimized, when the mouse is over the mixer

Panning/Routing option popup
Click on the name next to on/off button (Mix Bus).



Mix Bus pop up



Select Router / Panner 1 / Panner 2 etc

Panning/Routing option
Clicking in the Panner/Router selection. This lists all Panning Control Buses present in the mixer and Channel Router.
When **Panner** is selected (or **Panner 1**, **Panner 2**, etc.) the Bus send follows the selected Panning Control Bus parameters to pan/mix the signal in its channels. **Please see: Panning Control Group Buses on page 233**.

Bus Trim

Bus Trim Only present when **Bus Send** is set to **Pan** (as shown above). One can directly TRIM each send level individually. The sliders are used to trim the send level to each speaker present in the Bus. Values may also be entered directly by clicking in the numeric field and typing a value (e.g. **-22.5**)

Bus Trim level is adjustable from **-144.5dB (Mute)** to **+20dB**. When the Send Level is above 0dB the numeric indicator and the slider change color to light red.

Double-clicking on the left of a Trim value resets it to **Mute**, double clicking on the right resets to 0dB.

Selecting **Router for the Channel Routing** opens the grid

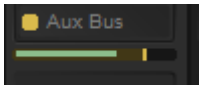
Channel Routing Grid:

Channel Routing Grid adapting to the Strip and Bus type

Click in a crosspoint field and type a level value (or **mute**) to route individual Strip Outputs to the bus. Strip Outputs run vertically.

Clear	Clears all routing assignments.
Auto	Routes the Strip Outputs automatically. Where the destination bus is not the same configuration as the Strip only Channels with matching designations are routed.
MCS	The box shows the Bus being routed to. (top left))
<>	The left and right arrows step along the buses according to their position in the Mixer. (top left)

Aux Bus & Aux Group Send:



Click on the name next to on/off button (Aux Bus) to open full control

An On/Off button	When lit the Bus send is active.
Ctrl + Click	will activate the Bus send, but muted (level -144.5 dB)
Send Level box	Shows the current Send Level. Click in the field to enter a precise value manually. Send Level is adjustable between -144.5dB (Mute) and +12dB. When the Send Level is above 0dB the numeric indicator and the slider change color to light red.

Aux Bus Send

An Panpot Send Level display and control Click and turn the pan to set the Send gain.

PF button When lit the Bus Send is Pre-fader.

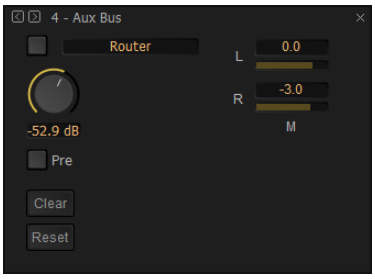
Panning/Routing option box

Clicking in the Panner/Router selection. This lists the choice of Panner or Router.

Clicking in the box pops up the **Routing** context menu.

.

When **Panner** is selected (or **Panner 1**, **Panner 2,** etc.) the Bus send follows the selected Panning Control Bus parameters to pan/mix the signal in its channels. **Please see: Panning Control Group Buses on page 233**.
Bus Trim Only present when **Bus Send** is set to Pan. Clicking on the button opens the **Bus Trim** pop-up. Please see: **Bus Trim on page 228**
When **Router** is selected, a small grid icon appears below the box.



Aux Bus Send Router

Object Bus Send

The Object Bus is a specialized type of General Mix Bus intended for use with formats such as Dolby Atmos which use conventional “Bed” tracks along with Audio “Objects”. An Object Bus Strip Send has an **Object Router**:

Object Bus Send

The Object Router shows each Object Channel as a button. All Input Channels of the Strip shown in the box are sent to the Object Channel(s) selected. (button(s) lit)

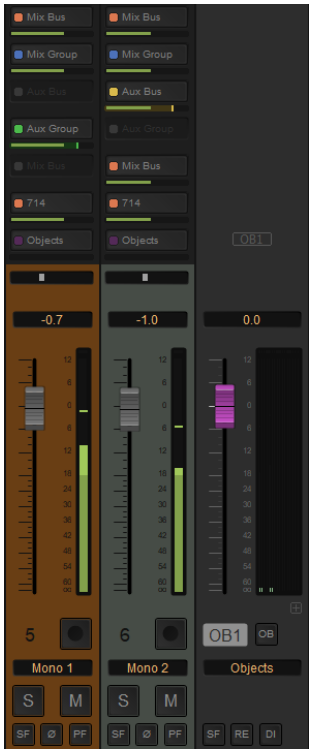
The Object busses are all identified as purple in the mixer, to differentiate with other busses.

When sends within the object bus are in use with other strips; they are shown in a dimmed purple and in red if you choose to send signal into the same send (shown with **send 6** below)

Object Bus Send

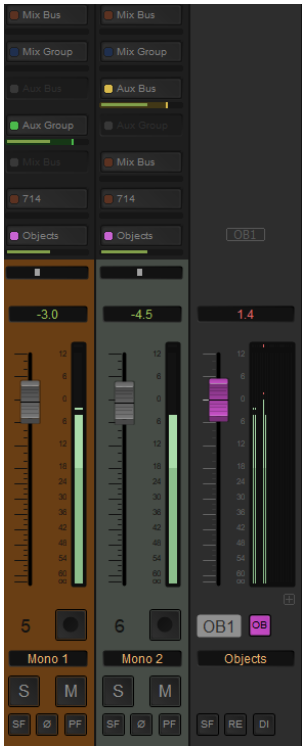
Note : the object popup windows can be kept open simultaneously with other mix/aux busses popups, clicking on the desired strip will update the values for each popup window.

Object bus enable/disable



Note: When an Input Strip is routed to an Object bus, all other Buses for that strip input are muted, as for a Solo.

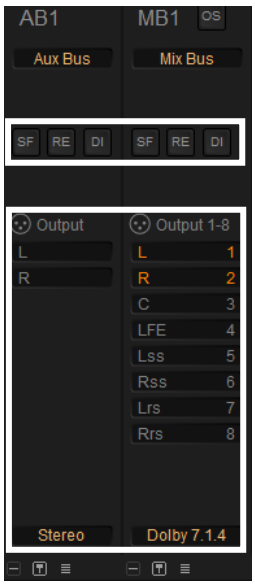
- Objects Bus Routing is automated. Input sound can be sent for a limited time to any Objects Channel.
- Objects Buses can be Enabled and Disabled via the right-hand side [OB1] popup menu. This enables any Object sending in the Object Bus to be disabled temporarily keeping all input audio in its Bed for editing and monitoring. Or equally it can be Enabled and Disabled with the OB1 OB button in the Master section.



Bus Master Strips

There are as many Output bargraphs as there are Channels in the Bus. The **+** button to the right of the Bus label increases the strip width to make the meters easier to see and makes the Channel labels visible.

Mix Bus & Aux Buses
I/O Section:



OS = Object Safe It will safe the output when an Object Bus is available

Mute Section

Repro/RE Mutes the Bus when in **Stop** to prevent howl round from auto input switching.

Safe/SF Prevents the strip being Muted by Solo operations elsewhere.

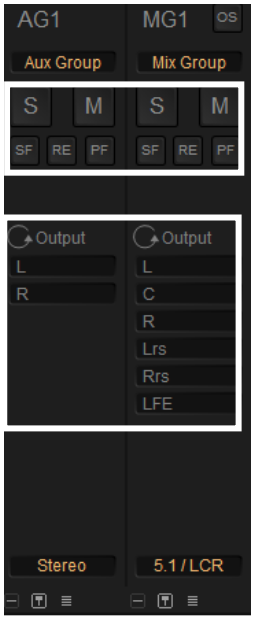
Dither/DI The button turns Dither on and off. Lit yellow when on. Clicking on the **Dither** label opens the **ReDithering** dialog. **Please see: Dithering Options on page 283**

Bus Format Label Stereo, 5.1 Dolby, 30.2 La Totale etc. Clicking on the label opens the **Room Editor** window.

1-8 For Buses with more than 8 outputs this box appears. Clicking on the box steps through the Bus outputs in banks of 8.

Numbers (in this case 1-8) Route Bus Channels to physical outputs or Internal Buses or MT ASIO Bridge. (if in Orange = used in the **Monitoring Section**) (Where these are present.) Click on the right side of the black banner to pop-up a list of available destinations. Clicking on the left side allows to change the type for each individual output.

Mix Group & Aux Group Buses
These Group Buses have the same Mix Bus Send and Panning Options as Input Strips. Aux Groups have Aux Sends, Mix Groups do not.



OS = Object Safe It will safe the output when an Object Bus is available
Mute Section
Mute/M Mutes the Bus
Solo/S Soloes the Bus
Safe/SF Prevents the strip being muted by Solo operations elsewhere.
Repro/Re Mutes the Bus when in **Stop** to prevent howl round from auto switching.
Pre-fader/PF Switches the Bargraph meters to Pre-Fader.

I/O Section
The symbol Output defines that it is a Mix/Aux Group and not a Bus.
Bus Format LabelStereo, **5.1 Dolby, 30.2 La Totale** etc. Clicking on the label opens the **Room Editor** window.
1-8 For Buses with more than 8 outputs this box appears. Clicking on the box steps through the Bus outputs in banks of 8.
Remix icons A label next to each icon indicates the Channel Type or Number if no Type is assigned.

Panning Control Group Buses

This Bus allows for controlling panning information in 1D (Left/Right), 2D (Surround) or 3D (Full Space).

The Panning Control Bus does not process audio and has no Channels, no associated Output Strip and no I/O. Any General Mix Bus / Mix Group / Aux Bus / Aux Group uses the information generated by a Panning Control Bus to pan sound sent to their respective channels.

The same Panning Control Bus can pan sound for any channel mapping of any General Mix Bus. I.e. the panning parameters of an input strip can control for example, the sends to a 9.1 Mixing Bus, a 5.1Mix Group and a Stereo Aux Group simultaneously.

Generally, only one Panning Control Bus is required for all Mixing Buses, however multiple Panning Control Buses can be created if different panning information is required for an Strip to different Mixing Buses. (Right-click context menu: **Bus > Add > Panning Control Bus**)

The in-strip User Interface for the Panning Control Bus is switchable between three different Types of Panner. (Right-click over the Panner in the Strip to open the context menu: **Set Panner Type**):

With a STEREO STRIP
Pans in 1D space (Pan/Balance) – right click menu **Dual Source Mode**

Single Pan – Dual Pan – Balance – MS Decoder

When minimized 

Single Pan	Pans the Stereo Channels as a point source.
Dual Pan	Pans each Channel independently.
Balance	Changes the balance between Left and Right.
MS Decoder	Decodes the MS signal (Mid Side microphones)

2D Panner Pans in **2D** space. I.e. Left/Right and Front/Back
(all other functions will be found in the panner pannel)

3D Panner Pans in **3D** space. I.e. Left/Right and Front/Back and Up/Down.

Divergence

Divergence has a type which can be changed per Strip. The type may be changed in the **Panning Control Bus** window or by right-clicking over the Panner in an Input Strip and selecting the Divergence type from the list:

1D (Left/Right)	The divergence only spreads over the front Left and Right channels.
2D (L/R - F/R)	The divergence spreads over the surround space.
3D (L/R - F/R - T/B)	The divergence spreads over the whole 3D space.

The Divergence Type selected is displayed in the Panning Control Bus window.

The Automation for the panning information is associated with the Panning Control Bus and is the same for any General Mixing Bus sharing the Panning Control Bus. Automation for the **Send On/Off**, **Send Gain**, **Pre/Post Fader** is associated with each General Mixing Bus, independently.

Internal Return Buses

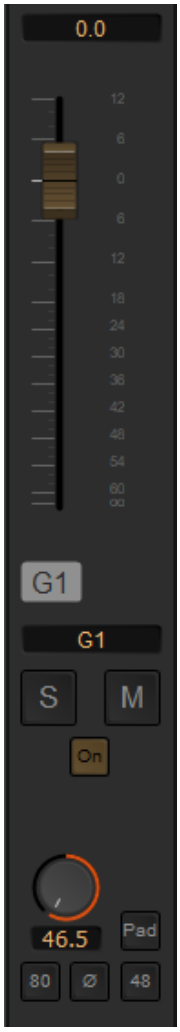
Some of the time slots within MassCore can be reserved to convey **Aux Send** or **Master Output** Buses back to input strips. In effect, these are internal send/return paths. To change the number of available Internal Return Buses, close all open Projects (if any) and go to:
Settings > All Settings > Mixer > Mixer Settings.

The number of Internal Return Buses can be set using the **Internal Buses** combo box. Click on the **OK** button to memorize the setting and exit.

The number of **Internal Return Buses** you assign here will be available as possible channel strip sources in the mixer.

Note: Please be aware that a Mix Group Bus or Aux Group Bus will auto-take Internal Bus connection resources, starting from the last one. E.g. IB384-IB385 for the first two SubGroup Channels added to a Mixer. This means that you will no longer see IB384 and IB385 in the IB list.

Note: A Strip fed from an **Internal Return Bus** will **NOT** be fully Delay Compensated when in Auto-Monitoring mode and when in Repro mode the red '**DS**' will be appear to indicate that automatic delay compensation will not be applied. On the other hand, recorded material will be Compensated correctly and in sync with the current timeline events.



Groups / VCA

VCA Master Group Strips - allow the grouping of faders of several mixer strips. Analogous to VCA grouping. When a group or groups are added (from the mixer contextual menu **Strip > Add Strip > VCA/Group**)
A group button for each group created will appear above the I/O section on each input strip with a different colour. When selected, the associated Group strip will control the grouped input strips if the

For **MUTE and SOLO** button is lit on the strips linked to the VCA Group.

Pressing and holding the **Ctrl** key when moving a VCA master fader disables the delta between the faders in the group.

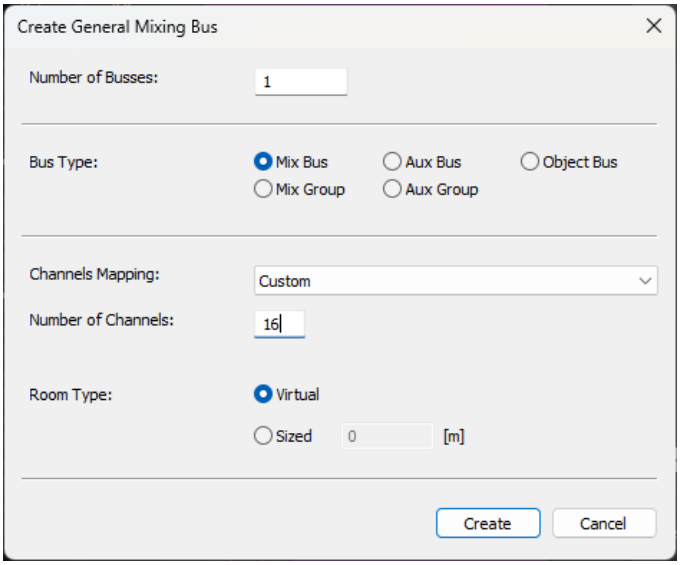
The **ON** button allows you when disabled to unlink all STRIPS, their behaviour is identical as there would be no VCA fader.

> **Note:** VCA Strips can be moved anywhere in the Input Strips section of the Mixer whilst holding CTRL + SHFT + ALT

> **Note:** If an input Strip with Horus/Hapi/Anubis/MT-48 Preamp controls is added to a VCA Group then Preamp Controls will appear under the VCA Master Fader section. Be aware that Mic/Line/Instrument is only selectable on each Strips Remote Preamp section

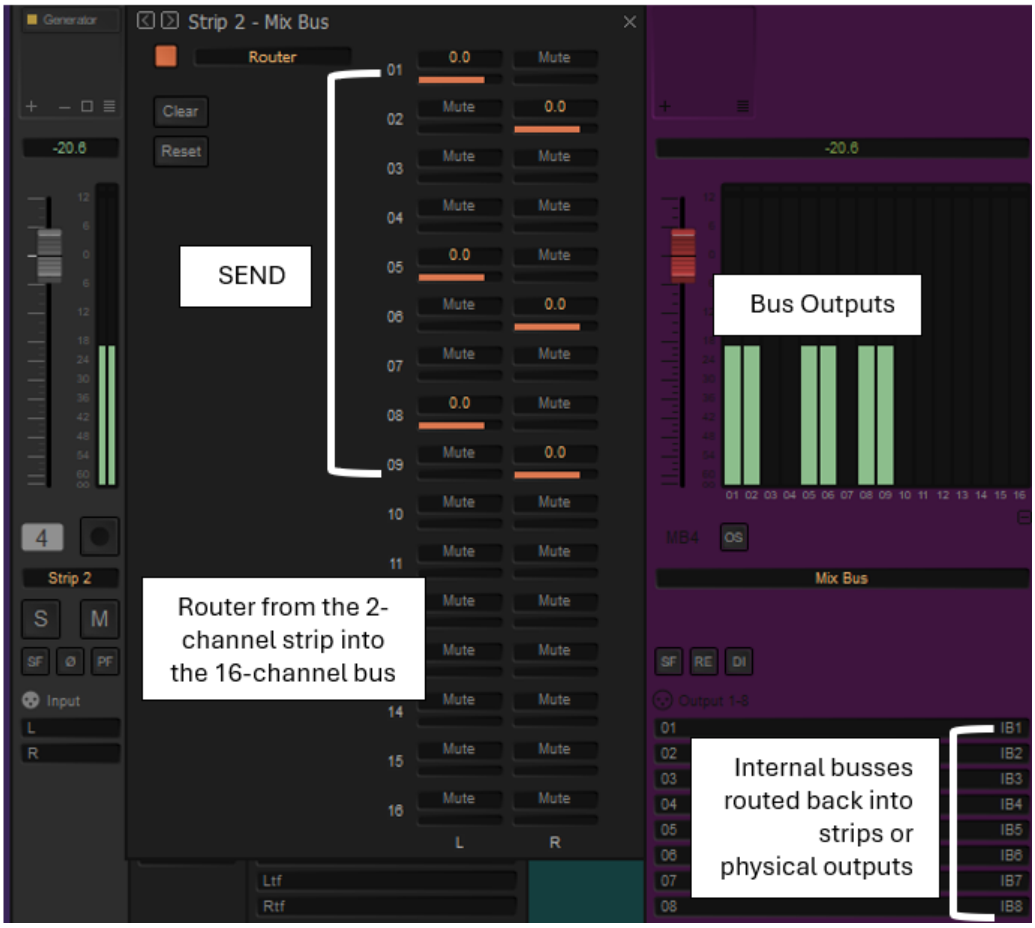
Multi mono busses

For routing purposes and/or mastering with internal busses it can be useful to have a matrice to route the same signal to several instances. For this one case use a custom bus, and in this example it will be a 16 channel custom bus. (see **page 200** on how to create a bus)



Create a new Custom bus with 16 channels

Once created select a strip that goes into that bus and activate the router (instead of the panner) then one can choose what and how much signal is sent to the 16 channels bus.



Routing with a custom 16 multichannel bus

This allows to distribute an identical signal in this case to bus 1 and 2, 5 and 6, 8 and 9, going through a different internal or external processing to be recorded back into Pyramix.

Merging Devices Preamp Remote Controls

If you are using the Merging Technologies or Neumann RAVENNA/AES67- Dante Ready devices (Horus, Hapi, Anubis, MT-48...) with analog inputs, remote control of the analog preamps is available in the Pyramix Mixer. The controls appear automatically in the mixer when a strip's input is patched to a Merging device analog preamp.

Mixer showing Hapi MK III Preamp Remote Controls

Note: Please ensure that AD inputs have first been connected in the ANEMAN application. Once connected they will be available in the Pyramix Mixer.

If the Merging device Preamp Remote section is not visible click on the **+ Preamp** Expand button on the right-hand side banner of the mixer.
The controls enable analog gain to be set, the Pad and High-pass Filter to be activated, 48V Phantom Power to be switched, Phase to be reversed and the Preamp to be switched between Mic, Line and Instrument. If Channels patched to Hapi MK III analog preamps are 'VCA' grouped then the Preamp Remote Controls in the VCA Group strip will affect all members of the Group.

> **Note:** Anubis and MT-48 have instruments inputs (different impedance) that Horus and Hapi cards do not have. If one selects "Inst" on the Input mode drop down menu, and Line is displayed, it means that this option is not available in the connected Mic Preamp.

Merging Technologies RAVENNA/AES67 devices Preamp Remote Controls – Detail

HORUS/HAPI Preamp Remote Controls + Anubis/MT-48 for Instrument

The field at the top shows the Preamp Gain set with the knob. Adjustable between **0dB** and **60dB** when the preamp is switched to **Mic** or **Line**. May also be clicked to enter a fader gain value directly.

Pad	Lights purple when the Pad is active.
HPF	Lights green when the 80Hz Filter is active.

Phase	Lights Blue when Phase is reversed.
48V Phantom	Lights red when the 48V Phantom Power is switched on.
Mic/Line	Displays the current preamp mode. Clicking on the box pops-up a list with the choice of Mic or Line
Ins	Only available for Anubis and MT-48, selects the preamp mode into the Instrument modus

Notes: When the last mouse click was somewhere in the Preamp Control section of the mixer strip the gain can be adjusted from the keyboard up and down arrows in 0.5dB increments.

Control of Individual Channels in Stereo Strips
Clicking the **+** button next to the **Mic** or **Line** indicator in a stereo channel opens the **Preamp Channels Control** panel.

Preamp Stereo Strips Control panels

This panel enables the same parameters found in a mono Strip to be set per channel. By selecting All – L-1 or L-2 one can decide if the modification is applied to both Preamps or only one. Returning to the All section, every modification will keep the delta for example in between 2 different Mic Preamp gains.

Control of Individual Channels in Multichannel MCS Strips (5.0 in the example below)

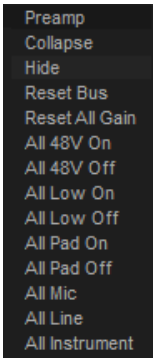
etc for all other channels

This panel enables the same parameters found in a mono Strip to be set per channel. By selecting All – L-1, C-2, R-3, Lrs-4 or Rrs-5 one can decide if the modification is applied to all Preamps or only one. Returning to the All section, every modification will keep the delta for example in between 2 different Mic Preamp gains and will indicate “various” if values are not identical.

VCA Group Strip
When changes are made in a VCA Group Strip all controls of all group members will update to match. However, if the Gains of each strip are different the gain will not go below 0dB for the lowest strip’s PreAmp Gain value when using the VCAGroup control. This 0dB barrier can be broken by using **Ctrl** while changing the gain. Of course this means that any strips affected will lose their gain relationship with the other strips in the group.

Note: Where a button is half lit this indicates there are mixed settings “behind” the button. E.g. buttons on a VCA Group Strip. When a button in this condition is pressed the parameter is switched **On** in all channels affected

Merging Technologies RAVENNA/AES67 devices Preamp Remote Controls Context Menu
Hovering over the expand/collapse **+** or **-** button for the section pops-up a context menu:



Collapse	Hides the controls but leaves the gain value visible.
Hide	Removes the Preamp control section from the Mixer display. It can be restored by hovering the mouse over the bottom **+** button and selecting **Console > Show All**.
Reset Bus	Resets all the Preamp Gain settings to **0dB**.
Set All Gain	Sets all the Preamp Gain settings to **30dB**.
Reset All Gain	Resets all the Preamp Gain settings to **0dB**.
All 48V On	As it says.
All 48V Off	As it says.
All Low On	Switches all the **HPF**s **On**.
All Low Off	Switches all the **HPF**s **Off**.
All Pad On	As it says.
All Pad Off	As it says.
All Mic	Switches all the Preamps to **Mic** mode.
All Line	Switches all the preamps to **Line** mode.
All Instrument	Switches all the preamps to **Instrument** mode when available for (Anubis/Mt-48)

Mic Preamp Recall Options
When opening an existing project, opening or switching between multiple projects and when creating a new project from scratch or from a template the Mic Preamp settings behavior is customizable in **All Settings > Hardware > Mic/Pre Remote**. Please see: **Mic/Pre Remote on page 765**

Effects and Plug-ins

Please see also: Effects and Plug-Ins on page 356

Mixer Strip Controls

When **Native VS3 Effects**, **VST Plug-ins** and **External Inserts** are instantiated in mixer strips each instance has a block of one or two buttons. The full Effect name, Plug-in name or **External Insert** pops-up along with the required delay compensation when you hover the mouse pointer over each block:

Mixer Strip Plug-in Controls with Name and Dynamic+EQ Curve when applicable

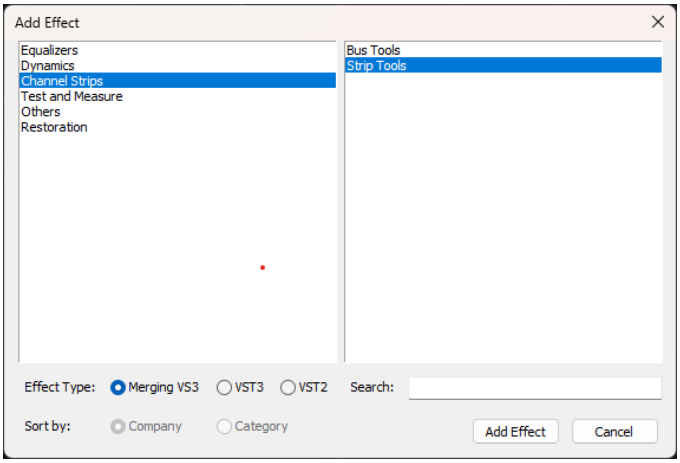
Buttons

Each block has one or two buttons. The left-hand, yellow button is lit when the effect or insert is switched on. Switching an effect or insert off removes it from the signal chain and this may well be audible. The right-hand, red button indicates that the effect is **Bypass**ed when lit. Bypassing an effect retains the same delay as when the effect is active. Further, well behaved effects will continue to calculate internal parameters when bypassed making seamless switching possible. When **Full Delay Compensation** is selected, Effects and Plug-ins that correctly report their latency will have their delay compensated. This delay is maintained when the Effect or Plug-In is in **bypass** mode. **Please see also Mixer Delay Compensation on page 272**

Tip : Clicking whilst holding CTRL allows to bypass the Plugin (keeping the deal compensation) and the indicator will be RED (instead of yellow)

Native VS3 Plug-ins

To add a VS3 plugin (left) click on the "**+**" just above the gain indicator on the strip/bus where the plug-in is to be added. 



Add Effect dialog popup

The popup dialog box will adapt and display the plugins installed onto your computer.

The **left pannel** is showing plugins by **type**, on the **right pannel** the plugins available in that category will be **listed in alphabetic order**.

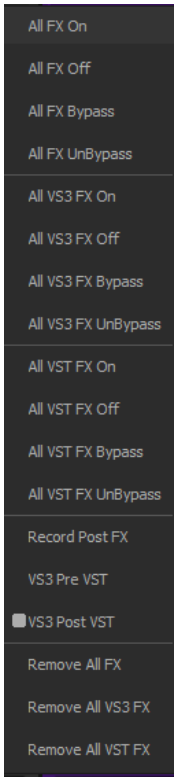
Tip: using arrows (up/down or left/right) will go through the type TAB will then activate the right pannel with the same shortcuts (SHFT + TAB goes back to the left pannel) ENTER will add the chosen effect.

Effect Type; will show either VS3 plugins, VST3 plugins or VST2 plugins.
In VST3 or VST2 you may choose if you wish to classify the types (left pannel) by the plugin **manufacturer (company)** or by the **type (category)**
In VS3 this choice is not available.
The search tool, searches plugins by their name only, its shows the list and the Effect type next to the name in brackets ()

The Square, in the Plugin Bar, allows to open all plugins of the selected strip in one click

The minus, closes all Plugins open from the selected strip

The menu button opens a menu to manage all FX's at once, or VS3 and VST separately.



The Plugin/Effect menus is self explanatory. It is the same for the strips and busses

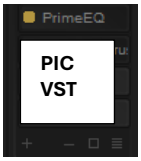
If you wish apply a common choice to several strips and/or busses, select the desired strips with SHFT+ CTRL to select individual strips and busses (by clicking on the strip/bus number) or SHFT from / to will select a range

Opening the Plugin/Effect menu and selecting whilst holding CTRL+SHFT the desired choice, e.g. "All FX Off" and all VS3 and VST Plugins from all selected strips and bussed will be set on OFF.

Note: Although VS3 and VST Plug-ins can be added at any time, even during playback, without rebuilding the mixer, if the plug-in reports a Delay Compensation Value, the mixer must be rebuilt before this is compensated for. You will also notice the 

green DS turning RED. By clicking in it, it will compensate it again (with eventually an audio short breach).

Ghost Effects and Plug-ins
Essentially, **Ghost** Effects or Plug-ins mean that if you load a project containing an effect or plug-in which is unavailable on your machine, this plug-in will appear in the mixer strip as a Ghost plug-in. Subsequently saving the project will not trash the missing Plug-in's state information. When a plug-in is a Ghost its name appears crossed out in the mixer :



Ghost Plug-in

Removing, Copying or Moving VS3 Effects and VST Plug-Ins
If you wish to remove all plugins at once on a strip/bus or a selection of strip & busses, please refer to page 214

On the mixer you may move directly by **drag and dropping** and effect to another strip / bus

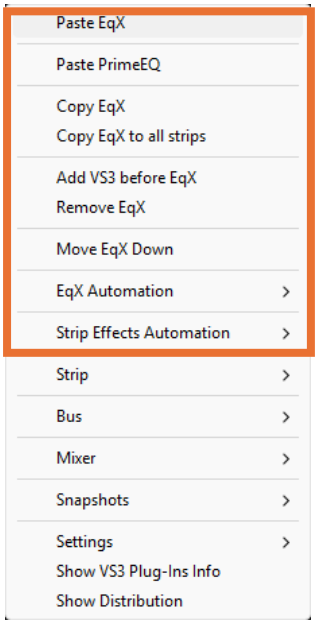
Whilst holding **CTRL you duplicate** the plugin on the desired strip or bus, including its setting (for example for an EQ, the curve will remain in the copied plugin)

If you wish to insert the same plugin in multiple strips, you select the desired plugin, right click on the plugin and select “Copy plugin name” and then select the destination Strip or selection of Strips and choose in the same contextual right click menu “Paste plugin name” whilst holding CTRL+SHFT. If you wish to copy the desired plugin to all strips, choose “Copy plugin name to All strips”

> **Note :** when doing multicopy selections or copy to all, it is not possible to mix strips and busses

When using the Plugin/Effect menu to remove **All plugins** (or All VST or All VS3), make sure to confirm the action whilst holding **CTRL+SHFT** when the confirmation popup is displayed.

Plugin contextual menu (right click)
Right-click on an Effect in a Strip to open the context menu and hover the cursor over **VS3 Effects or VST Effects**. Here you can make a number of changes to the Effects

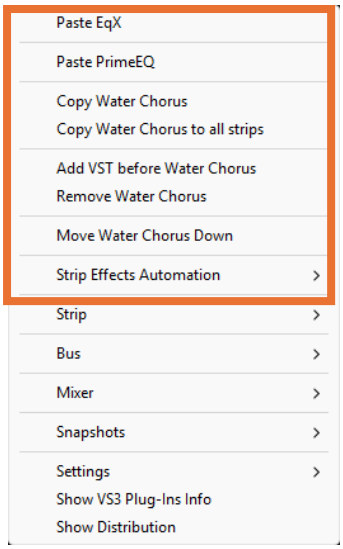


VS3 plugin contextual menu

VS3
Right-click on an Effect in a Strip to open the context menu and hover the cursor over **VS3 Effects**. Here you can make a number of changes to the Effects
Paste “VS3 Effect Name” because previously copied, pastes the effect within the strip
Paste “VST Effect Name” because previously copied, pastes the effect within the strip
Copy “Effect Name” Copies the effect for pasting into another Strip (**Copy** the Effect then right-click in the target Strip and select **Paste**).
Copy “Effect Name” to all strips Copies the Effect you right-clicked on to all Input Strips, but not to any Buses, regardless of whether the original effect is instantiated in an Input Strip or Bus.
Add VS3 before “Effect name” opens the dialog box to add an effect
Remove “Effect Name” Removes the Effect you right-clicked on.
Move “Effect Name” Up Moves the effect you right-clicked on **Up** the list.
Move “Effect Name” Down Moves the effect you right-clicked on **Down** the list.

> **Note:** The **Up** and **Down** options are only shown when a move is possible. It can also be done with the mouse.

Automation
Enables the Automation mode to be set for the entire Effect.
Strip Effects Automation
Sets the automation status for **ALL** plugins on he strip (VS3 and VST)



VST plugin contextual menu

VST

Right-click on an Effect in a Strip to open the context menu and hover the cursor over **VST Effects**. Here you can make a number of changes to the Effects

Paste "VS3 Effect Name" because previously copied, pastes the effect within the strip

Paste "VST Effect Name" because previously copied, pastes the effect within the strip

Copy "Effect Name" Copies the effect for pasting into another Strip (**Copy** the Effect then right-click in the target Strip and select **Paste**).

Copy "Effect Name" to all strips Copies the Effect you right-clicked on to all Input Strips, but not to any Buses, regardless of whether the original effect is instantiated in an Input Strip or Bus.

Add VST before "Effect name" opens the dialog box to add an effect

Remove "Effect Name" Removes the Effect you right-clicked on.

Move "Effect Name" Up Moves the effect you right-clicked on **Up** the list.

Move "Effect Name" Down Moves the effect you right-clicked on **Down** the list.

> **Note:** The **Up** and **Down** options are only shown when a move is possible. It can also be done with the mouse.

Automation

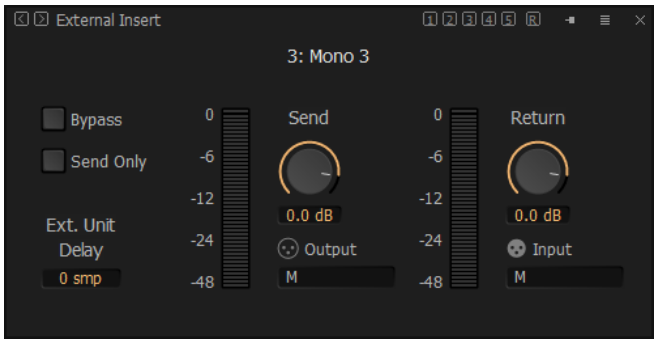
Enables the Automation mode to be set for the entire Effect.

Strip Effects Automation

Sets the automation status for **ALL** plugins on he strip (VS3 and VST)

External Insert

To add an External Insert simply click on the + on the strip where the plug-in is to be added and choose in the pop up dialog **Merging VS3 > Others > External Insert**



Mixer Strip External Insert Plug-in Control Window

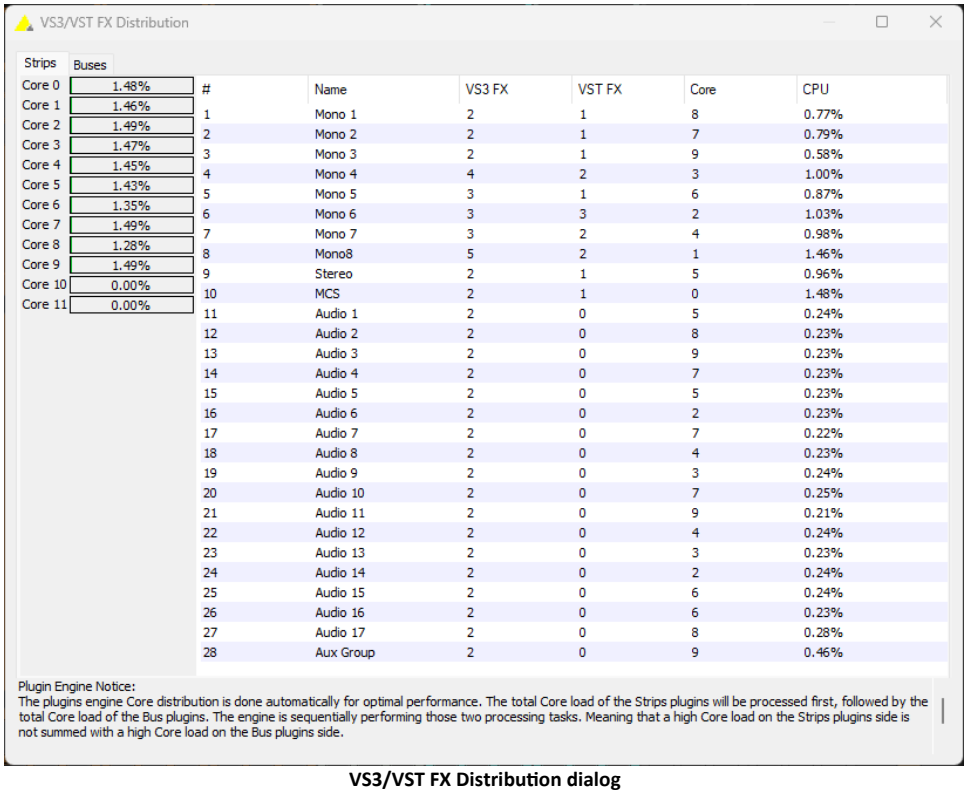
Send and **Return** Connections can be made by clicking on black bar below the XLR icons and levels set with the knobs. When you have determined the delay introduced by the I/O loop including the external effect the value in samples should be entered in the **Ext. Unit Delay** field.

Mixer Strip External Insert Plug-in Control Window SEND ONLY

By choosing Send Only, the External Insert will send the output via a physical output and the signal in the strip will continue to behave as in a normal strip, going through the busses.

Show Distribution

Available from the right-click context menu invoked anywhere on the mixer surface, the **Show Distribution** dialog shows the current **VS3/VST** plug-ins distribution and load.



VS3/VST FX Distribution dialog

The Distribution Dialog shows two Tabs **Strips** and **Buses**:

Strips Tab

- Available Cores with the percentage utilisation of each
- Strip/Aux number
- Strip/Aux name
- VS3 FX - number of plug-ins
- VST FX - number of plug-ins
- Core Assignment
- CPU load.

The Plugins Distribution Core Reading:

Buses Tab

- Available Cores with the percentage utilisation of each
- Bus number
- Bus name
- VS3 FX - number of plug-ins
- VST FX - number of plug-ins
- Core Assignment
- CPU load.

The time duration of the plugin itself is measured. Time to process Audio Frame / Duration of the plugin itself * 100 = Load for a single plugin. Multiple plugins (on a selected **Strip** or **Bus** for example) are then computed and the sum of those calculated.

Note: Other load readings:

The Pyramix CPU reading:

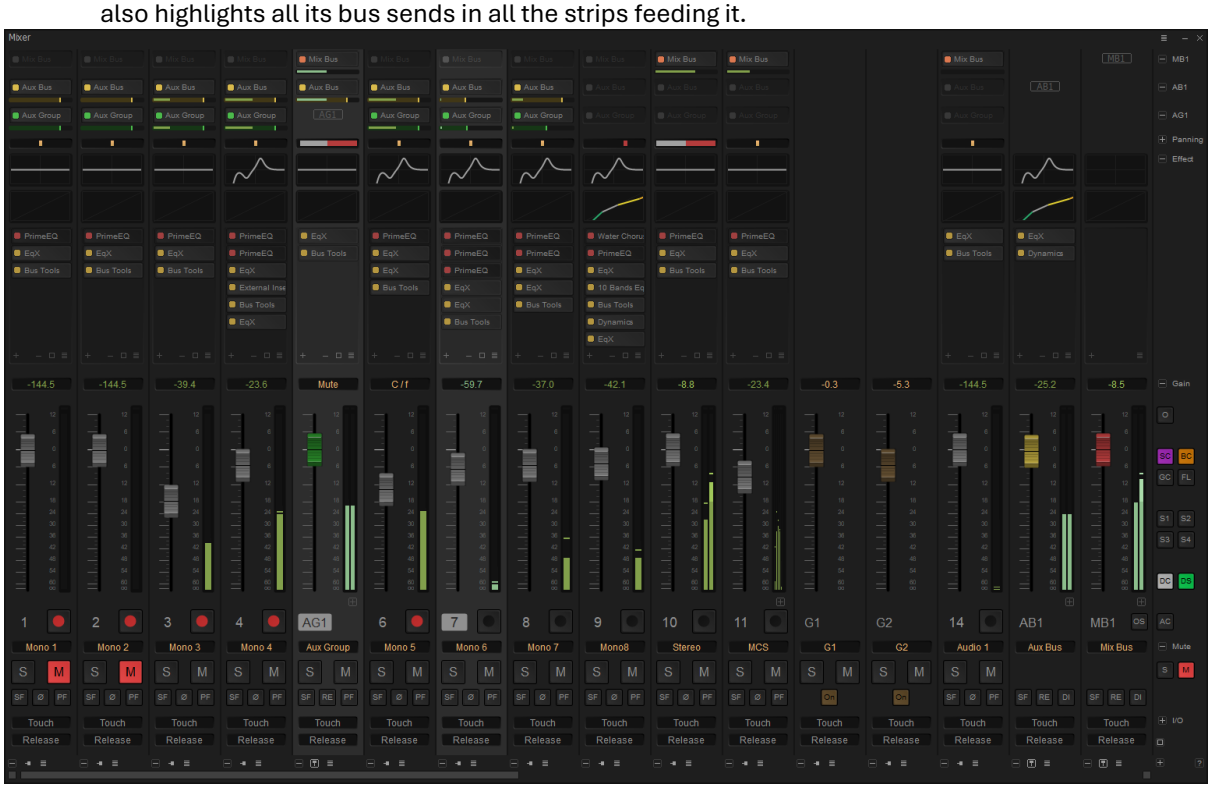
The CPU load displayed in the Pyramix window bottom bar is not the CPU usage as computed in Windows Task Manager. CPU load in Native is computed in this way: (time to process audio frame) / (duration of one frame) * 100.

Thus, it is the percentage of time used to process in one audio frame duration; this indicator is more useful than CPU Usage because it takes into account CPU stall during processing time. In MassCore based systems the CPU: load indicator is supplemented by a VST: Core load indicator in the Title Bar.

Windows Task Manager:
Windows with its Task Manager CPU display measures the CPU time as a percentage of the CPU's capacity. So these three windows cannot be expected to show the same readings.

Highlighting

To aid in comprehension Strips and Buses are highlighted when selected. Highlighting a bus strip also highlights all its bus sends in all the strips feeding it.

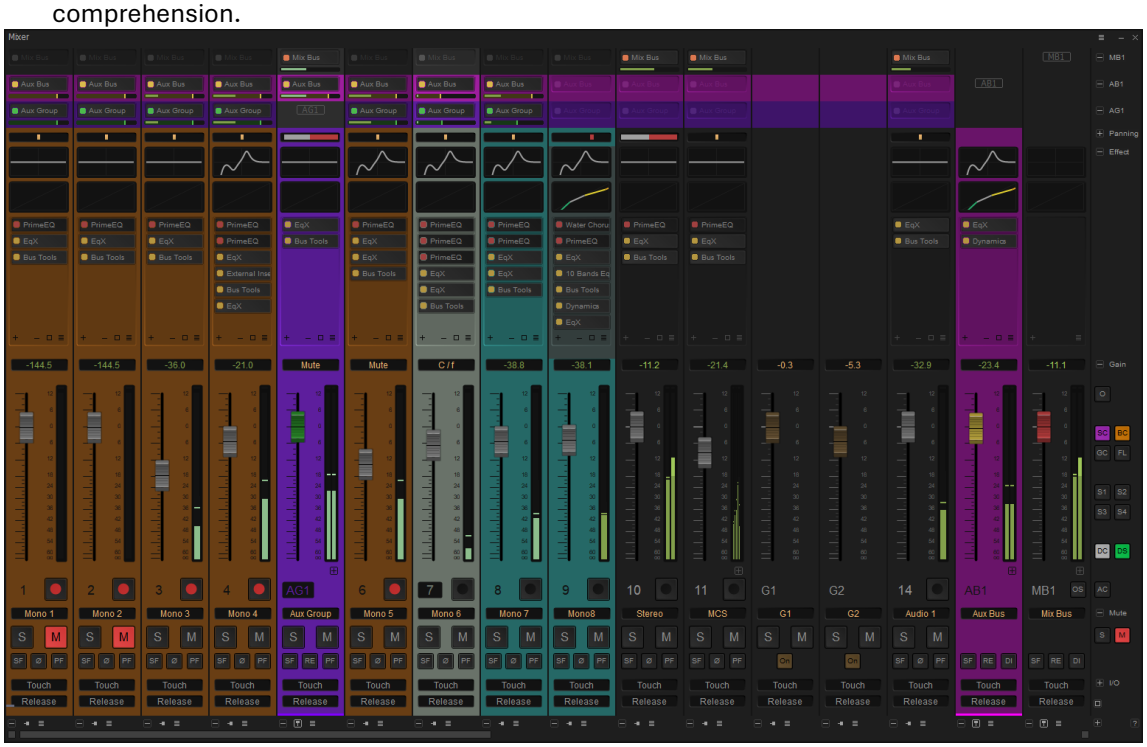


Mixer with Strip 8 selected

In this screenshot Strip 7 is selected. The Aux Group **AG1** is also selected. Strip highlights follow the Tracks selected in the Timeline. Multiple selections are possible.

Colors

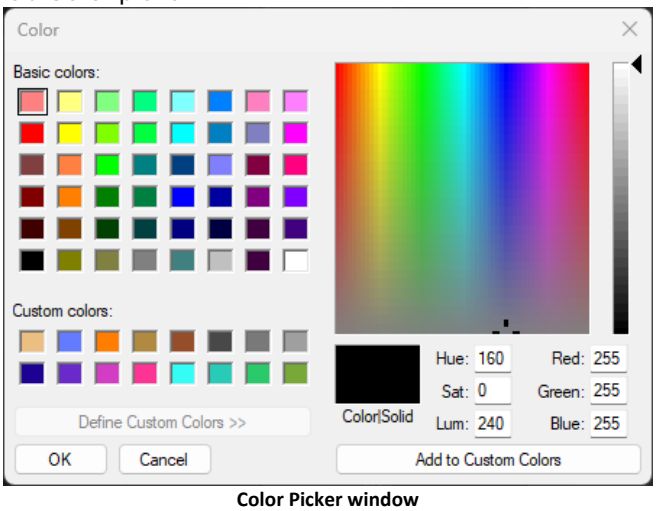
Color can be added to Input Strips, Buses, Auxes, Sub-Groups and VCA Groups to improve comprehension.



Mixer with Strip Bus and Group colors active

Bus, Aux and Sub-group colors are set via the +- pop-up menus. Input Strips follow the color set in the Track Header or in the Tracks Tab window (they can also be set with the Strip contextual menu but will not change the colour of the track)

Change Color Opens a **Color** picker:



Color Picker window

Hide or **Show Colors** hides or restores the colored lines. **Change color** allows the color of an individual bus to be altered. **Reset color** restores the color to its previous state.

Multiple Strip Selection and Operations

Multiple Console Strips can be selected together.

Select Multiple Strips
Click on a Strip then press and hold the **Ctrl** key and click on the Strip **number (**below the fader) to add or remove other strips to or from the selection.
Click on a Strip then press and hold **Shift** and click on another Strip **number** (below the fader) to select all Strips between the first selected and the last.
To cancel the multiple selection click on a Strip **number** (below the fader) on any of the selected strips.

Linked Actions on Multiple Selected Strips
Press and hold **[Ctrl] + [Shift]** to perform any of the following on all selected (highlighted) strips:

- Double-click on any of the Faders, Gain Knobs or Pans in the selected strips to reset all of them to the default value.
- Move Faders or Gain Knobs in any of the selected Strips moves all of the faders or knobs in the selected strips while preserving their delta.
- Click on any button, e.g. On/Off, Mute, Solo, IP, Phase, Record Ready, etc... to set the same state on all the selected strips.
- Add or subtract all selected Strips to or from a VCA group. (When subtracting the **Leaving VCA Group** dialog appears for each Strip which is assigned to the VCA Group.)
- Adding Effects (Support for VS3 effects)
- Copying Effects (Support for VS3 effects)
- Stem change

  Note: If [**Shift**] only is pressed and held the above actions are performed on **ALL** Strips regardless of any selections.

On a MultiBus Matrix router if [**Control**] **+** [**Alt**] are pressed and held then the patching is performed on the selected Strips by incrementing the patched slot for each Strip.

General Mixing Bus Sends Matrix Grid
The General Mixing Bus section in the **Mix** page can be operated as a big Matrix Grid.

Clicking on any **On/Off** button of the **Send** components and dragging the mouse in any direction will create a diagonal patching (or unpatching) on neighbouring components.

Pressing the **Ctrl** key while clicking and dragging creates a rectangular block of **On/Off** instead of a diagonal. Useful for quick unpatching of a region.

This feature is best used when the complete mixer is collapsed, both Strips and Buses, however it is still functional if some strips or bus are not collapsed.

Mixer Configuration

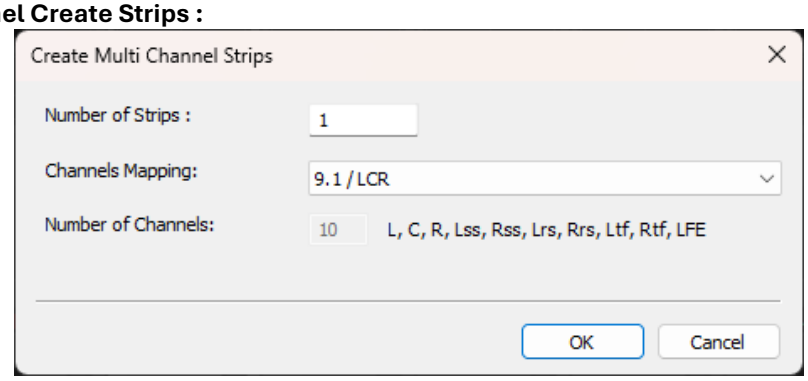
Adding Strips

Adding Input Strips

Access the right-click context menu with the mouse cursor over a blank area in an existing strip. Choose **Strip > Add**:

Mono	Opens a dialog to set the number of **Mono** Strips to be created.
Mono - Direct Monitoring	Opens a dialog to set the number of **Mono-Direct Monitoring** Strips to be created.
Stereo	Opens a dialog to set the number of **Stereo** Strips to be created.
Stereo - Direct Monitoring	Opens a dialog to set the number of **Stereo Direct Monitoring** Strips to be created.
Multi - Channel Strip	Opens the **Create Strips** dialog (see below)
VCA Group	Opens a dialog to set the number of **VCA Group** Strips to be created.

Multi Channel Create Strips :

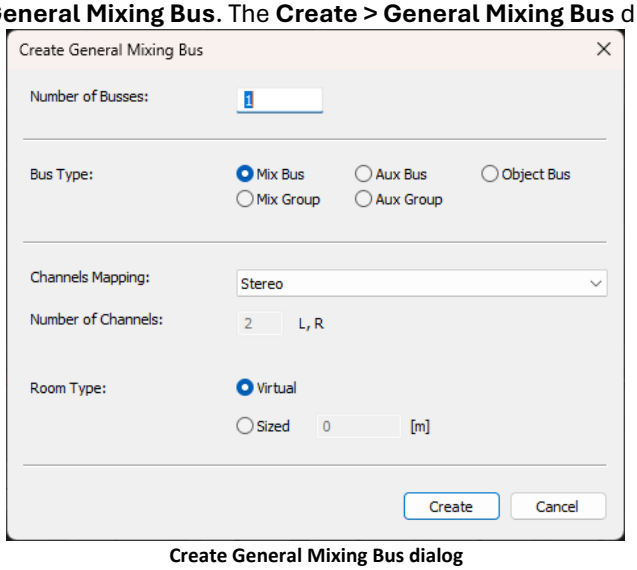


Create Strips dialog

Number of Strips :	Type the number of strips required in the field.
Channels Mapping:	Select a Mapping from the drop-down list plus **Custom**.
Number of Channels	Shows the number of Channels and their designations. The number field is grayed and can only be typed in when **Custom** is chosen as the Mapping.

Adding Buses (Mix – Aux – Object)

Select **Bus > Add > General Mixing Bus**. The **Create > General Mixing Bus** dialog opens



Create General Mixing Bus dialog

Number of Buses:	Type the number of Buses to be created in the field. (Default is **1)**
Bus Type:	The radio buttons determine which type of General Mixing Bus will be created:

- Mix Bus
- Aux Bus
- Object Bus
- Mix Group
- Aux group

Channels Mapping:	The drop-down lists all the pre-defined Room / Channel mappings and **Custom**. In most cases there will be a suitable mapping in the list. If you choose **Custom** then set the number of Audio Channels:
Number of Channels:	Only available when **Custom** is chosen in **Channel Mapping:**
Room Type	The radio buttons give the choice of **Virtual** Or **Sized**. If sized is selected enter a value in meters in the field.
Create	Creates the Bus or Buses with the parameters selected and exits the dialog.
Cancel	Exits the dialog without creating any Buses.

Panning Control Buses

Access the right-click context menu with the mouse cursor over a blank area in an existing strip.
Select **Bus > Add > Panning Control Bus**. A new panning control Bus is created in the Mixer.

Note: you can then decide for each Strip which panner is used for e.g. a mix 1 and a mix 2, or an aux. For more details, see **page 181**

Rearranging Strips and Busses

Input strips, VCA group strips and Sub-group strips are moved directly in the console UI and may be moved anywhere whilst using **Ctrl + Shift + Alt**
Strips, VCA Groups, SubGroups and all Bus types can be moved.

Using Context Menu:

- Select one or more Strips
- In the right-click context menu choose **Strip > Copy Selected Strips**
- Select a destination Strip <x>
- In the right-click context menu choose **Strip > Move Copied Strips Before <x>** or **Move Copied Strips**
  Note : the copy paste is not available for Busses After <x>

Using Drag & Drop:

- Select one or more Strips
- Press **Ctrl + Shift + Alt**
- Drag the selected Strips onto any other Strips
  Note: If a Sub-group or VCA group is not moved, i.e. located at the far right of all the input strips, it is locked in place when scrolling the input strips. When a Sub-group or VCA group is moved in between other input strips it is then scrolled with them.

Effect Management

Add Effects on all Strips Selected

Select the Strips you wish to add the effect to.
Press the arrow on the plugin section of the mixer.
From the pop up window select the desired plugin (see **page 213** for details)
Adding effects on more than one Strip; select multiple strips and press **Ctrl+Shift** when confirming with the plugin pop up window

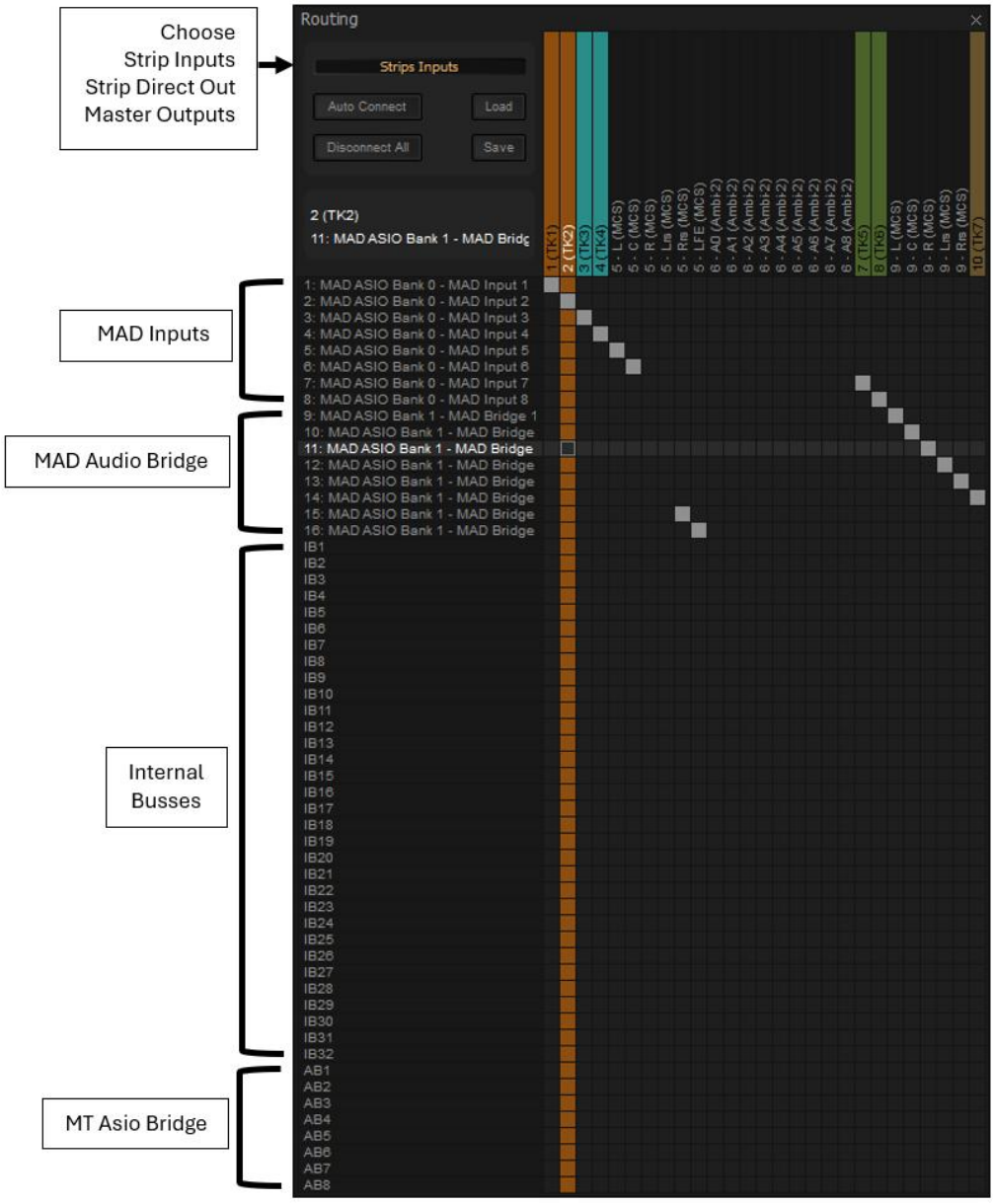
Remove Effects on all Strips selected

Select the Strips you wish to remove effects from.
Hover the Cursor over the Effects Slot you wish to clear.
Right-Click to open the context menu.**VS3 Effects > Remove > xxx**
Press and Hold the **Ctrl + Shift** keys.
Clicking on the Effect removes it from the Slot on all Strips selected.

Route Page

To open the Route Page go on the top right menu of the mixer and select I/O Routing

Route brings together all routing to and from physical I/O in an intuitive matrix routing grid environment. It opens in the **Strips Input** page:



Mixer Route Page – Strips Inputs

Note: the left column will adapt to the available inputs set into the VS3 control pannel and to the driver, in this case the MAD (Merging Audio Device) – connecting Horus, Hapi, Anubis or MT48 on a Masscore system will directly show the type of input/output and the name of the device.

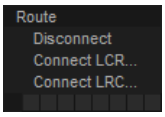
On the left column a few different inputs can be shown that are represented in the pic above

Input 1 - 8	MAD Input 1 bank of 8
Input 9 - 16	MAD Audio Bridge 2 bank of 8 – to bridge another ASIO app over MAD
IB 1 – 32	Internal Bus 1 – 32 (can be changed in **General Settings > Mixer > Mixer Settings > Internal Busses**)
AB 1 – 8	MT ASIO Bridge inter-connects ASIO application with Pyramixa

Strips Direct Out and **Masters Outputs** are similar.

Making Connections
When the cursor is hovering over a destination crosspoint the column and row are highlighted for ease of viewing. Bus colors are carried across from the Mixer. If the cursor is over a crosspoint which is part of a multichannel strip or bus the other channels in the group are also highlighted dimly. In **Strips Inputs** clicking on a crosspoint routes the source in the left-hand column to the destination in the top row. In **Strips Direct Out** and **Masters Outputs** sources are horizontal and destinations vertical. Clicking and dragging allow multiple assignments to be made rapidly.

Right-clicking a crosspoint pops-up a context menu with options appropriate to the destination:



Auto-Connect
Connects all the **Strip Input Channels** to physical inputs in ascending order.
Disconnect All
Removes all crosspoint assignments.
Load Routing Save Routing
Loads and Saves the current console Inputs, Outputs and Direct Out routing from/to an XML file.

Info
The **Info** box shows detail about the currently highlighted crosspoint.

I/O Bus Capacity

In a MassCore system the only limitation on the number of I/O buses is the available power. For now the maximum number of buses is artificially limited in code to 512 (at 1FS, 256@2FS, 128@4FS, 64@8FS).

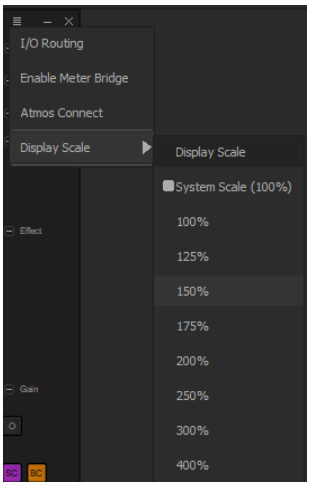
Internal Return Buses

Some of the time slots within MassCore can be reserved to convey **Aux Send** or **Master Output** Buses back to input strips. In effect, these are internal send/return paths. To change the number of available Internal Return Buses, close all open Projects (if any) and go to:
Settings > All Settings > Mixer > Mixer Settings.
The number of Internal Return Buses can be set using the **Internal Buses** combo box. Click on the **OK** button to memorize the setting and exit.
The number of **Internal Return Buses** you assign here will be available as possible channel strip sources in the mixer.

> **Note:** Please be aware that a Mix Group Bus or Aux Group Bus will auto-take Internal Bus connection resources, starting from the last one. E.g. IB384-IB385 for the first two SubGroup Channelsadded to a Mixer. This means that you will no longer see IB384 and IB385 in the IB list.

Mixer main menu

The main menu on the top right of the mixer window has several functions:

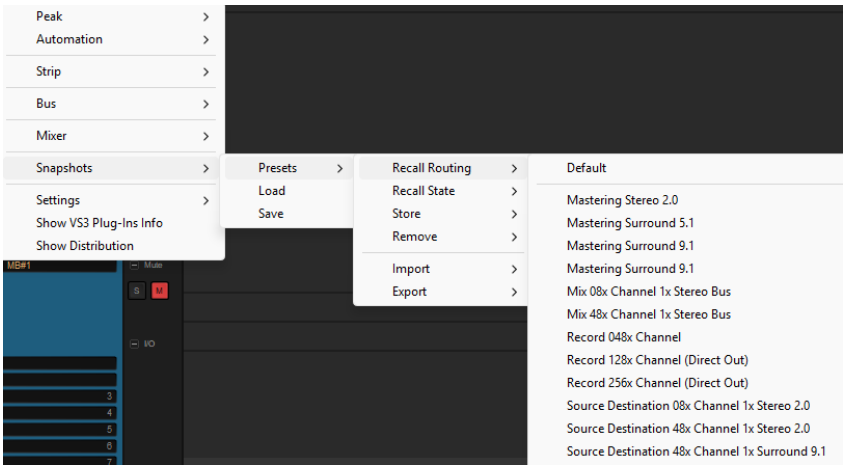


Choices

I/O Routing	opens the floating I/O routing window **(see page 223)**
Enable Meter Bridge	enables/disables the **Meter Bridge (see pagexxx)**
Atmos Connect	connects to a Dolby Atmos renderer if available and opens the dialog box for the connection setup **(see page xxx)**
Display Scale	Scale the size of the mixer independently of the timeline or VS3 plugins

Save and recall a mixer

The organise page TAB has been removed from the mixer, and the functionalities have been moved to the snapshot section on the right click contextual menu of the mixer



Mixer Snapshot menu

This menu section allows you to save, recall mixer and routing presets including every setting of the mixer, and to manage these either as a preset list or as a file (*.vs3)

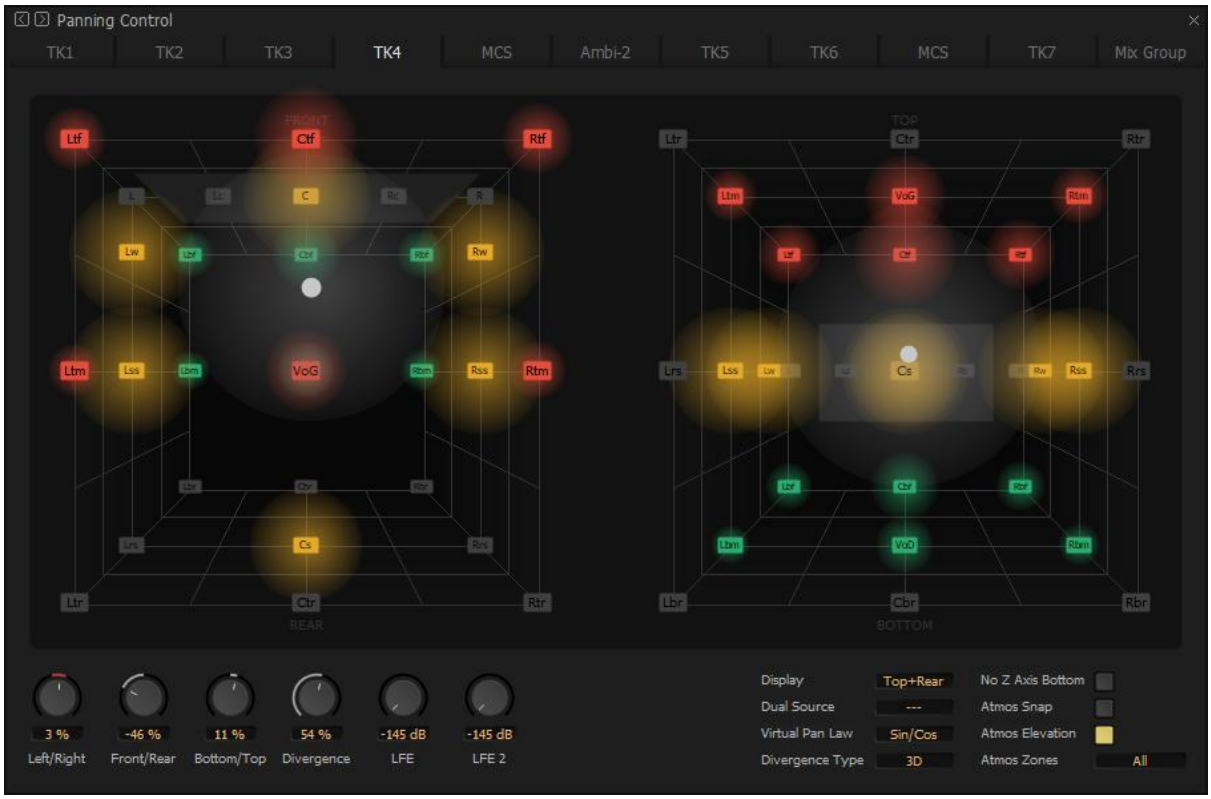
Note: the mixer routing recall will also change the tracks in your timeline and eventually remove or add tracks (with its content) to change this behaviour, enable/disable **Tracks > Synchronise Tracks and Strips**

Load	Recalls a *vs3 mixer preset from a file
Save	Saves a *vs3 mixer preset to a file
Recall Routing	(recalls the entire mixer with all i/o, plugins etc)
Default	recalls the default routing/mixer that has been previously saved as default
List of presets	first the list of factory presets and further down the presets that have been stored in the system
Recall State	(fader/aux positions and hide/show/minimize)
Default	recalls the default state that has been previously saved as default
List of presets	first the list of factory presets and further down the presets that have been stored in the system
Store	
New	stores the actual **Routing and State** of the mixer, and populates the list of presets (a pop up will ask for the name of the preset to be stored)
Default	stores the actual **Routing and State** of the mixer as default
Remove	opens the list of presets previously stored, selecting a preset removes it from the personal preset list
Import	one can import from another Pyramix or Ovation previously saved *,pst file containing all presets for the given VS3 plugin
Export	one can export to another Pyramix or Ovation a *,pst file containing all presets of the given VS3 plugin so that it can be imported elsewhere

3D Panning Control Bus Window

The **Panning Control Bus** window offers far more information and a greater degree of control over all the 3D panning parameters than could be shown on an individual Input strip. It is opened from **View > Windows / Tools > Surround Panner** or the icon in the **Right Title Bar**.

Views
The left hand pane is the view looking down on the virtual room from above.
The right hand pane is the view looking into the virtual room from the back.
Tip : the **TABS** on the top of the panner allow **to jump directly to the desired Strip**



Panning Control Bus window - Mono Source

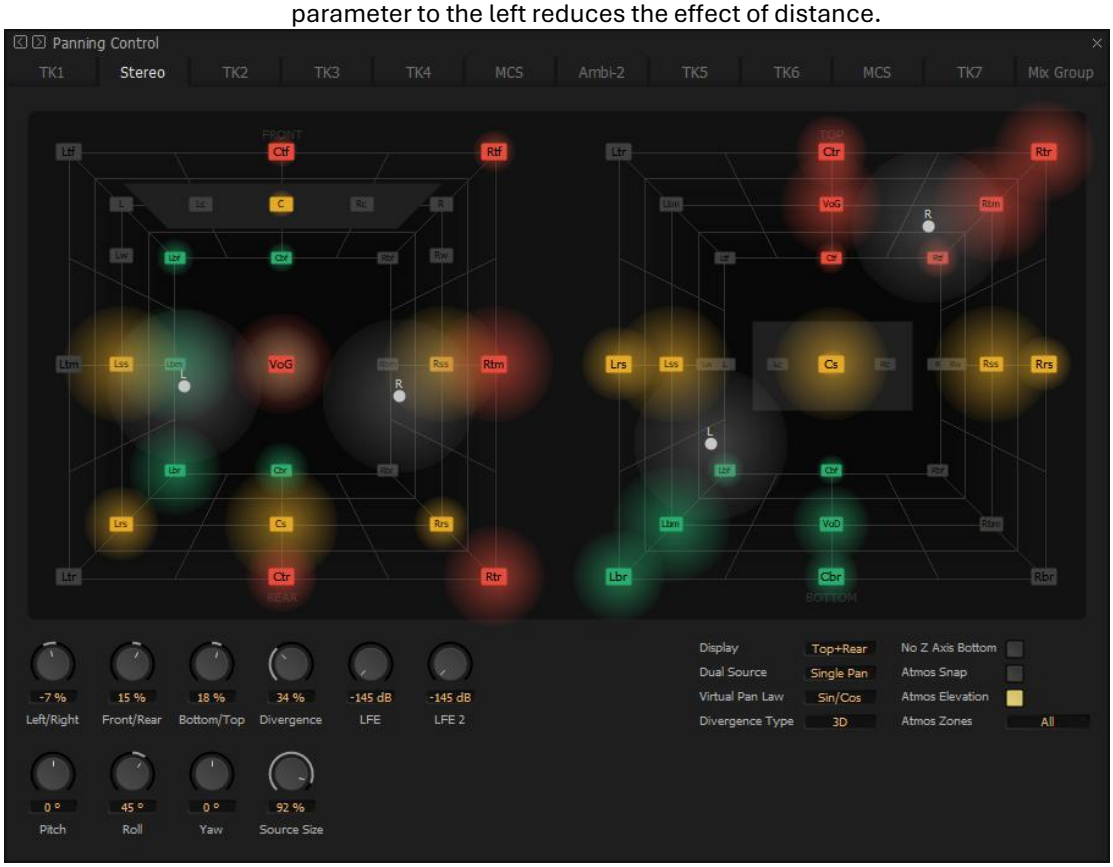
Layers
Speakers are grouped in three layers plus LFEs.
Speakers in he “normal” layer are colored red, the top layer green and the bottom layer blue, LFEs are yellow.

Controls
The controls present at the bottom of the window vary depending on the source type.

Mono Source (Strip)

Left/Right	Pans all source channels between left and right.
Front/Rear	Pans all source channels between front and rear.
Bottom/Top	Pans all source channels between bottom and top.
Divergence	Sets the amount of divergence.
LFE	Sets the LFE level.
LFE2	Sets the LFE level to the second Sub-woofer. (Only shown when present in the Room Configuration.)
Divergence Type	Clicking in the field cycles through **1D**, **2D** and **3D**
1D	Divergence is applied Left and Right.

2D	Divergence is applied Left, Right, Front and Rear.
3D	Divergence is applied Left, Right, Front, Rear, Top and Bottom.
No Z Axis Bottom	Disables negative values for the Z axis (negative values are not allowed for Dolby Atmos ADM Master)
Atmos Snap	When active, the source will snap to the nearest speaker in the Dolby Atmos Renderer (Dolby Atmos Renderer 3.7 or above required).
Atmos Elevation	Enable / Disable Dolby Atmos Top channels
Atmos Zones	Clicking on the field cycles through different Atmos Zones, to set the output to pre-defined zones: **All, No Back**, **No Sides**, **Center Back**, **Screen Only**, **Surround Only**.
Virtual Pan Law	Clicking on the field switches between **Sin/Cos** and **Square Root**.
Sized Pan Attenuation	Only applicable to Sized room models. Enables the effect of distance on the attenuation to be exaggerated or reduced by a factor of 5 times. Central position means default attenuation is 1/d, moving the parameter to the right exaggerates the effect of distance, moving the parameter to the left reduces the effect of distance.



Panning Control Bus window - Stereo Source Strip in Single Pan modus

Stereo Source

All of the above PLUS:

Rotation LR	Rotates the image in the horizontal plane. No Change in height.
Rotation FR	Tilts / Rotates the image in the vertical plane Left and Right. Center is fixed.
Rotation BT	Tilts / Rotates the image in the vertical plane from Front to Back

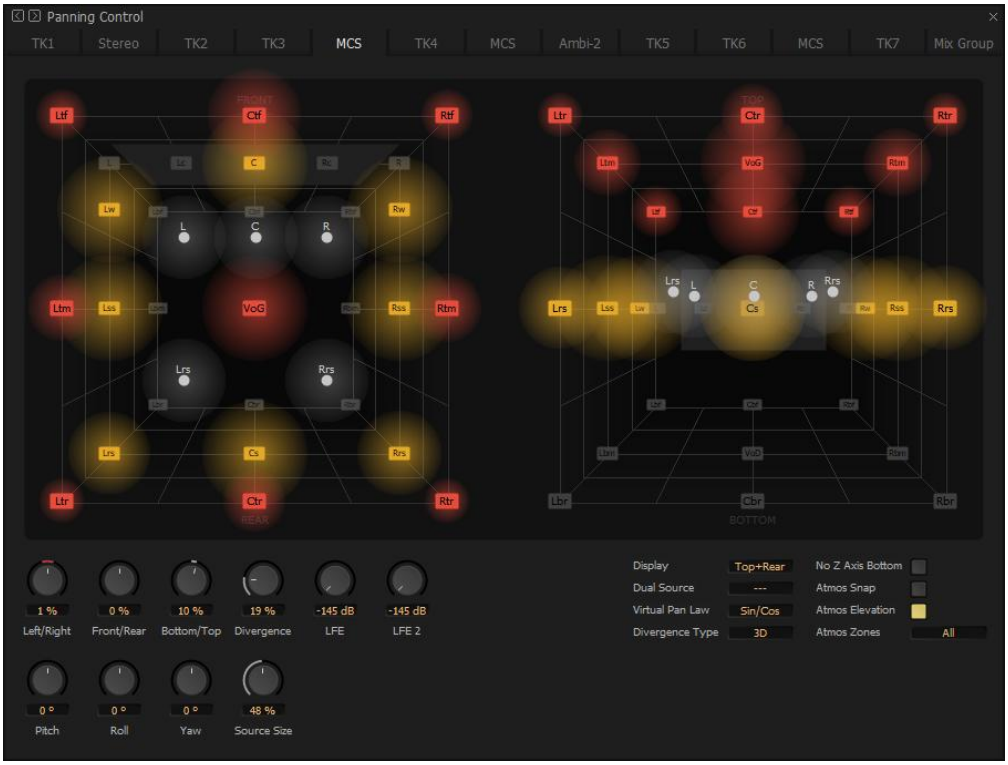
Source Size

Dual Source Mode	Clicking on the field cycles through:
	Balance
	MS Decoder decodes and MS signal with the M sent to Center
	Single Pan Pans the stereo source as a mono source.
	Dual Pan **Rotation** and **Source Size** controls are hidden and replaced by:

2nd Left/Right
2nd Front/Rear
2nd Bottom Top
2nd Divergence
Thus in **Dual Pan** mode the two source channels are dealt with independently.

Dual Pan Modifiers
Double-click on **White** sends it to **Front-Left**.
Double-click on **Red** sends it to **Front-Right**.
Double-click on a **Speaker** sends the **White** to it.
Ctrl + Double-click on a **Speaker** sends the **Red** to it.

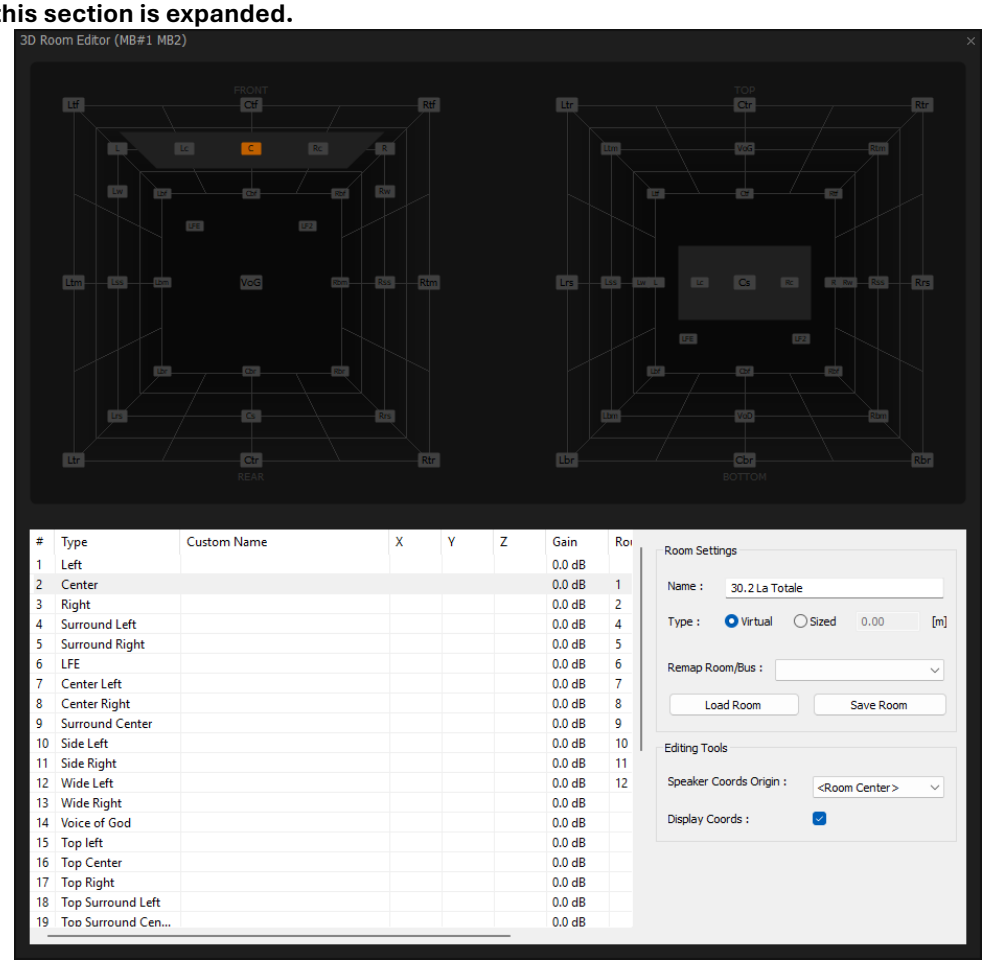
> **Note:** The **3DConnexion Space Navigator** and **SpaceMouse Pro** mice are supported for panning. Please follow the configuration guide which may be found here: https://merging.atlassian.net/wiki/spaces/PUBLICDOC/pages/4820600/3DConnexion+Mouse+-+Configuration+Guide



Panning Control Bus window – 5.0 Source Strip

The 3D Room Editor

All **General Mixing Buses** are configurable in the **3D Room Editor** window. This is opened by clicking on the Bus label in the **Automation, I/0 and VCA** section of the Bus Strip. **Only when this section is expanded.**



3D Room Editor - Virtual mode

GP Bus Channel Configuration or '3D Room' types

Virtual Room Model

The Virtual Room model uses a Stereo Panning based algorithm using either a Square Root or Sin/Cos panning law, extended to all 3 dimensions.

The only User parameter is the Square Root - Sin/Cos choice available either in **All Settings > Mixer > Mixer Settings : Virtual Room / Stereo Pan Law** or **Virtual Pan Law** in the 3D Panner Window.

Channel/Speaker Types

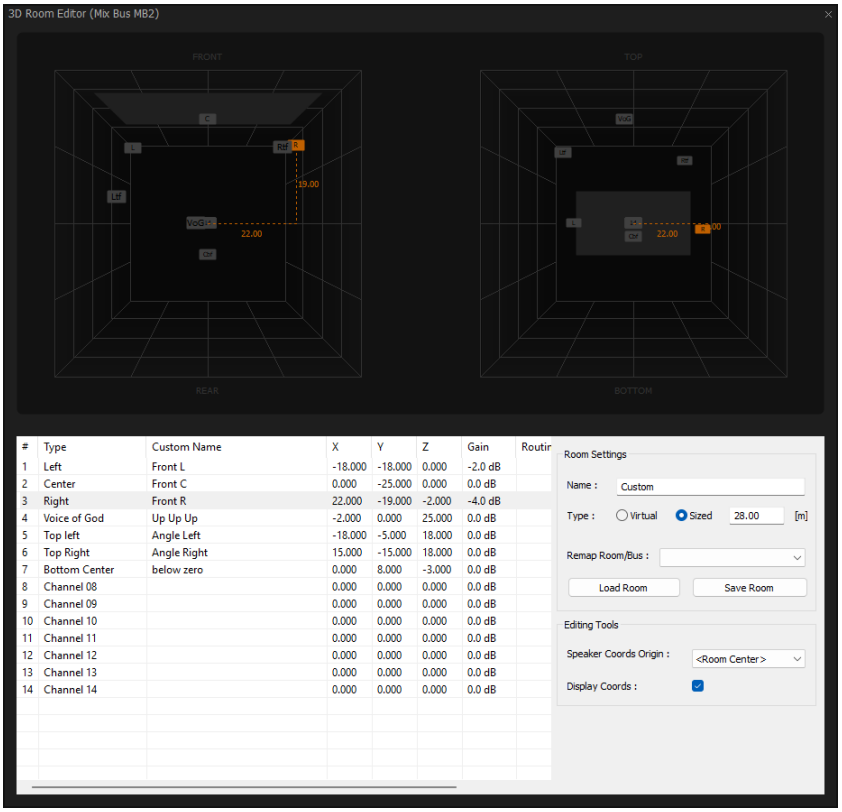
In Virtual Room mode the Channels or Speakers can only be of the 32 types listed below:

1	L	Left	17	Tr	Top Right
2	C	Center	18	Trl	Top Surround Left
3	R	Right	19	Trc	Top Surround Center
4	Ls	Surround Left	20	Trr	Top Surround Right
5	Rs	Surround Right	21	Tsl	Top Side Left
6	LFE	Low Frequency Effects	22	Tsr	Top Side Right
7	Lc	Center Left	23	Bl	Bottom left
8	Rc	Center Right	24	Bc	Bottom Center
9	Cs	Surround Center	25	Br	Bottom Right
10	Sl	Side Left	26	Brl	Bottom Surround Left
11	Sr	Side Right	27	Brc	Bottom Surround Center
12	Wl	Wide Left	28	Brr	Bottom Surround Right
13	Wr	Wide Right	29	Bsl	Bottom Side Left
14	VoG	Voice of God	30	Bsr	Bottom Side Right
15	Tl	Top left	31	VoD	Voice of Devil
16	Tc	Top Center	32	LFE2	Low Frequency Effects E2

Note: Speakers belonging to the three **Height Layers** and **LFE(s)** are color coded as in the above table in the **3D Room Editor** window and the **Advanced Panning Control Bus** window. The speaker selected currently is colored orange.

- The Channel Type directly defines the position of the Speaker in the Room
- The Room has no real-world size, the panning algorithm only uses amplitude for computing levels based on the position of each Speakers/Channels, that is defined by its Channel Type.
- The algorithm ensures that the levels are sharply focused near the closest speaker to the Panner's coordinates.
- This mode is designed for Film, Post-production or Music where no real-world room definition is needed or known in advance and precision is needed to focus on a given Speaker.

Sized Room Model



- Sized Rooms use a Sound in Air propagation/attenuation based algorithm.
- In this mode the panning algorithm uses real distances to compute levels.
- All Speakers output some level, even if very low, wherever the Panner is positioned.
- The position of each Speakers is editable in the Room Editor. The selected Speaker is highlighted in Orange and its coordinates can be changed using the editor.
- By default the sound attenuation depends on the distance from the panning source to each speakers by 1/d. (One divided by the distance.)
- A parameter called **Sized Pan Attenuation** in the 3D Panner Window enables the effect of distance on the attenuation to be exaggerated or reduced by a factor of 5 times.
- Central position means default attenuation is 1/d, moving the parameter to the right exaggerates the effect of distance, moving the parameter to the left reduces the effect of distance.
- In this mode the Room has a size and the Speakers have a editable position, independently of their Type, that is only useful in this model.
- The Room Size definition is the Radius of the cubic Room, i.e. half its boundary size. E.g. if 3m is entered the room is 6m x 6m x 6m.

Left Hand Pannel

The number of the Channel (Not editable).

Type Clicking in the field pops-up the list of **Pre-defined Channel Types**, as above, plus **<Custom>**. Choosing one of the predefined Types sets the **X**, **Y** and **Z** co-ordinates accordingly. However, they are editable.

Custom Name Type in this field to add a Custom Name. This is applicable to pre-defined channel Types and Custom Channels.

X Click and type in the field to set the Left - Right co-ordinate for the speaker.

Y Click and type in the field to set the Front - Rear co-ordinate for the speaker.

Z Click and type in the field to set the Top - Bottom co-ordinate for the speaker.

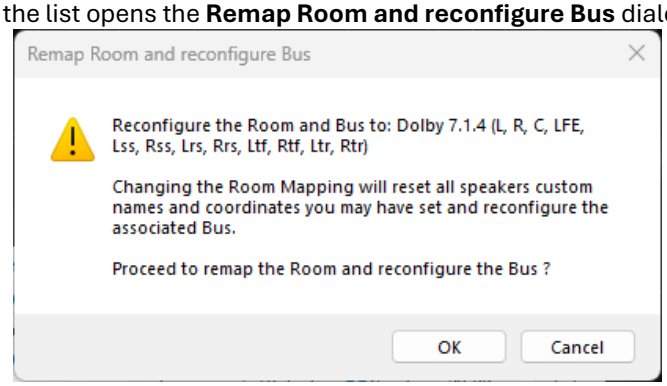
Gain Click in the field and type a value to trim the Speaker output level.

Routing Click in the field to pop-up a list of all destinations available.

Room Settings

Name Click in the field and type to name the Room/Speaker Arrangement.

Remap Room/Bus The drop-down lists all the Pre-defined Room Types available. Choosing one in the list opens the **Remap Room and reconfigure Bus** dialog:

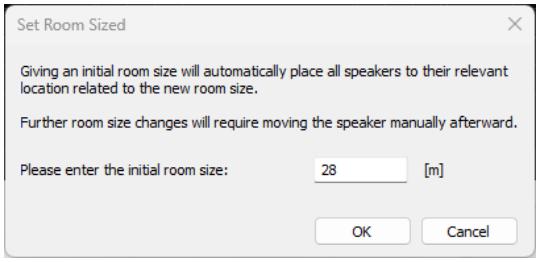


Remap Room and reconfigure Bus dialog

Note: As the dialog indicates, **Changing the Room Mapping will reset all custom speaker names and coordinates you may have set and reconfigure the associated Bus.**

Options are **OK** to reconfigure or **Cancel** to retain the current configuration.

Type The radio buttons toggle between **Virtual** and **Sized**. If **Sized** is selected the **Set Room Size** dialog appears:



Set Room Size dialog

Click in the **Please enter the initial room size:** field and enter a value (in Meters) Click on **OK** to change mode and set the initial room size or **Cancel** to retain the current mode.

Load Room Save Room

When a **Custom Bus** has been created it can be Saved and Loaded into another Bus obviating the need to recreate it. A Saved Custom Bus can be exported to or imported from another Pyramix or Ovation Session. The saved bus includes Sources, X,Y and Z coordinates and Gain.

Editing Tools

Speaker Coords Origin : Determines the base point in space for the XYZ coordinate settings. The dropdown offers the choice of: **<Room center>** or any of the speakers present in the room (by number). Speaker position is either relative to the center of the room, or to the selected reference Speaker.

Display Coords: When checked the coordinates for the selected speaker are shown numerically and by a dotted orange line from the point of origin.

Predefined Room types listed below:

Mono	7.1 SDDS	Dolby Atmos 9.1.6
Stereo	7.0 / ITU-C (2+5+0)	10.2 TMH
2.1	7.1 / ITU-C (2+5+0)	12.2 TMH
Stereo Surround	8.0 / LCR	Auro 8.0
3.0 / LCR	8.1 / LCR	Auro 9.1
3.1 / LCR	9.0 / LCR	Auro 10.1
3.0 Surround	9.1 / LCR	Auro 7.4 / ITU-J (4+7+0)
3.1 Surround	9.1 / ITU-D (4+5+0)	Auro 11.1
4.0 Quadro	9.1 / ITU-E (4+5+1)	Auro 13.1
4.1 Quadro	11.0	KBS 10.2 / ITU-F (3+7+0)
4.0 Surround	11.1	NHK 22.2 / ITU-H (9+10+3)
4.1 Surround	Dolby 3.0	Cube
5.0 / LCR	Dolby 5.0	Cube + Mid Layer
5.1 / LCR	Dolby 5.1	Cube (Corners + Faces)
5.0 / ITU-B (0+5+0)	Dolby 7.0	Cube (Corners + Faces + Edges)
5.1/ ITU-B (0+5+0)	Dolby 7.1	30.2 La Totale
6.0 / LCR	Dolby 9.1	4 x Stereo
6.1 / LCR	Dolby Atmos 5.1.2	1st Order Ambisonic (4 ch)
6.0 / LRC	Dolby Atmos 5.1.4	2nd Order Ambisonic (9 ch)
6.1 / LRC	Dolby Atmos 7.0.2	3rd Order Ambisonic (16 ch)
7.0 / LCR	Dolby Atmos 7.1.2	4th Order Ambisonic (25 ch)
7.1 / LCR	Dolby Atmos 7.1.4	5th Order Ambisonic (36 ch)
7.0 / ITU-I (0+7+0)	Dolby Atmos 7.1.6	6th Order Ambisonic (49 ch)
7.1 / ITU-I (0+7+0)	Dolby Atmos 9.1.2	7th Order Ambisonic (64 ch)
7.0 SDDS	Dolby Atmos 9.1.4	

Mixer Delay Compensation

Summary
Mixer Delay Compensation offers a choice between:

Full
Off

This choice is made in the **All Settings > Mixer > Mixer Settings** page along with a switch to turn Automatic Compensation on or off and a slider to set the **Maximum Mixer Delay Compensation**.

It is also possible to switch it on/off on the right mixer 

banner.

Delay Compensation Switching
As detailed above, Compensation can be selected in the **All Settings** menu. It can also be toggled **On/Off** in theMixer context menu. Right click and select **Settings** then click on **Enable Delay Compensation** to toggle On or Off.

1. Input strip set as a (normal) Input: no compensation. If a Delay is applied manually the output signal of this strip will be delayed by the applied value.
2. Input strip used as a Bus return, i.e. patched to an Internal Bus and set as a bus return (see **Input Strip Mode on page 274**): all other Output Strips are automatically delayed by the amount equal to the Bus internal processing delay.
3. Input strip used as a Bus return, i.e. where the bus signal is sent outside the workstation and returned to a physical Input: All other Strips are automatically delayed by the amount equal to the Bus internal processing delay providing the Input is set as a Bus (see **Input Strip Mode on page 274**). If a Delay is applied manually, for example to compensate for the delay in an external processor, the signal of all other output strips will be further delayed, according to the value entered.

When **Full** is selected, Plug-in effects that correctly report their latency will also have their delay compensated.
Further, this delay will be maintained when the plug-in is in **bypass** mode.
Please see also Mixer Settings on page 775

Delay compensator indicator, please see **page 200** for details

Tip: The keyboard shortcut D will automatically check and recompute the delay compensation, when the Mixer window has the focus, one may also click on the D when it is RED

Maximum Delay Compensation
Pyramix sets a default value for the maximum number of samples of delay that can be compensated automatically.
As effects are added the required total delay value is calculated. If an Effect is instantiated that will exceed this limit the **Mixer error: Delay compensation** dialog appears:

To deal with the problem either remove an effect or effects or go to **Settings > All Settings > Mixer > Mixer Settings** and increase the **Max Mixer delay Compensation - Delay** setting to a value slightly in excess of that proposed in the dialog.

Note: Increasing the Delay value too much steals valuable memory from MassCore

Outboard Latency

Typical latency in ms of outboard gear ranges from 2 to 5 ms. The following chart may help you to compute the proper delay compensation values for outboard equipment:

Delay Chart

Ms	samples@44.1kHz	samples@48kHz	samples@88.2kHz	samples@96kHz	samples@176.4kHz	samples@192kHz	samples@352.8kHz
1	44	48	88	96	176	192	352
3	132	144	265	288	529	576	1058
5	221	240	441	480	882	960	1764
7	309	336	617	672	1235	1344	2470
9	397	432	794	864	1588	1728	3175
10	441	480	880	960	1764	1920	3528
12	529	576	1058	1152	2117	2304	4234
Max Delay (Auto PLUS Manual)	**1216**	**1216**	**2432**	**2432**	**4864**	**4864**	**9728**

Time Alignment of Recorded Clips

All recordings from Input Strips designated as **Input** are automatically time-aligned. E.g. recordings from live inputs.

Recording Bus Returns

When recording the output of an input strip taking an Aux or Bus return, for example to “freeze” a reverb Track, the recorded media will be placed too early in the Timeline. In this situation it may therefore be desirable to designate this Aux or Bus return as a normal **Input** in order to ensure correct time-alignment of the recorded Clip.

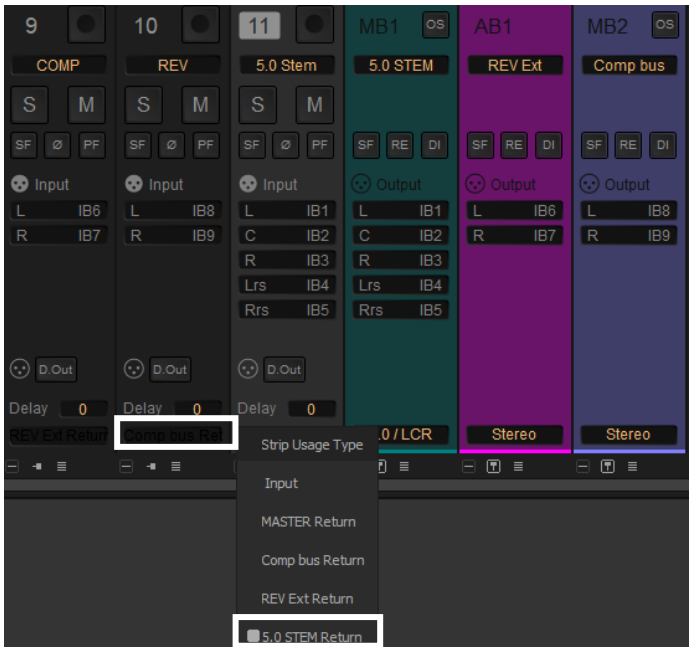
> **Note:** For Power Users the **SABR** debug windows show the delay values applied to each bus /aux node and may prove useful. (Accessible by right-clicking on the Info Bar and selecting from the **Debug** sub-menu.)

Delay Compensation Detail

All digital processing takes a finite amount of time. When **Internal Return Buses** are used to route **Master** output buses back into channel inputs (by selecting an **Internal Return Bus** input from the routing pop-up for the **Bus** output, and selecting an **Internal Return Bus** output as the return channel input) all other buses not so routed must be delayed if the Mixer is to be ‘time-aligned’ I.e. If a signal is fed to two inputs, the first feeding the Main Output direct and the second routed back to an input via (say) a **Stereo Send** bus with the return input strip routed to the Main Output, then the second will be delayed with respect to the first. Selecting **Settings > Enable Delay Compensation** from the mixer context pop-up menu will automatically ensure both signals remain in sync by delaying the signals directly routed to the Main Output by an amount equivalent to the delay introduced by the extra processing in the second path.

> **Note:** For obvious reasons a strip fed by an Internal Bus or buses cannot be routed back to the same internal buses.

Input Strip Mode



Input Type pop-up

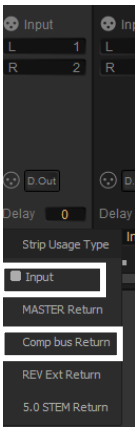
In order for Pyramix to correctly calculate the required delay you have to tell it which bus is the source for the Internal Return Bus. Clicking on **Input** at the bottom of the strip, above the XLR icon, pops-up a list of all the output buses and **Input**. **Input** is the default and means the strip is fed from a physical live input and no delay compensation is required. If any Internal or External Return Bus is ticked and **Automatic Delay Compensation** is turned on, Pyramix calculates the required delay and applies it to all Output buses not feeding a Return Bus.

Delay vs. Delay Compensation

When the Input Strip Mode is set to **Input** the delay setting affects the only the delay on the strip's signal. When **{any Bus name} Return** is selected as the Input Strip Mode the delay setting affects the delay on all other output bus signals to ensure correct time-alignment.

Delay Compensation of External Inputs

Where an Output Bus is used to feed an external processor via a physical output and the external processor output is fed back into Pyramix via an external live input, then the necessary delay compensation must be computed and applied by the operator since Pyramix has no means of determining the delay of the external device. However, the Input Strip Mode (Click on **Input** to pop-up the menu) should be set to the bus feeding the external processor (as above) so that the input channel delay setting affects delay compensation rather than simply delaying the signal through the input strip.



Input Type pop-up

In the illustration, Group Bus **Ext Rev** feeds an external device via physical outputs **17** & **18**. The outputs of the external device are connected to physical inputs **1** & **2**. The channels' **Mode** has been set to **Ext Rev Return** and delay compensation of **256** samples applied.
In contrast **Int FX** SubGroup bus has VS3 and VST plug-ins inserted in the strip and feeds the output buses directly. There is, of course, no reason why an external insert cannot be used in a Group Bus instead of using an Output bus for this purpose.

External Insert Plug-ins

Internal VS3 Engine latency is automatically compensated except for the audio interface I/O latency. Thus you have to manually set the delay of the external unit plus the I/O latency. It is not possible to change the delay or change the bypass status during playback or recording.

Determining Delay Compensation for External Effects Loops

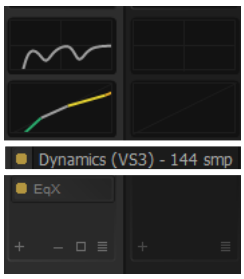
One strategy for achieving this is to route a signal directly to an Output Bus and, via a physical output from a second Output Bus, to the external processor's input. The processor's output is connected to a physical Pyramix input and routed to an input strip. The strip mode must be set to the Bus used as the source. Then you can use impulse sounds, clicks, rimshots etc. to aid manual adjustment of the delay compensation by comparing the direct sound with the sound returning from the external processor.

Determining Delay Compensation for External Insert Plug-ins

A similar strategy can be employed here. Route the signal you wish to treat with an External Insert Plug-in to two input strips. Add the External Insert in one strip only, complete with the external processor in circuit. Delay the untreated strip until the audio is in sync with the treated audio and note the delay value. Then apply this value in the **Ext. Unit Delay** field in the **External Insert** window.

Effects Delay Indication

When the mouse cursor is hovered over a plug-in, in a strip, the required delay value is displayed:



Plug-in Name and Delay pop-up

Here you can see that **Dynamics** currently requires a 144 samples delay to be applied to the other output buses.

This is applied automatically when **Full Delay Compensation** is switched on.

Creating and Configuring Mixers

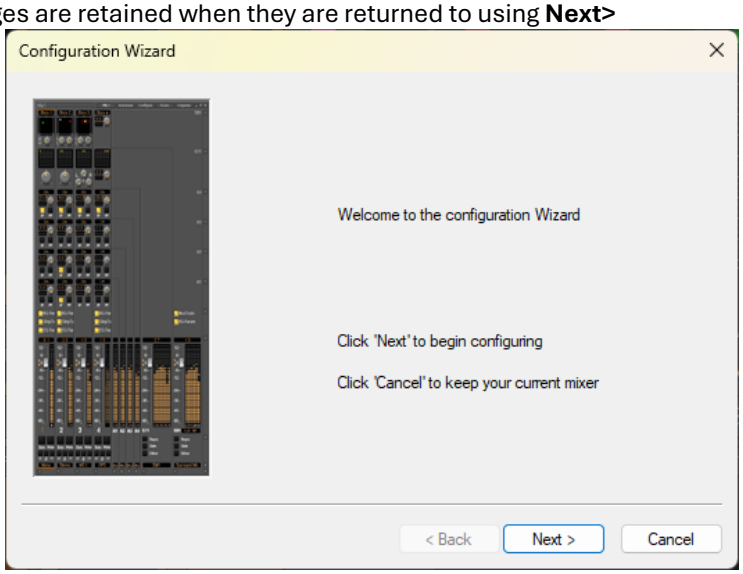
If one of the numerous mixer presets does not quite suit your application it is simple to modify an existing mixer, create one using the Mixer Wizard or design one from scratch. The Wizard can be started from the **New Project Wizard** (**Please See: New Project on page 35**) or from an existing mixer by right-clicking anywhere on the mixer surface and selecting **Settings > Wizard...**

Mixer Configuration Wizard

The **Mixer Configuration Wizard** can be started from within the **New Project Wizard** or from the right-click context menu in an existing mixer, **Settings > Wizard...**

Each dialog has **<Back**, **Next>** and **Cancel** buttons at the bottom.

Note: If the **<Back** button is used to return to a previous page, settings already made in subsequent pages are retained when they are returned to using **Next>**

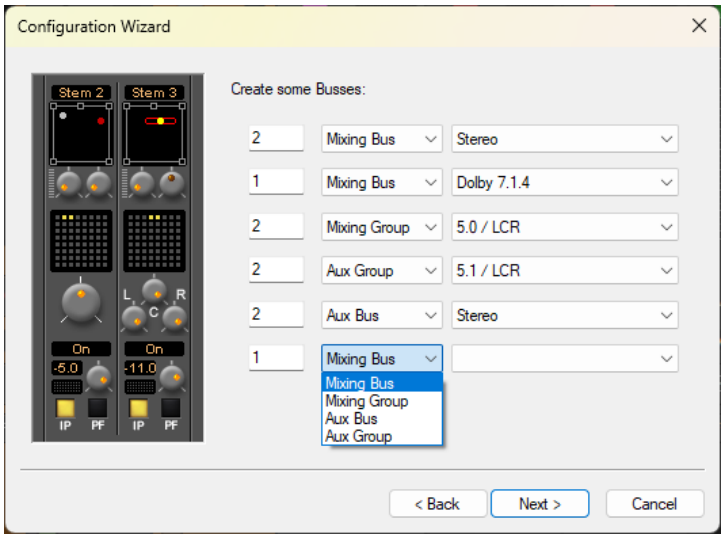


Configuration Wizard Welcome dialog

Back	Grayed out since this is the first page.
Next>	Moves to the next Wizard page.
Cancel	Keeps the current Mixer and closes the Wizard.

Click on **Next** to move to the next page:

Create some Buses:

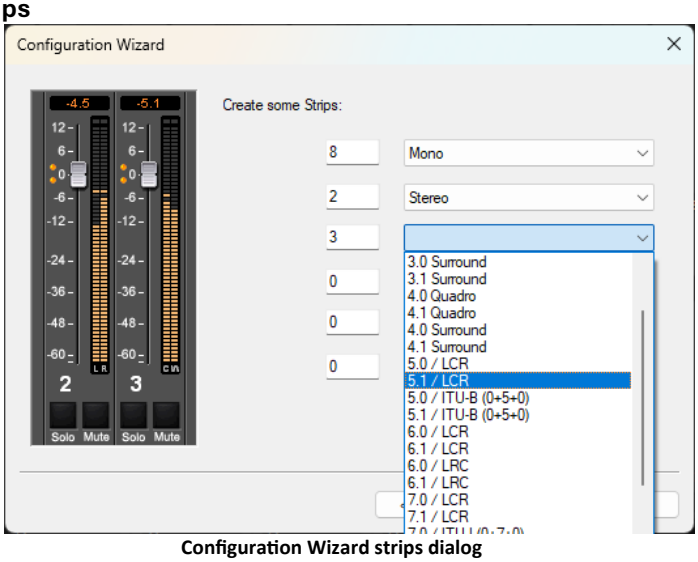


Configuration Wizard Buses dialog

Column 1 Field for the number of Buses to be created.
Column 2 Drop-down list with the four **General Purpose Mixing Bus** Types:
Mixing Bus
Mixing Group
Aux Bus
Aux Group
Column 3 Drop-down list with the 32 Bus Formats available.
Back Moves to the previous page page.
Next> Moves to the next Wizard page.
Cancel Keeps the current Mixer and closes the Wizard.

Type the number of buses required in the left-hand field and select the Type needed from the middle drop down list. choose the Bus Format from the right-hand drop-down list. The six rows are used to create different Bus Types and formats simultaneously. Click the **Next** button to move on to the next page:

Create Some Strips

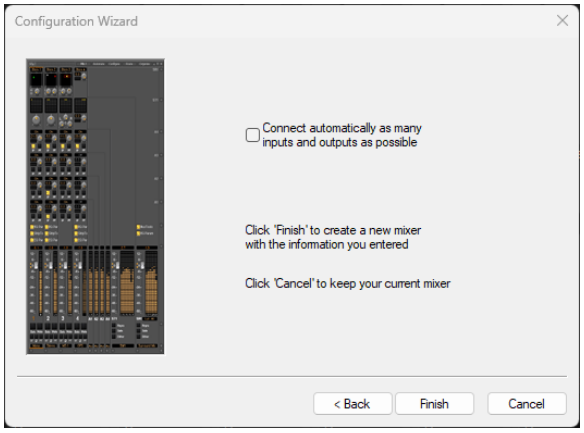


Configuration Wizard strips dialog

Column 1 Field for the number of Buses to be created.
Column 2 Drop-down list with the 32 Strip Formats available.
Back Moves to the previous page page.
Next> Moves to the next Wizard page.
Cancel Keeps the current Mixer and closes the Wizard.

Type the number of Strips required in the left-hand field and choose the Strip Format from the righthand drop-down list. The six rows are used to create different Strip Types and formats simultaneously. Click the **Next** button to move on to the next page:

Connect & Finish



Configuration Wizard auto Connect & Finish dialog

Connect automatically as many inputs and outputs as possible Check the box to auto connect.
Back Moves to the previous page page.
Next> Moves to the next Wizard page.
Cancel Keeps the current Mixer and closes the Wizard.

Checking the **Connect automatically as many inputs and outputs as possible** check-box will create the same number and types of **Tracks** as there are **Input Strips** and connect as many as possible to the available physical inputs in ascending order and connect output Buses to the physical I/O and Track outputs to Mixer Input Strips, although you can easily reconfigure this later. If the box is not ticked, the Tracks will be created in the same way with Track outputs connected to Mixer strips but no physical Inputs or Outputs will be connected.

Note: When the Wizard is run from **New Project Wizard** clicking **Cancel** opens the new Project with a **Blank Mixer Window** (to configure see below).

Configuring a Blank or Existing Mixer

Configuration of the mixer control surface is accomplished via contextual menus. The precise options available will depend on where you click on the mixer. If you wish to affect the entire mixer, right-click on the top bar of the Mixer window. To change options for a Bus, right-click on a blank area of the Bus strip. Similarly, for a channel input strip, right click on a blank area of the Strip. Right-clicking within a function block adds menu entries to the top of the list, relevant to the specific block.

Adding Strips
Right-click anywhere on the Faders, choose **Strip** > **Add** and select the appropriate type of strip to add or rightclick anywhere on the Faders, choose **Bus** > **Add** and select the appropriate type of bus to add.

Removing Strips
To remove a given input strip, bus or group, right-click directly on it and choose **Strip** > **Remove (Strip, Bus** or **Group)** as appropriate. Or select several Strips and choose **Remove All Selected Strips**

Mixer I/O Assignments
To or from physical I/O
To change **I/O** assignments to or from physical **I/O** or the **Internal Return Buses,** click on the appropriate **Input section**. Choose **Connect Input** or **Connect Output** from the pop-up menu and choose the desired connection.

NEEDS PIC with I/O

When connecting a multichannel strip clicking on the header **A/D1** in the above illustration) will connect all channels consecutively.

From Tracks
Note that several Tracks may be routed to the same mixer input strip. Tracks are assigned to mixer input strips either automatically or manually from the **Track Header**. See: **Track Header Panel on page 88**

Further Mixer Configuration Options

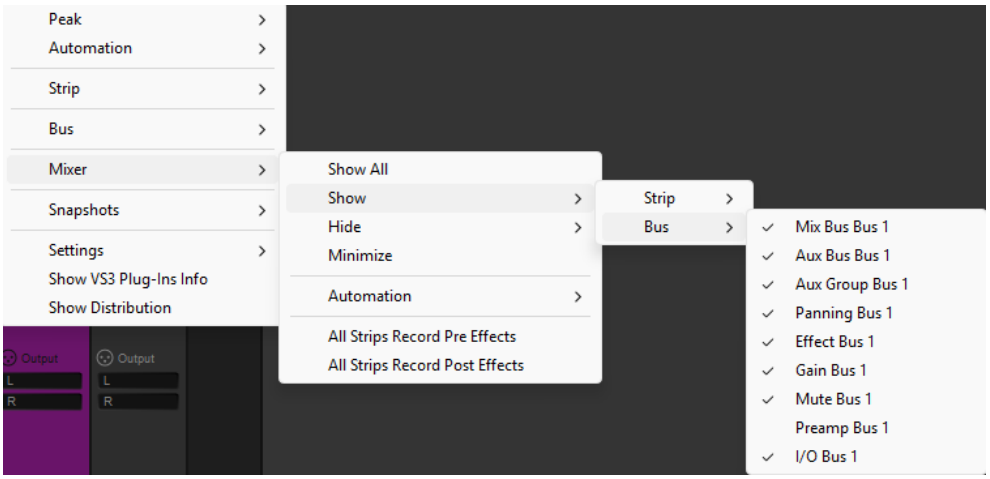
Mixer Context Pop-up menu
The entries on this menu vary according to where you right-click on the mixer surface. At the top of the menu the entries concern the specific mixer component under the mouse cursor when you

right click. The next section of the menu has entries which affect the Strip. Entries from **Mixer** to the end of the menu affect the entire mixer and are available wherever the mouse is right-clicked.

Mixer > Show

Show All Makes all input strips and buses visible

Show / Hide > Selects **Strip**s and **Bus**es to be shown or hidden. When checked, the Buses or strips are visible on the console surface. Both **Show** and **Hide** access the same lists.



Mixer Show / Hide context menu

Minimize When checked, Mixer window is minimized

Automation > These menu choices toggle the Automation mode for the entire mixer.

Follow Strip Mode

Isolate

Play Please see: Dynamic Automation Transport Modes on page 419

Record

Settings >

General... Opens the Mixer Settings window at the **All Settings > Misc > Mixer Settings**. **Please see: Mixer Setting page xxx**

Dithering... Opens the **Dithering** window. **Please see: below and Dither on page 457** for an explanation of the need for dither.

Enable Delay Compensation Enables Delay Compensation for the mixer.

Add Strip

Add Bus

Remove Select **All Strips**, **All Buses** or **All** to remove groups of mixer components or every component.

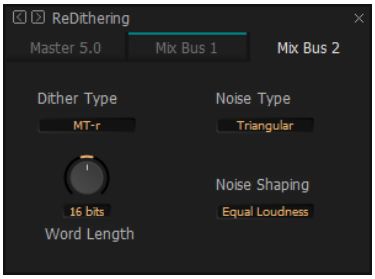
Auto-connect Automatically connects the Mixer inputs and outputs using the available inputs and outputs of the installed daughter card (s) and the Mixers Preferred Monitoring Outputs

Wizard... Launches the Configuration Wizard. **Please see: Mixer Configuration Wizard on page 238**

Show VS3 Plug-Ins Info Pops up the **VS3 Plug-Ins Information** window. **Please see: VS3 Plug-Ins Information on page 360**

Show Distribution Redundant

Dithering Options



Dithering MT-r floating Window

To open the **ReDithering** window, right-click anywhere on the mixer surface and select **Settings > Dithering...**The **Dithering** window opens.

Or click on the DI button on a bus

Selected Bus
The combo box allows the choice of any of the Mixer's buses by directly selecting the TAB

Dither Type
The Pyramix Mixer offers a choice of dither algorithms. **MT-r** and **POW-r** choose in the drop down menu. The right hand panel changes to reflect the options available with the selected dither process.

Word Length
The output word length of the digital audio data can be varied from 8 bits to 24 bits. Click on the rotary knob and drag left and right to adjust the value.

MT-r Options
PDF = Probability Density Function
Refers to **Dither Noise Type**. In basic terms, the addition of a dither signal (noise) into the digital audio streams improves linearity in the reproduction of low-level signals. In other words, as signal level drops (such as in a fade out) dithering helps to maintain a smooth decay. There are three options:

None
No dither signal will be added to the data.
Rectangular
A rectangle shape dither signal will be added to the data. Rectangular distribution is a family of symmetric probability distributions such that for each member of the family, all intervals of the same length on the distribution's support are equally probable.
Triangular
A triangle shape dither signal will be added to the data. Triangular distribution is a continuous probability distribution with lower limit **a**, upper limit b and mode **c**, where **a < b** and **a = c = b**.

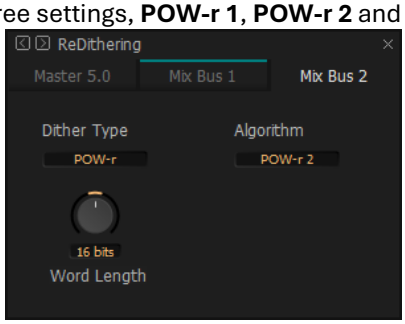
Noise Shaping
Noise shaping is a technique that is used to push quantization noise energy, which in linear digital systems is normally spread over the whole audio spectrum (0 Hz up to half the sampling frequency), into higher frequencies where the human ear is less sensitive to its effects. There are three noise shaping options:

Off
No noise shaping added.
Hi Pass
This provides a first-order high-pass filter for the noise transfer function. This type of noise shaping takes little computational power to produce, but at the expense of not Tracking the characteristics of the human ear very accurately when compared with:

Equal Loudness
Psycho acoustically noise shaped dither inserts an FIR-filter in the feedback path. This shapes the noise as closely as possible to the characteristics of the human ear. More taps in this type of filter allow a closer approximation to the response curve of the ear, but each tap, of course, increases the computational instructions required. The filter implemented here is a 9-tap FIR-filter, which closely approximates the curve of the human ear.

Note: As usual there is no “free lunch”. So **Acoustic** noise-shaping uses more resources than **Hi Pass**.

POW-r offers the choice of three settings, **POW-r 1**, **POW-r 2** and **POW-r 3**.



Dithering POW-r floating Window

- **POW-r**: Is essentially a combination of dither technologies and settings
- **POW-r 2**: Similar to **MT-r Triangular** with high pass noise shaping
- **POW-r 3**: Similar to **MT-r Triangular** with equal loudness noise shaping

Mixer Presets

Mixer Presets can be saved in a user folder or added to the main **Mixer Preset** list either for the current user or all users.

Default Mixer
To Save the current Mixer setup as the default Mixer, right click on the Mixing Console and select **Snapshots > Presets > Store > Default**.

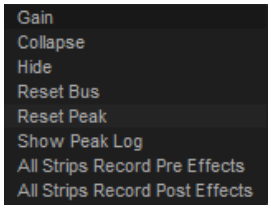
Storing New Mixer Presets
To add a preset to the main list of available Mixer presets I.e. the list which appears when starting a new project, right click on the Mixing Console, select **Snapshots > Presets > Store > New...** and enter a name for your Mixer Preset. If the **Global** check box is checked then the preset will be available for any user logged on the current machine, if not the preset will be available only for the user that created the new preset.

Removing Mixer Presets
To remove a preset from the main list, right-click on the Mixing Console, select **Snapshots > Presets > Remove > (preset you wish to remove)**. The **Remove Preset** dialog box appears with **OK** and **Cancel** options.

Saving / Loading Mixer Presets
Mixer Presets can also be stored in Windows folders. Right-click on the Mixing Console, select **Snapshots > Save**. A Windows Explorer window opens enabling the current Mixer Preset to be named and saved to any Windows folder. Similarly, selecting **Snapshots > Load** enables a Mixer Preset to be loaded from any Windows folder.

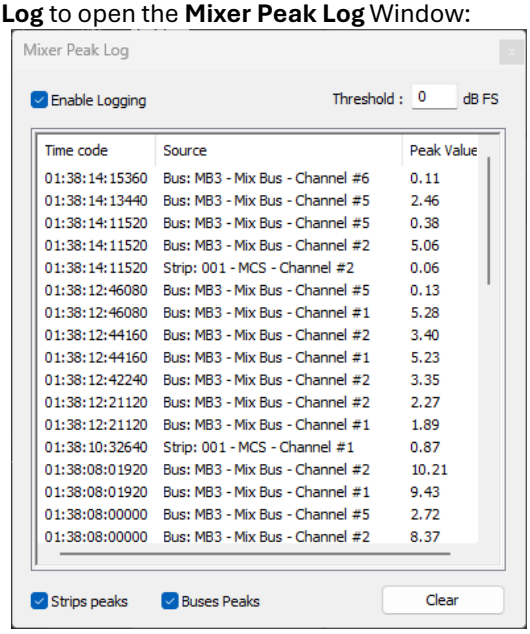
Peak Logger

The Pyramix Mixer is equipped with a Peak Logger. This has obvious applications in Mastering. Click on the Gain Pop-up to access the Gain options:



Mixer Peak Log Window

Click on **Show Peak Log** to open the **Mixer Peak Log** Window:



Mixer Peak Log Window

Enable Logging

Tick the box to enable Peak Logging

Threshold

Type a value here to determine the level above which peaks will be logged. Hit **Enter** on the keyboard to validate the change.

Strips Peaks

Tick the box to record Strips Peaks

Buses Peaks

Tick the box to record Bus Peaks

Note: Both Strip and Bus Peaks can be recorded simultaneously.

Clear

Clicking on the **Clear** button erases all the recorded values since the last time it was pressed. (Or since Logging was enabled.)

Mixer Sharing – toggling instantly projects

Overview

Mixer Sharing enables a single mixer belonging to a project to be used by other projects, which results in rapid switching between Projects. This facilitates copy and paste operations without requiring a mixer re-build each time you switch between Projects. It is also extremely useful when importing AAF, OMF, EDLs etc. and a rapid
means of comparing or reviewing.

Activating Mixer Sharing

Project > Share Mixer Console toggles the feature on and off for the mixer in the current Project. Alternatively, click on the **Share Mix** button in the **Cursor** toolbar to the right of the Edit Mode display.

Shared Mixer – active

Selecting **Create a new Project that shares the current Project Mixer** in the **Interchange - Import** dialog will force Mixer Sharing to active when the import takes place using the mixer from the Project where the import was initiated.

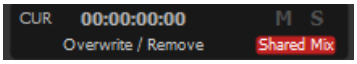
When Mixer Sharing is active the Cursor Toolbar Icon turns to Green, meaning that we're in Shared Mixer Mode and that this is the master Project sharing its Mixing Console.

Note: one can **NOT add/remove strips and/or busses** in the mixer sharing modus. To be able to perform such an action; un-share the mixer, make the changes and share again.

Mixer Sharing in Action

When switching to an open Project, loading a pre-existing Project or creating a new Project, its own Mixing Console will be hidden and the Shared Mixing Console is used instead.

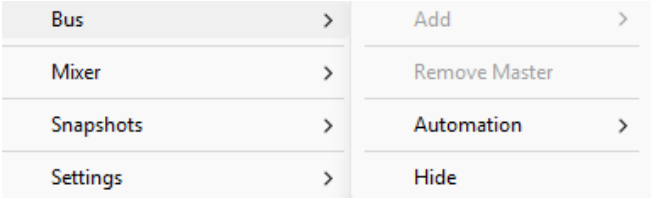
Switching is quasi instantaneous. To reflect this state the Toolbar Icon turns Red, meaning that we're in Shared Mixer Mode but that the currently active Project is a 'slave' and does NOT the own the Mixing Console.



Share Mixer icons - active Slave

Shared Mixing Console Mode can only be terminated when 'Master Project is active. Exit the mode by selecting **Project > Share Mixing Console** or by Clicking the green icon.

Note: It is not possible to exit Pyramix while a Shared Mixer is active. If you attempt to do so, the options are removed or greyed out:



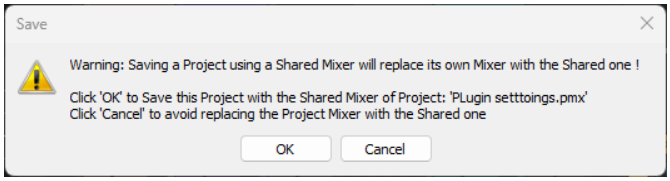
Slave Project Capabilities

When the active Project is **NOT** the owner of the Mixing Console the following apply:

- The Sampling Rate cannot be changed
- The Mixer cannot be modified
- All pages in **All Settings** relating to the Mixer and VS3 are hidden. (Hardware, Mixer, Sampling Rate etc…)
- All actions which use a non-real-time mixer are disabled. (Mix-down, Generate CD Image, Convert, Surround Encode)
- Recording is possible but changing the dubbing Mode is not.

- Automation is disabled in the Project(s) using the slave mixer.

When the Project is saved the Mixer saved will be the shared one. If there is a pre-existing Mixer this dialog appears:



Shared Mixer - Save Warning

If you wish to replace the Mixer saved currently Click on **OK** to accept and close the dialog.
If you do not wish to replace the Mixer saved currently Click on **Cancel**

Note: If you have made editing changes in the Slave Project and wish to Save these without Saving the Shared Console to the Slave Project file do this:

1. Switch to the 'Master' Project
2. De-activate **Mixer Sharing**
3. Switch back to the 'Slave' Project
4. It's original Mixer will be present but minimized.
5. Maximize the Mixer

Note: None of the above apply to the Project sharing its Console (Active Green icon) Everything works as normal when in this Project.

Multiple Projects sharing a single mixer

It is perfectly possible to have several Projects open sharing a single mixer. This can be useful when compiling. It is also possible to create a new Project from a 'Slave' Project. However, the mixer you specify or create will only be saved with the Project if you follow the procedure above. Otherwise, the Shared mixer will be saved with the Project.
If an existing Project is opened from a 'Slave' Project the Shared Mixer will be used. Again, if you don't want to lose the existing mixer when saving the pre-existing Project, follow the procedure above.

Rewire

Propeller Head "Rewire Mixer Application" is supported with Pyramix.

- ReWire supports Sampling Rates from, 1FS to 8FS.
- ReWire support must first be enabled in the VS3 Control Panel under the **Audio Bridge** section.
- The number of Rewire channels available corresponds with the value set in the VS3 Control Panel.
- The Rewire connectivity will appear in the Mixer input selection lists, as Live Inputs.
- Transport, Bars & Beats will be linked between the ReWire client and Pyramix.

Note: At present Rewire cannot be used in combination with ASIO Bridge. Only one mode at a time can be selected in the VS3 Control Panel. Concurrent support will follow shortly.

Legacy Mixer

Legacy bus and strips are automatically converted into Pyramix 15 strips and busses when opening projects from Pyramix sessions containing legacy components in the mixer.

Converting Legacy Buses
Existing legacy Buses can be converted to the new General Mixing Buses. Right-click on the legacy Bus and select **Bus > Convert 'Bus XXX' to the General Mixing Bus model**.

A new General Mixing Bus will be created for legacy Surround Buses, Stereo Buses. Mono Buses are converted to General Aux Buses since General Mixing Buses do not have Gain Control.
A new General Aux Bus will be created for legacy Aux Buses and also for Mono Mix Buses.
A new General Aux Group will be created for legacy SubGroup Buses.

In each case a new Panning Bus is created and associated with the new General Mixing Bus and all automation related to the legacy Bus is transferred to the new Panning Bus.

Surround Buses:
For Multi-Stem Surround groups, multiple General Mixing Buses will be created, one per stem. This is the new paradigm for Multi-Stem. Each new Bus/Stem can be modified later with the Room Editor to reduce (or extend) the number of Channels independently for a more optimized use of Buses, Channels and I/Os. The new Panning Control Bus **Panner Type** is set to **Surround Panner** for all Input Strips but can be changed later to **3D Panner** or **Pan/Balance** per Strip.
The new Panning Control Bus is set to **Dual Source Mode**, **Dual Panner** for each Stereo Input Strip. The **Channel Router** option is selected for any GPS Input Strips and the grid set as per the legacy Bus. However it is recommended to switch to the Panning Bus mode in order to benefit from full re-panning.

Stereo Buses:
The Panning Control Bus **Panner Type** is set to **Pan/Balance** for all input strips, but can be changed later to **3D Panner** or **Pan/Balance** per Strip.
The legacy panning mode is converted to the Panning Bus modes **Balance**, **Single Pan**, **Dual Pan**.

Legacy Mixing/Monitoring/Aux Send and SubGroup Buses
These are the summing buses where mixer strip signals are routed to. Each bus type (Mix, Aux Send or SubGroup) has a **Repro** button in the Master section to allow this bus to output signal only when the system is playing back. No signal will be output in **Stop** or **Record** modes, for example to avoid audio feedback (howl round) in the Studio main speakers when Tracks auto switch to **Input** monitor when **Record**ing or **Stop**ped.

Mix Bus
A mix bus is the destination for the final product of your mix. The outputs of a mix bus are usually routed to a master machine to record the final mix. They can also be routed via **Internal Return Buses**. Apart from their other uses, these enable the final mix to be recorded in Pyramix. Main **Mix**ing, **Aux Send** and **SubGroup** Buses also appear in the **Monitor**.

Mix Buses are available in several formats:
Mono Mix
Provides a single mono output. Any input strip can be routed to it.
Multiple Mono Mix
Provides several mono outputs. Any input strip can be routed to any or all of them
Stereo Mix
Provides a single stereo output. Any input strip can be routed to it
Multiple Stereo Mix
Provides several stereo outputs and allows any input strip to be routed to any or all of them
Surround Mix - 5.1 format
Multiple Surround Mix - provides several surround outputs and allows to route any mixer strip onto any of them.

> **Note:** Unlike mono and stereo multiple buses, input strips can only be routed to ONE 5.1 destination stem of a multiple surround bus. This reflects their normal use. E.g. a common set-up will have three surround bus stems for Dialogue, Effects and Music. Each Input strip is routed to the appropriate surround bus by clicking on the **Stem 'X'** button. All surround bus stems can be summed for monitoring in the **Monitor**.

Ambisonics

Pyramix (since Pyramix 12) includes a complete hybrid, Channel Based/Ambisonic workflow, allowing for encoding, mixing, rotating and decoding Ambisonic signals directly in the mixing console.

Background

Ambisonics is a full sphere sound format. I.e. it can carry height information as well as two dimensional positioning. It was conceived in the late 1960's and developed in the 1970's by Peter Fellgett and Michael Gerzon based on Alan Blumlein's work on coincident stereo in the 1930's. The maths and psychoacoustics involved are hideously complicated and way beyond this User Manual.

Ambisonics can be considered as an extension of M&S (Middle and Side) techniques. A purist Ambisonics microphone array consists of three figure of 8 capsules covering left-right, front-back and up-down with an omni capsule. A tetrahedral array of sub-cardioid capsules can have their outputs manipulated to produce these signals. If the outputs of these mics are recorded directly, the recording is designated A- format. More commonly the mic outputs are encoded into B-format, which consists of a mono omni directional channel and three difference Channels for left-right, back-front and up-down. The best examples of live Ambisonics recording are captured with a tetrahedral coincident microphone array. The Soundfield mic developed by Gerzon and Peter Craven is the classic example although now that the patents have expired others have become available.

After many years in the niche interest doldrums for all sorts of political and practical reasons Ambisonics is experiencing a resurgence thanks to Virtual Reality, Oculus Rift and Gear VR, games and support from You Tube, Microsoft and Facebook.

In B-format W is the omnidirectional reference, Y is left-right X is front-back and Z is up-down. There are two B-format conventions in the standard, **AmbiX** and **FuMa**. (Furse-Malham) They differ in channel order:

AmbiX = W - Y - Z - X

FuMa = W - X - Y - Z

Classic Ambisonics using 4-channel (3-channel for 2D) B format is known as First order. Higher orders use more channels for better spatial location and result in a bigger sweet spot when reproduced on loudspeakers.

1st Order 4 Channels
2nd Order 9 Channels
3rd Order 16 Channels (also known as **HOA** or “Higher Order Ambisonics”
4th Order 25 Channels
5th Order 36 Channels
6th Order 49 Channels
7th Order 64 Channels

Current Facebook, VR, games use 1st and 2nd order. HOA (for Higher Order Ambisonic) means 3rd order generally. Higher orders are more experimental or for specific projects where very precise localization is required. It is important to realize that the number of channels has no direct relationship with the reproduction system. Bformat can be decoded into anything from Mono to a very large numbers of speakers. More importantly it can be decoded into a binaural form suitable for reproduction on standard headphones (a binauralizer 3rd party plugin is required)

Ambisonics in Pyramix

Ambisonics up to the 7th order is fully supported allowing for encoding, mixing, rotating and decoding Ambisonics signals directly in the mixing console.

Ambisonic Decoders supported up to 7th order, and the b<>com Decoders are integrated within the Pyramix mixer.

Note: HOA to Binaural is not available into Pyramix but users can run a Binaural to HOA plugin.

Channel Numbering and Normalization

Internal Ambisonic Channel numbering and normalization is **Ambix/SN3D**.

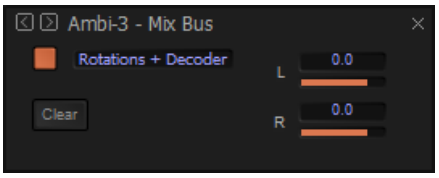
Note: Use plug-in for **A** to **B** format and **Fuma** to **AmbiX** conversion.

Ambisonics Strips and Buses

The Mixer context menu for **Strips > Add > Multi Channel Strip** offers the **7 Ambisonic Orders** in the **Channel Mapping** list (bottom of drop down list).

The Mixer context menu for **Bus > Add > General Mixing Bus** offers the **7 Ambisonic Orders** in the **Channel Mapping** list (bottom of drop down list).

Ambisonic Strips Send to Ambisonic Buses



Mixer - Ambisonic Send Bus Control

If a Channel based Strip is routed to an Ambisonic Bus then the channel-based signal is encoded to Ambisonic and panned using the conventional Panner. The choice is available to use the decoder and the panner or only the decoding by clicking on the send bus of the given Ambisonic strip (drop down menu)

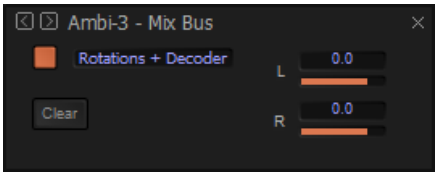
Decoder Decoding only simply mixes incoming Ambisonic signal from the Strip and mixes it in the Bus. For advanced use the **Channel Routing** window gives gain control of the sent signal channel per channel. Keeping all values to **0.0** is recommended.

Rotations + Decoder Enables the Ambisonic Strip scene to be rotated before mixing it into the Ambisonic Bus. No Channel Routing is available in this case, only a Bus Trim, however keeping all values to **0.0** is recommended.

Panner - Ambisonic Pitch Roll Yaw

Ambisonic Strips Send to Channel based Buses

If an Ambisonic Strip is routed to a Channel based Bus, there are two options available in the send control, **Decoding Only (A-Dec)** and **Rotation + Decoding (A-R+D)**.



If a Channel based Strip is routed to an Ambisonic Bus then the channel-based signal is encoded to Ambisonic and panned using the conventional Panner. The choice is available to use the decoder and the panner or only the decoding by clicking on the send bus of the given Ambisonic strip (drop down menu)

Decoder Only simply decodes the Ambisonic Strip signal to the specific Bus speaker arrangement.

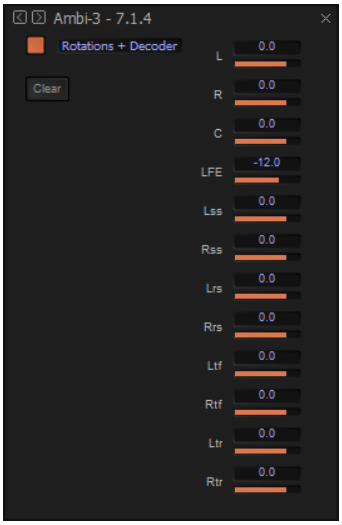
Rotations + Decoder enables the Ambisonic Strip (input scene) to be rotated before decoding it into the specific Bus speaker arrangement (output scene).

In this case a **Yaw/Pitch/Roll** rotations interface is displayed in the Surround Panner window in addition to the specific Channel based Bus speaker arrangement (greyed out):

Panner - Ambisonic Channels Pitch Roll Yaw

Bus Trim

In both cases no Channel Routing is available, only Bus trim. If the specific Channel Bus speaker arrangement contains an LFE or LFE2 their content is simply the channel 0 (W or ACN0) of the incoming Strips, and an automatic trim of **-12dB** is applied. This is modifiable in the Bus Trim window if needed:



Mixer - Bus Send Trim window

Channel Based Strips Send to Ambisonic Buses

If a Channel based Strip is routed to an Ambisonic Bus then the channel-based signal is encoded to Ambisonic and panned using the conventional Panner.
No Channel Routing is available in this case, only a Bus trim, however keeping all values to **0.0** is recommended.

The Ambisonic look is also displayed in the main Surround Panner Window where two additional sliders for **Azimuth** and **Elevation** are also displayed.:

Panner – Ambisonic – mono channel strip

If a Stereo or Multichannel Strip is routed to an Ambisonic Bus then the channel-based signal is encoded channel per channel to Ambisonic and panned using the conventional Panner using the same options: (**Balance**, **Dual- Pan**, **Single-Pan** with **Source Size**, etc…). In this case two additional sliders for **Azimuth** and **Elevation** are also present in the Surround Panner window.

Panner – Ambisonic – stereo strip BALANCE MODUS

Panner – Ambisonic – stereo strip DUAL-PAN MODUS

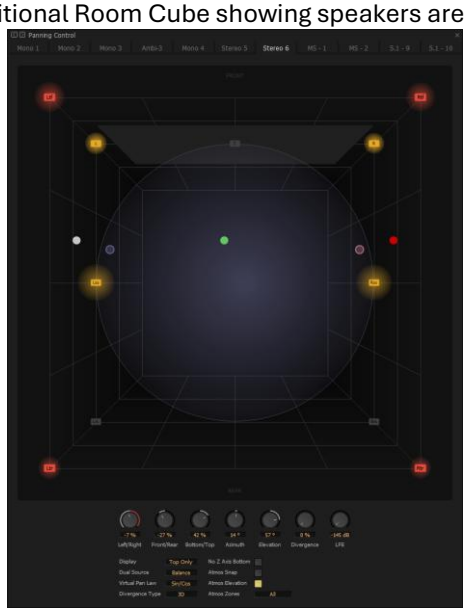
Panner – Ambisonic – stereo strip SINGLE PAN MODUS

Panner – Ambisonic – stereo strip MS DECODER MODUS

Ambisonic Surround Panner

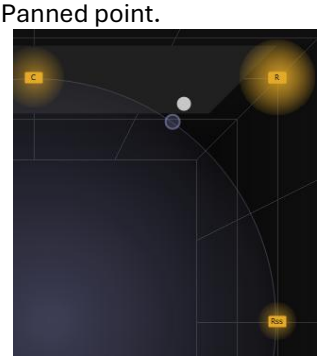
Tip: To be able to keep the X or Y axe constant; **holding SHFT** allows a vertical move only and holding **CTRL allows** a horizontal move only (this is also valid for VS3 plugins)

If both a Channel based Bus and an Ambisonic Bus are enabled for a given Strip, both the Ambisonic and the traditional Room Cube showing speakers are displayed.



Ambisonic Panners - Channels

In the Surround Panner window when an Ambisonic Bus is displayed (showing the Ambisonic logo) a light Blue circle is displayed following the White square pan point. This is the Azimuth/Elevation equivalent of the X/Y/Z point, with a Radius of 1.0, being the intersection of a straight line between the pan point and the center of the sphere crossing the surface of the sphere. This is the Ambisonic Panned point.



Ambisonic Panner - Pan Point

The Surround Panner window offers a new Display Mode button which toggles between the conventional Top and Back views, a new Top and Cylindrical View and a new Cylindrical View only.

Surround Panner – Cylindrical Ambisonic

When manipulating the Cylindrical View, Azimuth and Elevation are affected by the movements and the Radius is automatically maintained at 1.0, ensuring that both the conventional panned point and the Ambisonic panned point are located on the scene sphere surface.
If the **Ctrl** modifier is kept depressed while manipulating the Cylindrical View, the conventional panned point is constrained to stick to the edges of the X/Y/Z cube (instead of the sphere) and therefore always moves on a straight line between speakers. This allows the Cylindrical View to be used in an optimal way when panning Channel based signal.

Monitor

Monitor ! Window

Scope

Pyramix has a dedicated **Monitor** section. This extremely powerful tool offers comprehensive monitoring facilities including summing and downmixing for all supported formats. External Machine Inputs, comprehensive Talkback, Foldback and External Metering are also supported depending on your system specification.
The **Monitor** presents monitor outputs of all buses present in the current Mixer as sources. It is also possible to configure external sources both for recorder returns and for talkback. Sources can be summed for monitoring without affecting the Mixer bus outputs. This is useful, for example, when you need to listen to a guide track while recording.
You do not have to use the **Monitor** and disabling it will save DSP power but, with complex Mixers and routing, the Monitor helps to keep things logical.
The monitor is also used to output the audio signal from the audition function of the Media Manager and Libraries as an unformatted input. (I.e. Routed to LRC in a Surround 5.1 Speaker Set and to LR in a Stereo one)

Monitor Hardware Control
Many functions of the Monitor can be mapped to a hardware controller or to the keyboard. To facilitate this, the commands are available in the **Monitor** menu. Please see the documentation for your hardware controller, **Remote Control on page 599** and **Customizing Keyboard Shortcuts on page 526**.

Monitor integration within Anubis and MT-48
With the Monitoring Mission of Anubis with firmware 1.8.0 and above (AES67/RAVENNA modus only) one can directly have all the **Bus Mix, Bus Groups, Aux Mix and Aux Groups** (Object bus?) automatically as a **Source** in Anubis. Please refer to guide for details

By default the **Monitor** window is shown. It can be opened with **View > Monitor** or toggled with the icon in the View Toolbar. 

Monitor Main Monitor Window

The Monitor setup can be reached by the menu button on the top right. It will have following options + **Monitor display size**. **Disable/Enable Monitor, Monitor, Configure, External and Talks**.

Monitor UI (User Interface)

The **Monitor !** window is divided vertically into three sections.

Sources, left-hand section:
The button top-left of the title bar enables/disables the Monitor and lights yellow when enabled. This allows DSP power to be saved when comprehensive monitoring control is not required. Below the **Enable Monitoring** button is a tree view of all buses used in the mixer. Clicking on the **+** and **-** boxes shows and hides branches in the usual way. Click on any complete bus or any available stem or any bus/stem channel to select it for monitoring. Selection is exclusive unless the **Ctrl key** held is down. Then selection is cumulative and clicking adds or subtracts Sources according to their current state.

Buses / Externals button

Note: At bottom left in the screenshot above the button labelled **Buses** indicates which sources are available for activation. Clicking on this button toggles through **Buses**, **Externals** and **Buses / Externals**.

Note: Multiple selections are made by holding the **Ctrl** key and clicking.

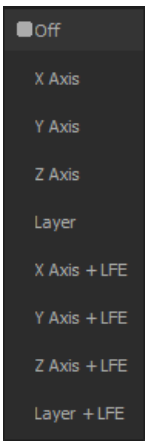
Main, centre section:
Selected Sources
<< SR1 >>: Select previous/next Pyramix source. Only sources visible in the **Sources** section are available. I.e. If the component channels of a bus or stem are collapsed this bus or stem is switched as a unit when the component channels are visible in the **Sources** section then clicking on the **<<** or **>>** buttons steps through each available channel in turn.

<< -- -- >>: Select previous/next External Source. Only External Sources visible in the **Sources** section are available.

Note: Clicking on any of the **<<** or **>>** buttons cancels the selection made previously in the **Sources** section.

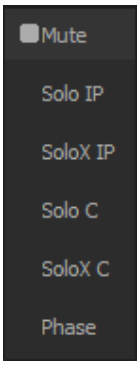
Selected Output
<< Atmos 7.1.4 >>: Select **previous/next Speaker Set**.
<< Main >>: Select the **previous/next Downmix** defined in the Configure page.
Main area
Speakers are only shown when connected in the **Configure** page.
Halo Meters
The speakers have "**halo**" meters as seen above. The bigger the colored area, the louder the speaker. (Red halo = overload)
The buttons at the bottom determine the linking and function of the active Speaker buttons.

Link modes



Link	Clicking on this button pops up a list of possible **Link Modes**.
Off	No Link is applied to parameters selected (Mute, Solo, Solo X, Phase…)
X Axis	Links Left and Right (and everything along the X axis).
Y Axis	Links the Front with the Back (and everything along the Y axis).
Z Axis	Links the associated speaker in all the height layers Tl +L + Bl etc.
Layer	Links the associated speakers that are on the same Z layer.
X Axis + LFE	Links Left and Right (and everything along the X axis) including LFE.
Y Axis + LFE	Links the Front with the Back (and everything along the Y axis) including LFE.
Z Axis + LFE	Links the associated speaker in all the height layers Tl +L + Bl etc including LFE.
Layer + LFE	Links the associated speakers that are on the same Z layer including LFE.

Modes



Mute	Clicking on a speaker mutes it. Selections are cumulative. **IP = In Place**; keeps the audio in the spatial positioning.
Solo IP	Clicking on a speaker solos it. Selections are cumulative.
SoloX IP	Clicking on a speaker solos e**X**clusive on the clicked speaker. **C = Center;** routes the soloed channel(s) to the Center speaker or equally to the L/R
Solo C	Clicking on a speaker solos it. Selections are cumulative.
SoloX C	Clicking on a speaker solos e**X**clusive on the clicked speaker.
Phase	Toggles the phase of the selected speaker(s). Useful for quick image checks

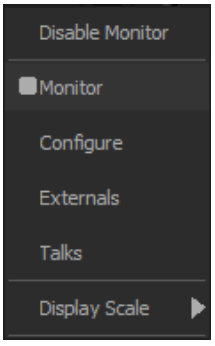
Output, right-hand area

Monitor Level box	Displays the current output level. Output level can be entered numerically in the box after clicking on it.
Volume Knob	sets all the output gains in a range from -144.5dB to +24dB. Double-click to set it to the Ref Value.
Mute	button mute the outputs.
Dim	button reduces the output level by an amount set in the Dim Value. Default value is -20dB.
Volume Max	Maximum permissible volume in dB
Dim Value	Dim Value in dB
Ref Value	Reference Value in dB

Note : the Monitor Section of Pyramix is saved when exiting the application and will be applied to all projects that are opened in the very system, the Monitoring Section is not project based.

Top right menu

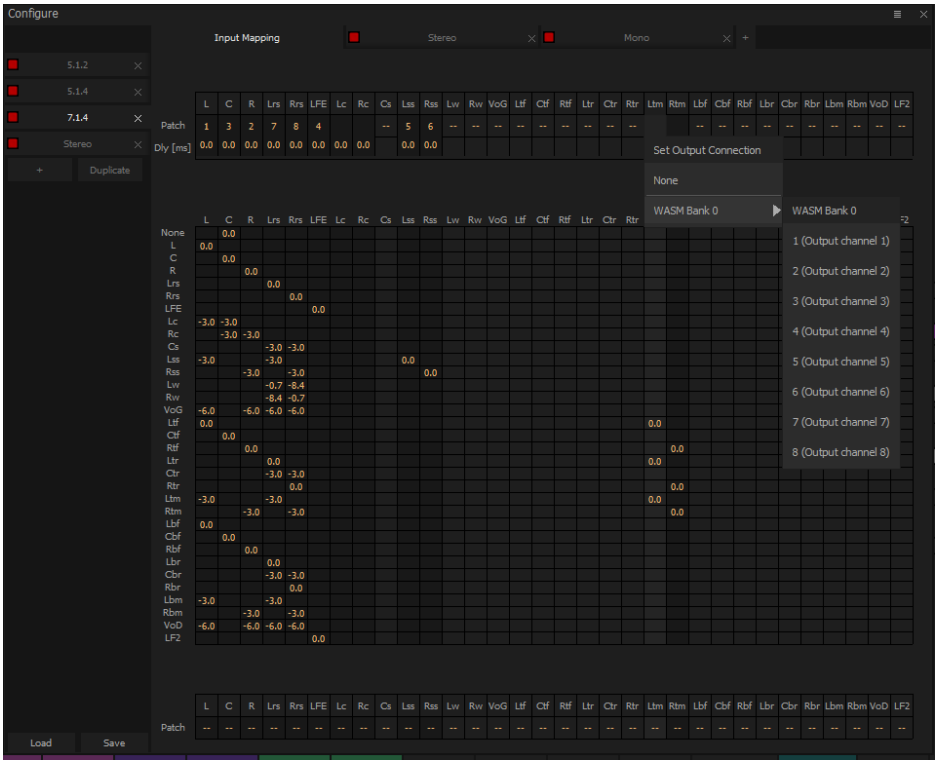
The Top right menu allows to enable/disable and to configure the monitoring section



Disable/Enable Monitor	Activates or deactivates the entire Monitor Section Sets the Monitor Section back to its normal UI
Configure	Configure the Monitoring section for outputs, speaker sets, downmixes and more. See **page 259** for details.
Externals	Set and configure External Inputs (Tape Returns) see page xxx for details.
Talks	Set and configure Talkbacks. See page xxx for details.
Display Scale	As for the mixer, choose to follow the scale (size) set in the graphic system of personalize the scale of the displayed Monitoring Section.

Speaker Sets

Speaker Sets are set-up in the **Configure** page.
A speaker set consists of:
A **Patch**: This connects signals to the physical outputs of the output device(s). The number of connection will depend on the number of speakers you want to connect. Since the number of available live outputs depends on the selected sampling rate, the patch will differ for 1Fs, 2 Fs, 4Fs and 8 Fs sampling rates.
A **Main grid**: this matrix defines the relation between the Mixer's buses output channel types and the monitor's output channel types (thus the monitor's physical outputs).



Monitor Configure Window

A set of **Downmixes** (max: 4) : A downmix is a an alternative grid which uses the same patch as the main grid. In this page you can patch the outputs of you monitor, add/remove downmixes, and defines the corresponding grids in dB (only the channel types which are patched).

Configure page

The **Configure** page enables multiple **Speaker Sets**, each with multiple down-mixes, to be created and edited. Nine factory Speaker Sets (On the left of the page, labelled on a red background at the top of the **Speaker Sets** list) are installed with Pyramix. Their Main channel to speaker Main Grid and Down-Mix assignments cannot be changed, but their output Patches from speakers in the Monitor to physical outputs can.

Speaker Types

The following Channel/Speaker Types are available:

None	(Channel Type only. Used for Buses and Media with no Type assigned.)
L	**Left**
C	**Center**
R	**Right**
Ls	**Left Surround**
Rs	**Right Surround**
LFE	**Low Frequency Effects**
Lc	**Left Center**
Rc	**Right Center**
Cs	**Centre Surround**
Sl	**Side Left**
Sr	**Side Right**
Wl	**Wide Left**
Wr	**Wide Right**
VoG	**Voice of God**
Tl	**Top Left**
Tc	**Top Center**
Tr	**Top Right**

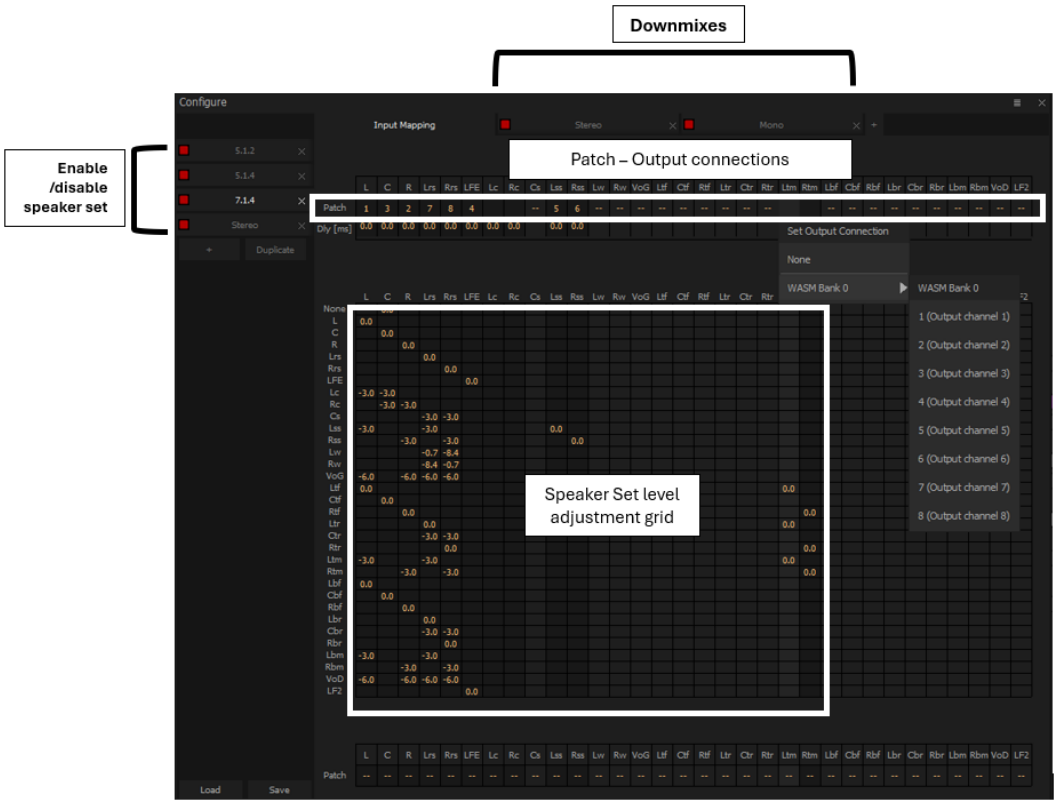
Trl	**Top Surround Left**
Trc	**Top Surround Center**
Trr	**Top Surround Right**
Tsl	**Top Side Left**
Tsr	**Top Side Right**
Bl	**Bottom Left**
Bc	**Bottom Centre**
Br	**Bottom Right**
Brl	**Bottom Surround Left**
Brc	**Bottom Surround Center**
Brr	**Bottom Surround Right**
Bsl	**Bottom Side Left**
Bsr	**Bottom Side Right**
VOD	**Voice of Devil**
LFE2	**Low Frequency Effects 2**

Factory Speaker Sets

None	**11.0**
Mono	**9.1 / ITU-E (4+5+1)**
Stereo	**11.1**
2.1	**Dolby 3.0**
Stereo Surround	**Dolby 5.0**
3.0 / LCR	**Dolby 5.1**
3.1 / LCR	**Dolby 7.0**
3.0 Surround	**Dolby 7.1**
3.1 Surround	**Dolby 9.1**
4.0 Quadro	**Dolby Atmos 5.1.2**
4.1 Quadro	**Dolby Atmos 5.1.4**
4.0 Surround	**Dolby Atmos 7.1.2**
4.1 Surround	**Dolby Atmos 7.1.4**
5.0 LCR	**Dolby Atmos 7.1.6**
5.1 LCR	**Dolby Atmos 9.1.2**
6.0 LCR	**Dolby Atmos 9.1.4**
6.1 LCR	**Dolby Atmos 9.1.6**
6.0 LRC	**10.2 TMH**

6.1 LRC	**12.2 TMH**
7.0 LCR	**Auro 8.0**
7.1 LCR	**Auro 9.1**
7.0 / ITU-I (0+7+0)	**Auro 10.1**
7.1 / ITU-I (0+7+0)	**Auro 7.4 / ITU-S (4+7+0)**
7.0 SDDS	**Auro 11.1**
7.1 SDDS	**Auro 13.1**
7.0 / ITU-C (2+5+0)	**KBS 10.2 / ITU - F (3+7+0)**
7.1 / ITU-C (2+5+0)	**KBS 22.2 / ITU - H (9+10+3)**
8.0 LCR	**Cube**
8.1 LCR	**Cube + Midlayer**
9.0 LCR	**Cube (Corners + Faces)**
9.1 LCR	**Cube (Corners + Faces + Edges)**
9.0 / ITU-D (4+5+0)	**30.2 La Totale**

They and each of their down-mixes can be enabled/disabled in order to determine which ones are visible in the main Monitor page.



Monitor Configure Window

The **Configure** page is divided into four main areas; **Speaker Sets** and **Down-Mixes**, **Available Sets**, **Output Speakers Patch and Delay[ms]**, **Main Grid and Down-Mixes** and **Output Metering Patch**.

Available Sets

To select an existing Speaker Set in order to view or alter its settings, click on its title in the **Available Sets** list. The label will become underlined and the Set's parameters will appear in the grid. If the Set has Down-Mixes already defined there will be one or more tabs next to the **Main** Tab in the **Main Grid and Down-Mixes** area.

Four sets, **Stereo, 5.1.2, 5.1.4 and 7.1.4** are factory defined and cannot be altered. New Sets and Down-Mixes can be **Create**d, **Duplicate**d and **Delete**d using the Command buttons.

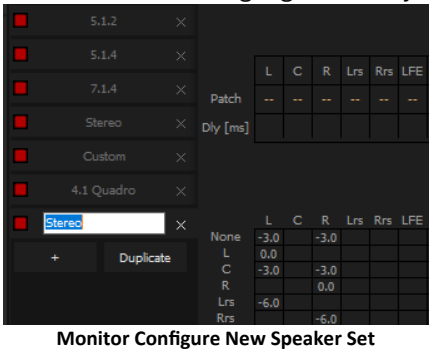
Commands

Speaker Sets

New Set

Clicking on **+** and selecting **a predefined speaker set** creates a new Speaker Set with a matrix Grid with the common downmix values that can be modified and adds a new entry to the **Available Sets** list with the label highlighted ready for text entry.

Clicking on **+** and selecting **None** creates a new Speaker Set with a blank matrix Grid and adds a new entry to the **Available Sets** list with the label highlighted ready for text entry.



Monitor Configure New Speaker Set

Type a suitable name and click on a blank area or hit **ENTER** to accept the name.

Duplicate Set

Creates a new Speaker Set with a the same matrix Grid settings and Down-Mixes and settings as the set currently selected (underlined) and displayed in the grid. The new label is highlighted ready for text entry.

Delete Set

Deletes the currently selected (underlined) Speaker Set.

Down-Mixes

Add Down-Mix

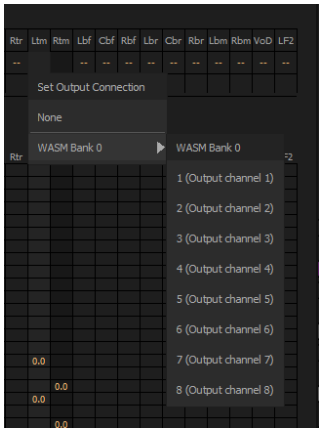
Creates a new Down-Mix associated with the currently selected Speaker Set with a new tab in the **Main Grid** and **Down-Mixes** section.

Remove Down-Mix

Deletes the current Down-Mix

Output Patch:

This is where the Monitor's Speaker Set outputs are patched to physical outputs.



Monitor Configure Output Patch

Clicking on a cell pops up the **Set Output Connection** menu with all available physical outputs grouped by their connectors. The sub-menus list the group and the individual channels. Select an ndividual channel to connect it or select the group, e.g. **WASM Outpu 1** to connect the whole group in ascending order from the cell clicked on.

Note: Each Speaker Set has its own **Output Patch** associated with it. This is useful where different speakers are used for different formats. If there is only one set of speakers patch all Speaker Sets to the same physical outputs.

Double Assignment

When an output of the Mixer and an output of the Monitor are connected to the same physical output then these are summed and the Mixer displays the connection in orange as a warning.

Speaker Delays

Delay can be set per Speaker by clicking in the box below the Output Connection and typing in a value. Speaker delays are typically used to compensate for the physical positioning of the loudspeakers for example where the Left Centre and Right speakers are placed in a straight line, the Centre speaker will be nearer to the listening position and should be delayed accordingly.

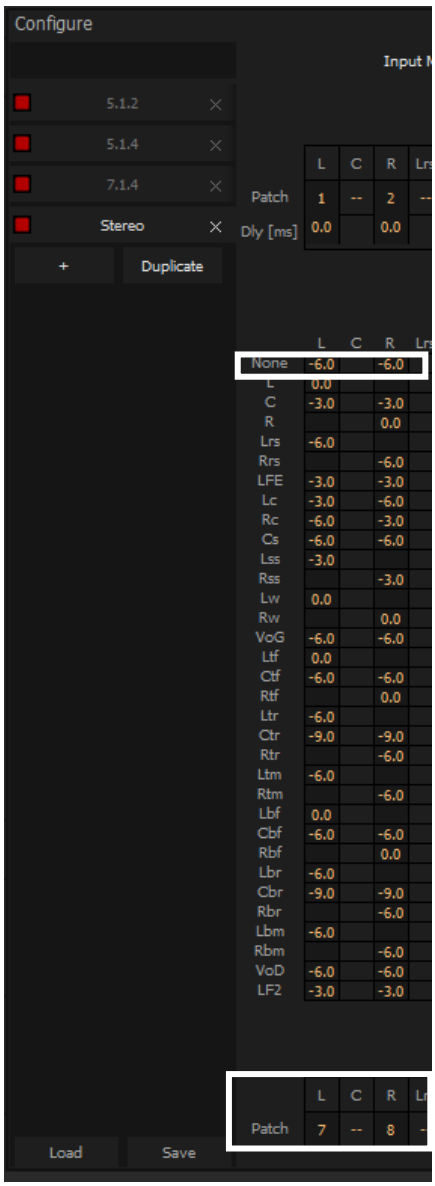
Saving Speaker Sets

Mixer to Monitor connection status is saved in the project.

The Speaker Set settings are saved when you leave the page to go back to the **Monitor** page; otherwise, modifications are not saved.

Media Manager and Library Monitoring

The Pyramix Monitor Panel is used to audition Cues in the Media Manager and Libraries.



Note: The **None** channel type is used to monitor media which do not have a channel type set in metadata. In order to be able to audition such media in the **Media Manager** and **Libraries** the **L** and **R None** entries in the **Main Grid** matrix must be set to a value, e.g. **0.0**.If you plan to audition Surround material also set the **C** entry to a value e.g. **-3.0**.

External Metering

If you wish to use your favourite external hardware meters with Pyramix this can be achieved easily and conveniently.

Under the Main Grid of the **Monitor Configure** page an extra set of 32 patches is provided to configure external outputs specifically for metering.

Patches are made in exactly the same way as the Speaker **Output Patches**. For more details **see page 262**

Monitor Configure Media Manager

External Inputs

External devices may be added in the Monitor panel. This is useful for connecting monitoring returns from the Studio's fixed external audio devices such as recorders.

Adding an External Machine

Up to 8 new externals can be added.